Computer studies form two work

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# *Chapter 1*
Internet and e-mail
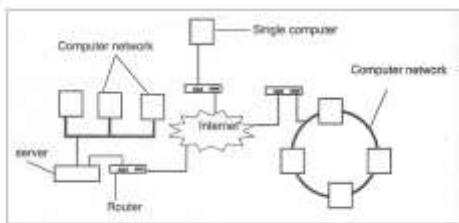
Internet

- It's a large network of networks that covers the whole world and enables millions of computers from different organisations and people to communicate globally.

Description of Internet

Logical view of the Internet

- The term Internet refers to global interconnection of computer networks for the purpose of communication and resource sharing. Figure left shows how computes and computer networks are interconnected to form the Internet.   5

Development of Internet (1969)

- In 1969, a research body in USA (ARPA) Advance Research Project Agency set up a computer network that connected for universities and was given the name ARPANET. ARAP's goal was to allow multiple users to send and receive information at the same time.

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Development of Internet (1973-1981)

- By 1973, e-mail was the most common service on the Internet. By 1981, many people had seen the importance of computer networking and the Internet. ARAPnet formed the backbone on which many organisations started connecting to, hence expanding it.

Development of Internet (1987-1994)

- By 1987, the Internet boasted of 10,000 host computers. As the importance of Internet grew, businesses spent billions of dollars to improve it in order to offer batter services to their clients. By 1994, 3 million computers were connected to Internet. Today the Internet has grown and covered the whole world.

Importance of Internet

- The importance of Internet can be seen through its contribution to;

  - Research activities
  - News and information dissemination
  - Leisure
  - Communication
  - Business Transaction etc.

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Internet Connectivity Requirements

- Telecommunication facilities
- Satellite transmission
- Modem
- Wireless telecommunication
- Internet Service Providers (ISP's)
- Internet Software
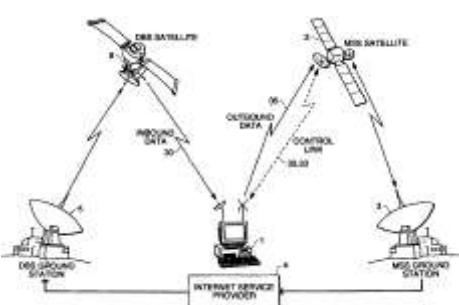
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Telecommunication facilities

- Internet relies on telecommunication facilities like telephone lines, telephone exchange station and satellite transmission in order to cover the whole world. Therefore a computer is connected to the external world through a telephone line and has to dial a remote computer on the net to establish connection for data transfer.

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Satellite transmission

- Intercontinental transfer of data is achieved by having satellite base stations transmitting the data through a wireless uplink channel to the satellite. The satellite then sends the data signal to the base station on another continent where it is picked up and sent to telephone exchanges for transfer to the destination computer. Figure left shows a logical local and intercontinental connectivity.

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Modem

- It's a special digital to analog interface card that changes data from digital to analog so as to be transmitted on telephone lines and on receiving end the data is changed from analog to digital for computer to understand.

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Wireless telecommunication

- With the dynamic growth in mobile communication and computing, it is now possible to access Internet using devices such as mobile phones, PDAs and notebook PCs. Heard about Wireless Fidelity to a hotspot?

  Global system for mobiles (GMS) provides a wireless connectivity to mobile devices users known as General Packet Radio Service (GPRS).

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Internet Service Providers (ISP's)

- They are companies that offer Internet Services to end users. They provide the Internet services to end users at a fee. Examples of ISP in Kenya include;
  - Swiftkenya
  - Africaonline
  - Todays online
  - Wananchi online
  - Interconnect

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Internet Software

- Internet software help facilitate your access to Internet. To achieve communication between computers special software called **Protocol** is needed.

There are two types of protocols used with Internet.

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Types of protocols

- Transmission Control Protocol (TCP) – it governs how data is transferred from one computer to the next.

- Internet Protocol (IP) – it determines the addressing system on the Internet.

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Internet Service 1

- E-mail – this is the exchange of electronic letters, data and graphics on the Internet.

- Electronic Learning (E-learning) – this is learning through interaction with special programs on the computer.

- Internet fax – Internet provides you with complete fax facilities from your computer.

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Internet Service 2

- Electronic Commerce (e-commerce) – it's a commercial activity that takes place by digital processes over a computer network, usually the Internet between and among entitles in the private sector, government and members of public i.e. the buying and selling of goods and services over the Internet.

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Internet services 3

- Instant messaging – this is a more enhanced messaging service that allows two or more people to communicate directly. To get the services, you must first register with an instant messenger such as Yahoo! Messenger.
- Newsgroups – are organized groups of Internet users who wish to share ideas and interests. Once you join a newsgroups, you can participate in discussion forums and debates.

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Internet Service 3

■ World Wide Web (WWW) – in order to connect a
network to the Internet, the local area network needs
an Internet server. This server is given the name world
wide wed (www) and has all the information that
others on the Internet access. Individuals and
organisations establish sites where their web
documents can be placed for easy access by external
world. These sites are called **websites** and each has
a special address called **Uniform Resource Locater
(URL)** that is used to access them

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Web portal

Accessing the Internet

Mozilla browser

- Applications that enable a user to access the Internet are called **Web browsers** e.g. Netscape Navigator, Internet Explorer, Mozilla browser etc.

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Login/Sign In

- To access a website, type the full address of the website in the address bar then press enter key. Some websites allow free access to all their pages by all visitors. However others require people to be members hence a new visitor has to register (sign up). The registration process gives the visitor a **user name, pass word** that can be used to sign in or log on the website for each visit.

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Surf/Browse

■ Surfing /Browsing is the process of accessing Internet resources like web pages and website.

Parts of Internet Explorer window

Uniform Resource Locator

- The Uniform Resource Locator (URL), simply referred to as the web address, connects the user to a particular website. The URL has two basic parts.
  - Protocol – standard used to connect to the resource e.g. hypertext transfer protocol (http://) and file transfer protocol (ftp://). For example, if you type http://www.google.co.ke, Google home page is displayed.
  - Domain name – name of the web server where the resource is located.

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Navigation toolbar

- The navigation toolbar (Figure below), consists of buttons you can easily use to navigate the web. These include; back, forward, refresh, home, search and stop

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Functions of each button on the navigation toolbar 1

- Back – returns the browser to the immediate former web page.
- Next – moves the browser to the next web page in case a person had clicked the back button.
- Stop – is used to stop loading the current web page.
- Refresh – is used to reload a web page after failuring the current attempt.
- Home – takes the user to the first page (the home page) of the default website.

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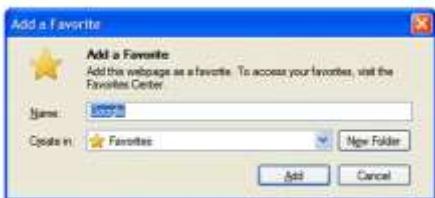
Functions of each button on the navigation toolbar 2

- Search – enables a person to search for information on the website.
- Favourites – displays all links bookmarked to be revisited later.
- History – displays the websites that were visited in the recent past.
- Mail – is used to view and send e-mails.
- Print – is used to print web pages.
- Go – is used to load the website whose address is in the address bar.

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Adding a website to favorites

Bookmarking a web page

- Bookmark those web pages that you are likely to revisit by adding them to the favorite.

How to use favorites

- To bookmark a site;
  1. On the Favorites menu, click "Add to Favorites"
  2. Type or click "OK" to accept the name of the new favorite.
  3. To make the site available off-line, check "Make available off-line".
- To view or visit your favorite later;
  1. Open the Windows Explorer.
  2. Locate the favorites folder and open it.
  3. Click the favorite you wish to view.

Hyperlinks and Search Engines

- A Hyperlink is a text or picture on an electronic document, especially web page that causes web pages to open when the link is clicked.

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Search Engine
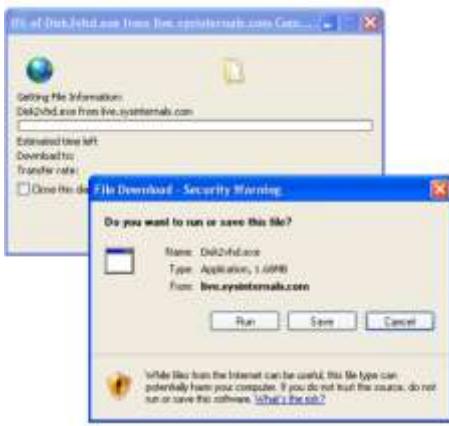
Google search engine

- It's a program that searches documents for specified keywords and returns a list of the documents where the keywords were found. The common search engine includes; Google, Yahoo, MSN etc.

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Downloading

■ After searching and finding information on the net, you may want to save the information locally on your computer. The process of transferring information from a remote computer to a local storage is called **downloading.**

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Printing a web page

Print command on the navigation toolbar

Print dialog box

1. Click "Print" button on the "Navigation" toolbar. (Print dialog box is displayed).
2. In the "General" tab, select a printer which you want to use.
3. Set other options.
4. Click "Print" button.

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Electronic Mail (E-mail)

- Electronic mail refers to the sending and receiving of electronic letters and documents on the Internet.

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E-mail Software

- E-mail Software falls under communication software that are designed to help the user to read and send individual text documents on the Internet so long as the sender and receiver have an e-mail address.

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E-mail Facilities

- Mails

- File Attachment

- On-line meeting

- Telephone messages

- Contact Management

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Mails 1

- Checking Mail – in order to check mail the user has to open the e-mail account by providing the correct user name and password. In e-mail account, click the **Inbox** command to view a link list of all received mails.

- Compose a mail – composing implies writing. To compose a message, click the **compose** command.

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Mails 2

- Send mail – to send mail, type the correct e-mail address of the recipient in to; text box, type four letter then click **send** command.

- Forward mail – a received mail can be forwarded to another recipient. After reading click the **Forward** command and then provide the address of the recipient. 41

Checking for mails in Yahoo

- The use Yahoo mail, you first sign up for an e-mail account. Yahoo assigns each user a unique user name referred to as an ID and a password.

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How to check an e-mail in Yahoo

1. Sign in using your "ID" and "password".
2. Click "Check mail" button then "Inbox"
3. In the "Inbox" list (figure left), click the subject of the mail to read.
4. Read the mail. Open an attachment if any.

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How to check an e-mail in Outlook Express

1. Launch "Outlook Express" from the taskbar.

2. On the Folders list, click "Inbox"

3. Read the mail. Open an attachment if any.

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E-mail compose window

A typical e-mail compose window has three basic elements;

1. Header; the e-mail header is made up of the following parts;
   - Addresses of the recipients; the e-mail recipients can be more than one.
   - Subject; presents the topic of the message.
   - Attachment; files attached from other programs such as Word processors and spreadsheets.
2. Message; this is the content of the e-mail. It is typically short and to the point. It may include text and graphics.
3. Signature; the signature provides additional information about the sender such as full name, address and telephone number.

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E-mail address format 1

- Just like the normal postal address, an e-mail address determines the destination of the e-mail sent. A typical e-mail address would look like this;
  takangaroo1031@gmail.com
1. takangaroo1031 is the user name and is usually coined by the user during e-mail account registration.
2. @ is the symbol for "at" which separates the user name from the rest of the address.
3. gmail.com is the name of the host computer in the network i.e. the computer on which the e-mail account is hosted.
4. The period "." is read as dot and is used to separate different parts of the e-mail address.
5. com identifies the type of organisation offering a particular service(s) and is called the domain, meaning it is a commercial institution.

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Other commonly used domains

| Domain	Type
.edu	Educational institution
.gov	Government institution
.org	Non-profit making organization
.mil	Military organization
.net	An institution or organization providing networking services
.ac	An academic institution

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Other types of domain

- Sometimes a two letter extension is added after the domain name to show the country where the site is located.

  e.g. ta19791031@yahoo.co.jp

  the domain .jp stands for Japan. Other domain names include .ke (Kenya), .uk (United Kingdom), .ug (Uganda), .tz (Tanzania), .au (Australia) etc.

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How to composing and sending an e-mail

- To compose an e-mail in either in Yahoo mail or Outlook Express;
  1. Click the "Compose" button.
  2. Type the recipient address or get it from the address book.
  3. Type in the subject of the message as shown in Figure left.
  4. Type in the message in the message box.
  5. Click the "Send" button.

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File Attachment

- E-mail software enables a person to attach other files like pictures, music, movies Clips etc. To an e-mail for sharing with others before sending. The source of attached files can be from the hard disk or other storage devices.

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How to attaching files into an e-mail

1. Click the "Attachment" button on the toolbar.
2. In the Dialog box that appears, select the file(s) to attach.
3. Click "Attach" button to attach the files.

NB; An attachment text box is automatically added below the subject.

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On-line meeting

■ It's possible to hold on-line meeting with people by sending mails to them e.g. On-line interviews may involve a person sending electronic mail composed of interview questions to a recipient who can read and answer back.

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Telephone messages

- Wireless Access Protocol (WAP) makes it possible to send e-mail to a mobile handset and a mobile message to e-mail account.

Contact Management

- Most mails programs allow the user to develop an address book which holds contact information like e-mail address of different people.

How to add a contact in Outlook express

1. From "Tools" menu.
2. Click "Address Book".
3. In the "Address Book" window, click the "New Contact" button.
4. Enter the contact details including the e-mail address (figure left).
5. Click the "Add" button to add the contact into the list, then close the address book.

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How to add a contact in Yahoo mail
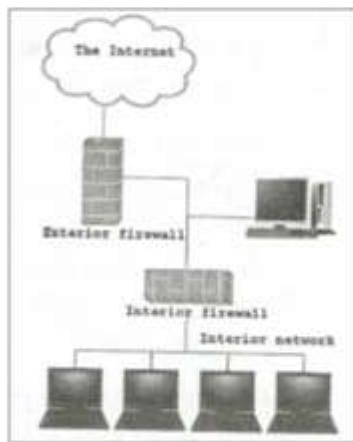
1. From "CONTACT" menu
2. Click the "Add New Contact"
3. Enter other contact details.
4. Click "SAVE" button.

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Accessing Information on Emerging Issues

Internet security

- Internet is a storehouse of information, presented in the form of text, documents, pictures, sound and even video. The Internet has a wide range of information concerning the issues. Emerging issues refers to things like HIV/Aids, drug Abuse, Moral issues etc.

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Review questions 1

1. Define the term Internet.
2. Give a brief account of how the Internet has evolved.
3. Explain three ways in which you can connect your computer or web-enabled handheld device to the Internet.
4. Using illustrations, discuss three types of transmission media used to connect to the Internet.
5. Discuss how Wi-Fi and GPRS wireless connectivities work.
6. Explain five uses of the Internet.
7. State three advantages and three disadvantages of the Internet.
8. State three advantages of using wireless transmission media to connect to the Internet.

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Answer of review questions 1-1

1. Global interconnection of computer networks.
2. Started as a research project in USA by ARPA. Today, Internet is one of the most popular information service.
3. Using GSM, GPRS service, Wi-Fi or Satellite.
4. The student to draw or use conceptual diagrams on telecommunication lines, satellite or cellular (wireless) media.
5. GPRS is a GSM packet switching services while Wi-Fi (wireless fidelity) is a long range radio connectivity standard for mobile devices used to connect to Internet at hot spots.
6. Some uses of Internet include;
   A) World wide web
   B) Electronic mail
   C) Instant messaging
   D) E-commerce, e-learning and Newsgroup.

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Answer of review questions 1-2

7. Advantages of Internet:
   A) Efficient communication
   B) Availability of information
   C) Cost saving
   D) Socialisation, etc.
   Disadvantages of Internet:
   A) Setup cost may be prohibitive.
   B) Security to data and information.
   C) Inequality in society
8. Allow mobility
   Ease of setup
   Not quite expensive to setup
   Do not take any physical space.

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Review questions 2

1. State three measures you can take to have a targeted search of Internet content.
2. Define the term "Internet blog" and list four types of blogs.
3. In what circumstances would you choose to view a document as HTML instead of downloading it?
4. Explain how you would open a document in its original application without downloading it.
5. Explain how you would send one e-mail to may recipients once.
6. Describe the three parts of an e-mail.
7. List three examples of e-mail client.
8. Differentiate between replying and forwarding and e-mail.
9. Explain how you would send an e-mail that includes photos.

Answer of review questions 2

1. Identify a search engine.
   Enter keywords.
   Use quotation marks to identify keywords.
2. Website that contains personal information.
3. When not sure of its integrity or source.
4. Right click then "Open target as…".
5. Mailing group list.
6. Header (address, subject, attachment)
   Message
   Signature

7. Email
   Yahoo! Mail
   Endora
   Microsoft Express.
8. Replying means sending back feedback to the sender while forward is mailing a received mail to a third party recipient.
9. Add file attachments the photos should be in a jpeg. or tif. format.

Review questions 3

1. Outline the procedure for creating an e-mail in Yahoo mail or Outlook express.

2. Explain how you add a contract into an address book.

Answer of review questions 3

1. Composing and sending e-mail.
   1. Click the compose button.
   2. Type the *recipient address* or get it from the address book.
   3. Type in the subject of the message.
   4. Type in the message in the message box.
   5. Click the Send button.

2. Outlook express:
   1. From "Tools" menu, click "Address Book".
   2. In the "Address Book" window, click the "New Contact" button.
   3. Enter the contact details including the e-mail address.
   4. Click the "Add" button to add the contact into the list, then close the address book.

   Yahoo mail:
   1. Click the e-mail address of the sender.
   2. Click "Add" to contacts button.
   3. Enter other contact details.

Revision questions 1

1. Define the term Internet.
2. Explain the term web page format.
3. Explain the following Internet address *http://www.google.com* in reference to the structure of a URL.
4. Define the term Internet telephony.
5. What is the *World Wide Web (www)*?
6. What is a browser?
7. Explain the process of loading a website.
8. Explain four uses of e-mail software.

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Answer of revision questions 1-1

1. It is a network of networks that covers nearly the whole world and enables transfer of messages, data and information across continents.
2. A hypertext page prepared to display content on the web.
3. http – hypertext transfer protocol.

   www – world wide web.

   Google – name of computer with web content.

   .com – commercial organisation.
4. Transmission of voice data over the Internet.

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Answer of revision questions 1-2

4. A virtual space on the Internet that allows web pages and sites to be accessed. Interlinked pages formatted in virtual language.
5. Software that allows viewing of web content.
6. Start the browser software like Internet Explorer. Type the URL address of the web page you wish to access in the address bar then press the Enter key to load the website.
7. Sending/receiving text and attachments.
   Sending fax.
   Keeping address book.
   Mobile mail to mobile devices.

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Revision question 2

1. What is file download? Explain the procedure.
2. Explain the meaning of the word *hyperlink.*
3. Give three steps that you would follow to search for information on the web.
4. What would you do if a website refused to load in the browser on the first attempt?
5. What is a search engine?
6. Explain the meaning of the term *Internet Service Provider* (ISP).
7. What three things apart from the computer are needed for one to be connected to the Internet?
8. What is a protocol? Write th3e following in full: *TCP/IP, HTML, HTTP* and *ftp.*

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Answer of revision questions 2-1

1. Downloading or saving files from remote hosts on the Internet on to your computer.
   - Procedure
     i. Right click the link to the file.
     ii. Select the "Save" target as command.
     iii. Select a folder and name for the file in the "Save as" dialog box then click "Save".
2. A text or a picture that is a link to another webpage on the Internet.
3. Check newsrooms for latest information on the topic then use a search engine to look for links to the information required.
4. Click the refresh button on toolbar.
5. A search engine is a special program that collects and stores links to information websites allowing user to search its database for them.

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Answer of revision questions 2-2

6. A company that offers Internet services to end users.
7. Modems, Internet software, Internet service provider, telecommunication lines, TCP/IP protocols.
8. Modem – term stands for modulator demodulator. A device that enables telecommunication use telephone lines.
9. Are special communication rules that govern sending and receiving of messages by computers on a network.
   - protocol (TCP).
   - Internet protocol (IP).
   - Hypertext markup language (HTML).
   - Hypertext transmission protocol (HTTP).
   - File transfer protocol (fip).

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Practical activity 1

1. If the computers in the laboratory are connected to the Internet check on the following.
   a. The TCP/IP address of one of the computer
   b. The DNS server address of your service provider.
2. Using a laptop or mobile phone that is configured with GPRS and a Bluetooth or Wi-Fi connectivity, establish an Internet connection.

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Practical activity 2

1. Launch Internet explorer and use it to visit one of the academic sites such as a high school, colleges or universities.
2. Download a PDF file from the academic site you have chosen.
3. Create and send an e-mail to a friend inviting him/her for a birthday party to be held on the coming Sunday. The mail should include a picture of a cake.
4. Using a search engine, find information on the historical development of the Internet. Copy and paste the material you get in a five page Microsoft Word document that has the following structure;
   1. Title page.
   2. Introduction.
   3. Historical development of the Internet.
   4. Future trends.
   5. Conclusion.
   Edit, format and save the document as **History.doc**

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Chapter 2
Data security and controls
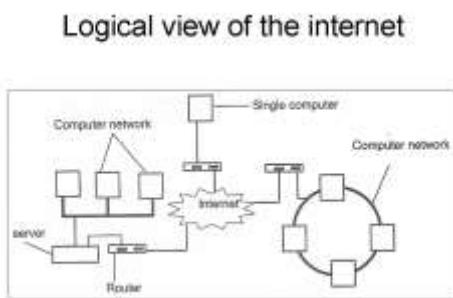
# Data and information security

- Protection of data and information against unauthorised access or modification.

- Denial of data and information to unauthorised users.

- Provision of data and information to authorised users.

Data security core principles

Logical view of the internet

- The three core principles of data security also referred to as information security are confidentiality, integrity and availability as shown in CIA Triad diagram figure left.

Data and Information Privacy

- Private data – refers to that or information that belongs to an individual and must not be accessed by or disclosed to any other person unless with direct permission from the owner.

- Confidential data – this is data or information held by a government or organisation about people. The data must be protected against unauthorised access or disclosure.

Security threats and control measures

- Viruses
- Unauthorised access
- Computer errors and accidental access
- Theft
- Computer crimes
- Fraud
- Sabotage
- Alteration

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Viruses

- A computer virus is a destructive program that attaches itself to other files and installs itself without permission on the computer when the files are opened for use.

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Types of Computer Viruses

- Boot Sector – they destroy the booting information on storage devices.
- File Virus – attach themselves to files.
- Hoax Virus – come as e-mail with an attractive subject and launches itself when e-mail is opened.
- Tronjans – they perform undesirable activities in the background without user knowledge.
- Worms – it sticks in the computer memory.
- Back doors – may be a Trojan or Worm that allows hidden access to a computer system.   79

Sources of viruses

- Contact with contaminated systems.

- Pirated software.

- Infected proprietary software.

- Freeware and shareware.

- Updates of software distributed via networks.

Virus symptoms

- Unfamiliar graphics.
- Programs taking long to load.
- Unusual error messages occurring more frequently.
- Less memory available than usual.
- Files/Programs disappearing mysteriously.
- Changes to disk volume IDs.
- Disk access seems excessive for simple task.

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Control measure against Virus

- Install the latest version of anti-virus software on the computers.

- Avoid foreign diskettes in the computer room.

- Avoid opening mail attachment before scanning them for virus.

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Unauthorised access

- Physical access to computer system should be restricted to ensure that no unauthorised person gets access to the system. Unauthorised access may take the following forms;
    - Eavesdropping – this is tapping into communication channels to get information.
    - Surveillance (monitoring) – this involves where a person may keep a profile of all computer activities done by another person or person. The gathered information is used for other illegal work.
    - Industrial Espionage – spying on your competitor to get information that you can use to counter or finish the competitor

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Control measure against unauthorised access

- Encrypt the data and information during transmission.

- Reinforce the weak access points like doors and windows with metallic grills and burglar alarms.

- Enforce network security measures.

- Use file passwords.

- Use of finger print identification.

- Keep computer room closed when nobody is using it.

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Computer errors and accidental access

- Errors and accidental access to data and information may be as a result of people experimenting with features they are not familiar with. Also people might make mistake by printing sensitive reports and unsuspecting give them to unauthorised person.

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Control Measures against computer errors and accidents

- Give various file access privileges and roles to the end users and technical staff in the organisation.

- Set up a comprehensive error recovery strategy in the organisation.

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Theft

- Theft plays a significant role in the loss or damage of data. Theft of data happens within an organisation with authorised personnel stealing data for one reason or another.

Control against Theft

- Employ guards to keep watch over data and information centres and backup.
- Burglary proofs the computer room.
- Reinforce weak access points like the windows, doors with metallic grills.
- Create backups in locations away from main computing centre.

Computer crimes

- Trespass – this is the act of gaining access or entering into a computer system without legal permission.
- Cracking – this refers to the use of guess work over and over again, by a person until he/she finally discovers a weakness in the security policies or codes of software.
- Hacking – this refers to intentionally breaking of codes and passwords to gain unauthorised entry to computer system data and information files.
- Tapping – in this crime, a person sends an intelligent program on a host computer that sends him information from the computer.
- Piracy – this refers to making illegal copies of copyrighted software, information or data.

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To eliminate Piracy

- Make software cheap, enough to increase affordability.

- Use licenses and certificates to identity originals.

- Set installation password to deter illegal installation of software.

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Fraud

- It refers to the use of computer to cheat other people with the intention of gaining money or information.

Sabotage

- This is illegal destruction of data and information with the aim of crippling service delivery or causing great loss to an organisation.

Alteration

- This is illegal changing of data and information without permission with the aim of gaining or misinforming the authorised users.

Information system failure

- Some of the causes of computerized information system failure include;
  - Hardware failure due improper use.
  - Unstable power supply as a result of brownout or blackout and vandalism.
  - Network breakdown.
  - Natural disaster.
  - Program failure.

Control measures against hardware failure

Uninterruptable power supply

- Protect computers against brownout or blackout which may cause physical damage or data loss by using surge protectors and UPS such as the one shown on figure left.

Detection and protection against computer crimes 1

- Audit Trial – this refers to careful study of an information system by experts in order to establish or find out all the weakness in the system that could lead to security threats and weak access points for crime-ster.
- Firewalls – a firewall is a device or software system that filters the data and information exchanged between different networks by enforcing the host network access control policy. Firewall monitor and control access to and from protected networks.

Detection and protection against computer crimes 2

- Log Files – they are special system files that keep a record (log) of events on the use of the computers and resources of the information system. The information system administrator can therefore easily track who accessed the system, when and what they did on the system.
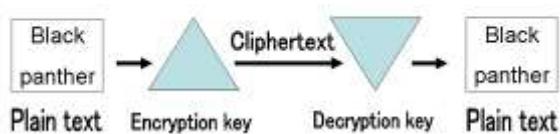
Detection and protection against computer crimes 3

- Data encryption – data transmitted over a network can be protected from unauthorised access by mixing it up into a form that only the sender and receiver can be able to understand by reconstructing the original message from the mix.

The process of encrypting and decrypting text

| Black panther | Cliphertext | Black panther |
| Plain text | Encryption key | Decryption key | Plain text |

Difficulty in detection and prevention of computer crimes

- The crime might be complex.

- It's not easy to find clear trail of evidence leading to the guilty party e.g. No finger prints.

- There are no witness.

- Few people in management and law enforcement know enough about computers to prevent the crime.

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Laws governing protection of information

- Data and information should be kept secure against loss or exposure.
- Data and information should not be kept longer than necessary.
- Data and information should be accurate and update.
- Data should not be transferred to other countries without the owner's permission.
- Data and information should be collected, used and kept for specified lawful purposes.

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Revision questions 1

1. Differentiate between private and confidential data.
2. Why is information a useful resource?
3. Explain any three threats to data and information.
4. Give two control measures you would take to avoid unauthorized access to data and information.
5. Explain the meaning of industrial espionage.
6. Differentiate between hacking and cracking with reference to computer crimes.
7. What reasons may lead to computer fraud?
8. Explain the term "information security".
9. Why would data and information on an externally linked network not be said to be secure even after burglar proofing a room?
10. How can piracy be prevented in regard to data and information?
11. Define a computer virus.

Answer of revision questions 1-1

1. Private data –belongs to individual and held by him/her.
   Confidential data – held by Government or organisation.
2. Because of its importance in transactions, sharer ability and high value attached to it.
3. Unauthorised exposure.
   Unauthorised access.
   Destruction by natural calamities.
   Fraudsters and computer crimestars.
4. Keep data and information in well secured and restricted places.
   Use passwords and access permission policies to control access to the data.
   Use firewall to enforce security policy.
   Audit trials to identify threats to data and information.
5. The stealing of data and information for commercial gain and to cripple competitors.

Answer of revision questions 1-2

6. Hacking – breaking security codes.

   Cracking – looking for weak access points in software in order to get access to data and information.
7. For economic gain, Ego, etc.
8. Is the ensuring of safety of data and information against threats.
9. Access can be made through the network.
10. Enforce copyright laws and other regulatory frame works.
11. A virus is a destructive program that installs itself on storage media causing improper functioning of the computer system.

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Revision questions 2

1. Give four general rules that must be observed to keep within the law when working with data and information.
2. Explain two types of computer viruses.
3. What is a program patch? Why are patches important?
4. Explain measures you would take to protect computers from virus attacks.
5. What is data alteration? Explain its effect on data.
6. How can you control errors related to data and information entry?
7. Data and information security has recently become very important. Explain why?
8. Explain eavesdropping with reference to computer crimes.
9. Why use copyright laws for software data and information necessary?

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Answer of revision questions 2-1

1. Data should not be used for gain unlawfully.
   The owner of data and information has a right to know what data is held by the person/organisation having it.
   Do not collect irrelevant and overly too much information for the purpose.
   Data should not be disclosed without the owner's permission.
2. Trojans.
   Boot sector viruses.
   Backdoors.
3. A software update that when incorporated in the current software makes it better. They enable better performance of computer system.
4. Install anti-virus software. Also restrict foreign storage media in the computer room.

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Answer of revision questions 2-2

5. Changing stored data without permission. This changes the information inferences from data.
6. Define roles to various categories of users.
7. Because information is one of the most valuable business resource for any organisation or Government.
8. Listening to a transmission line to gain a copy of the message being transmitted.
9. To deter illegal copying.

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Chapter 3
Word processor

Njabini Boys high school

Form two work

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Introduction

- Word processer is an application software that enable a user to create, save, edit, format and print text documents.

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Advantages of word processer

- It's faster create documents with word processor because of the availability of facilities like formatting and editing features.
- Word processor enables users to proof read and spell check documents on the screen before they are printed.
- Allows multiple copy printing unlike typewriters.
- Enables user to store documents for future editing if need be.
- Word processor has superior documents formatting features.

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Basic features of word processor

- Allow the user to create, save, open and format files.
- Have spell checker, thesaurus and grammar checker.
- Provide headers and footers, indexing.
- Have ability to create and import tables, text and graphics from other programs.
- Word wrap – a feature that automatically moves a word to a new line if it does not fit at the end of the current line.

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Purpose of word processor

■ Mostly word processor is used for typing letters, memos, essays, books, reports, minutes, circulars etc.

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Examples of word processor programs

■ Microsoft Word.
■ Word perfect.
■ Word star.
■ Amipro.
■ PC-Write
■ Etc.

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Factors to consider when choosing a W.P.

- Type of operating system.

- It's user friendliness.

- It's formatting and edition features.

NB; W.P. stands for Word Processor
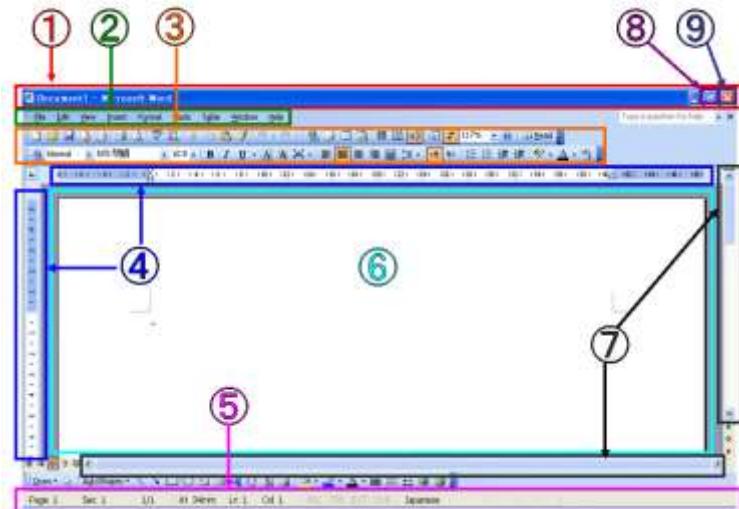
Starting Microsoft Word 2003

1. Click on the "Start" menu.
2. Point to "Programs/All Programs"
3. Point to "Microsoft office 2003"
4. Click "Microsoft Office Word 2003"

Parts of Microsoft Word 2003 window

Explain parts of MS-Word 2003 window 1

1. Title bar - it displays the title of currently running application.
2. Menu bar – provides a drop down list of commands that one can use to perform a task e.g. File, Edit, View.
3. Tool bar – contains buttons and boxes that allow you to perform tasks more quickly than using menu bar.
4. Rulers – used to set tab stops, index paragraphs, adjust column width and change page margins.
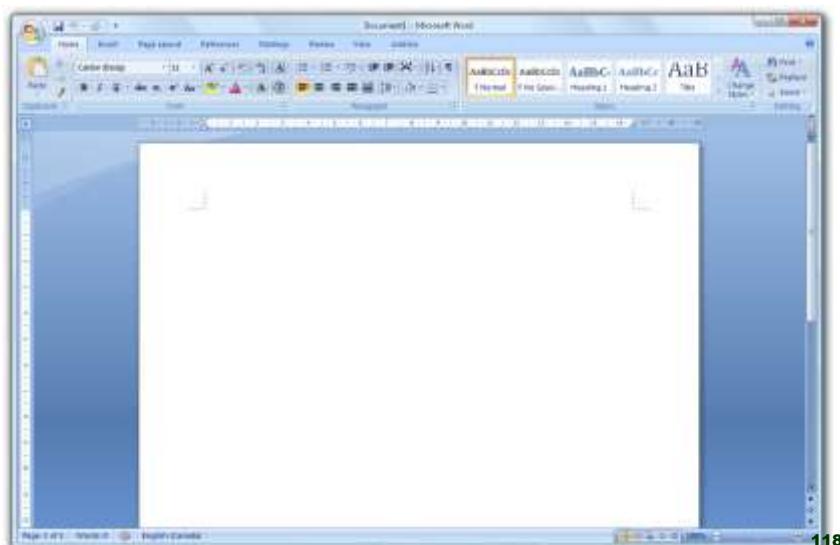
Explain parts of MS-Word 2003 window 2

5. Status bar – displays information about the program currently running.
6. Work area – this is the area where you can enter text or graphical objects.
7. Scroll bars – allows the user to "pan" the windows up and that doesn't fit in the window.
8. Minimise button – reduces a window to become a button on the task bars.
9. Maximise button/Restore – it stretches the window to cover the entire screen or restore it to it's original size respectively.

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MS-Word 2007 window

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Standard toolbar

- Standard toolbar contains commands used to carry out common tasks such as launching a new document window, opening a file, saving spelling and grammar checking etc. To see what the other commands are, just point to the icon on the toolbar and a text tip will be displayed showing the function of the icon.

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Steps of hiding and displaying the toolbars

1. On the "View" menu.

2. Point to "Toolbars"

3. Click the type of toolbar required to select it.

120

Steps of hiding and displaying the Rulers

1. Click the "View" menu.

2. Click "Ruler" (the ruler is displayed or hided on the screen).

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Creating a document

- This is the process of typing text in a clean page.

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Steps of "Creating a document"

1. On the "File" menu.
2. Click the "New" (New document task pane is displayed).
3. Click the "Blank document".
4. Click the "OK" button.

NB; shortcut key
    Ctrl + N

123

Creating a document based on a template

- You may want create a professional or elegant document such as resume, fax, letters, memos or reports based on existing Word templates.

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Steps of "Create a template document"

1. On the "File" menu.
2. Click the "New" (New document task pane is displayed)
3. In the "Templates" section, click the "On My Computer". (Template dialog box is displayed).
4. Select the tab that contain you want to use.
5. Select a type of template document.
6. Click the "OK" button. (Template document is displayed)
7. Create this document.

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Saving a document

- This is the process of making a document exist in your PC storage media, or on secondary storage.

NB; PC stands for Personal Computer.

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Saving commands

- Save – this command saves the document without changing the file name or the location.

- Save as – this command allows the user to save the document for the first time, change the file name or save on a different location.

- Saving with password – a password is a string of characters used to prevent from unauthorised users. A password is case sensitive always note the combinations of characters used.

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Steps of "Save" a document

1. On the "File" menu.

2. Click the "Save".

NB; shortcut key
    Ctrl + S

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Steps of "Save as" a document

1. On the "File" menu.

2. Click the "Save as" (Save as dialog box is displayed.)

3. Select location from save in.

4. Type file name in the box.

5. Click the "Save" button.

NB; shortcut key
    F12

Steps of "Save with password"

1. On the "File" menu
2. Click the "Save as"
3. Select the location
4. Type the file name.
5. Click the "Tools
6. Click the "Security options" (Security options dialog box is displayed).
7. Type the password when opening a document (you need retype password for confirm).
8. Type the password to protect against modification (you need retype password for confirm).
9. Click the "OK" button.
10. Click the "Save" button.

Closing the current document

1. On the "File" menu.

2. **Click "Close"**

NB; shortcut key
Ctrl + F4

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Opening or retrieving an existing document

- This refers to opening a document which has already been created and saved.

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Exiting from Word

- This refers to quitting the MS-Word program completely

Steps of "Exit from Word".

1. On the "File" menu.

2. Click the "Exit".

NB; shortcut key
    Alt + F4

Editing a document
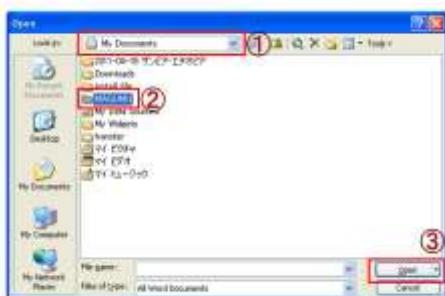
- Editing – refers to making necessary changes to an existing document.

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Steps of "Open" the document 1

1. On the "File" menu.
2. Click the "Open" (Open dialog box is displayed).
3. Select the location of the file from "Look in".
4. Click the name of the document you want to open.
5. Click the "Open" button.

NB; shortcut key
    Ctrl + O

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Steps of "Open" the document 2

- You can also open a file from a recently used file list on the "File" menu. Word keeps a list of recently used files on the "File" drop down menu.

If recently documents isn't displayed.

1. On the "Tool" menu.
2. Click the "Option" (Option dialog box is displayed).
3. Click the "General" tab.
4. Select the "Recently used file list check box.

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Selecting with the keyboard

- To select one word, move the insertion pointer to the beginning or end of the word then press "Shift+Ctrl+Right" or left arrow.
- To select one line, press "Shift+Up" or "Shift+Down" arrow key. Alternatively, move the insertion point to the end or beginning of the line then press "Shift+Home" or "End" keys respectively.
- To select an entire page, press "Shift+Page Down" or "Shift+Page Up".
- To select the entire document, press "Ctrl+A" or place the cursor at the beginning of the document, then press "Shift+Ctrl+End".

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Editing features of word processor 1

- Typing mode
  - Insert mode – in this mode when text is inserted between words or characters it pushes the existing text away without replacing it.
  - Typeover mode – in this mode when text is typed between words or characters the new text automatically replaces the existing text by deleting it. To switch between Typeover and insert mode you press insert key.

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Editing features of word processor 2

- Find and replace – to search for a particular word in document, the user uses the find feature which automatically locates the word. To replace a word, the user the replace option.

- Proof reading – this refers to checking whether the document has typographical or grammar errors.

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How to switch "Typing mode".

Insert mode

Type over mode

- Just type "Insert" key. This key is one of the Navigation and Editing keys. And the user can confirm current mode on the status bar.

141

Steps of "Find" function
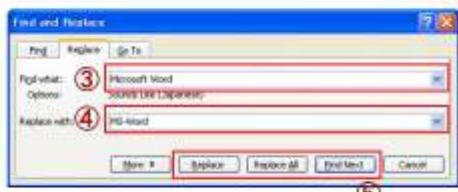
1. On the "Edit" menu.
2. Click the "Find" (Find and Replace dialog box is displayed)
3. Type the word or phrase to find in the "Find what" box.
4. Click the "Find Next" button.

NB; shortcut key
Ctrl + F

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Steps of "Replace" function
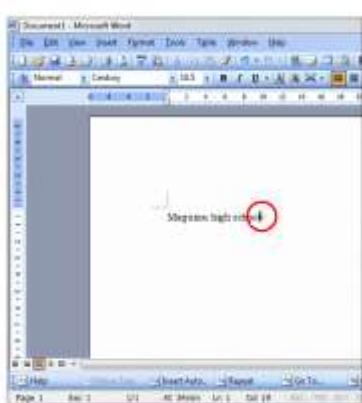
1. On the "Edit" menu
2. Click the "Replace" (F&R dialog box is displayed)
3. Type word or phrase to find in the "Find what" box.
4. Type word or phrase to replace in the "Replace with" dialog box.
5. Click the "Replace" or "Replace All" button.

NB; shortcut key
   Ctrl + H

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Deleting text 1
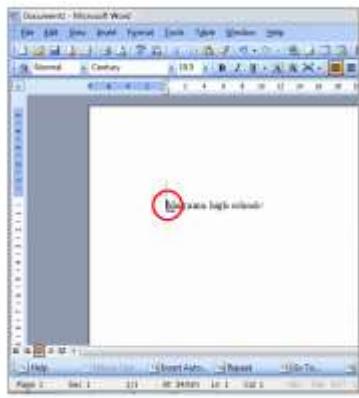
- To delete a character or a word from the right to the left:

1. Place the insertion pointer on the right of the word.
2. Press the "Backspace" key.

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Deleting text 2

- To delete a character to the right of the cursor position:
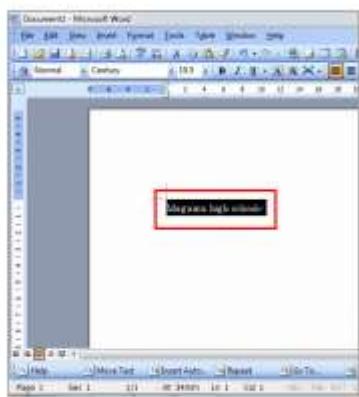
  1. Place the insertion pointer on the left of the word.
  2. Press the "Delete" key.

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Deleting text 3

- To delete a block of text:

  1. Highlight the text to be deleted.

  2. Press the "Delete/Del" key.

146

Proofreading tools 1

- Spelling and grammar checker – this is an in-built tool that helps the user to correct spelling errors and incorrect grammar structures.
- Thesaurus – it's a tool that helps the user's finds words or phrases with similar meaning or opposite meaning to the one selected.
- Autocomplete – this is a feature displays a word when the user types the first few characters of the word.
- Autocorrect – this feature automatically detects wrongly spelt or capaitalised words and replaces them.

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Proofreading tools 2

- Highlighting/Selecting – it's the process of choosing particular areas in the text in order to apply certain features.

- Copy and move text and object – copying means creating a duplicate of text or an object in a document.

- Undo and Redo – <u>undo</u> feature enables the user to cancel the most recent editing action while <u>redo</u> feature repeats the last action.

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Steps of "Spell and grammar" checker

1. On the "Format" menu.
2. Click the "Spell and grammar" (if the document has any misspells or grammars, S&G dialog box is displayed).
3. Use this dialog box.

NB; shortcut key
   F7

Parts of "Spell and grammar" dialog box 1
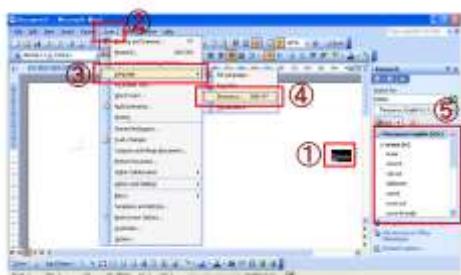
Parts of "Spell and grammar" dialog box 2

1. Change – to correct only the highlighted incorrect word.
2. Change All – to correct all the occurrences of the misspelled word.
3. Ignore – to retain the highlighted and continue.
4. Ignore All – to retain all the occurrences of the same word or phrase in the document from another language.
5. Add dictionary – to add the word into the custom dictionary.

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Step of using "Thesaurus" 1

1. Select a word or a phrase you want to research.
2. On the "Tools" menu
3. Point to "Language"
4. Click the "Thesaurus" (Research task pane is displayed).
5. Choose an alternative word or phrase you intend to use as replacement for the selected text.

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Steps of using "Thesaurus" 2

5. To replace a word or a phrase with an antonym, select the word or phrase enclosed in brackets
6. Click the drop down list.
7. Click the "Insert"

NB; shortcut key

Shift + F7

153
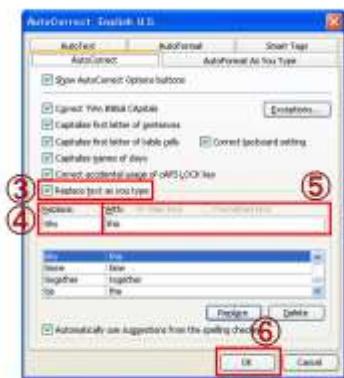
Steps of turn "Autocomplete" on/off

1. On the "Insert" menu
2. Point to "AutoText"
3. Click the "AutoText"
4. Select or clear the "Show AutoComplete tip for AutoText and dates" check box.
5. Type in text in the "Enter AutoText entries here".
6. Click the "Add" button
7. Click the "OK" button

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Steps of turn "Autocorrect" on/off

1. On the "Tools" menu
2. Click the "AutoCorrect Options"
3. Click the "Replace text as you type" check box.
4. Type the commonly misspelled word in the "Replace" box
5. Type the correct spelling for the word in the "With" box.
6. Click the "OK" button
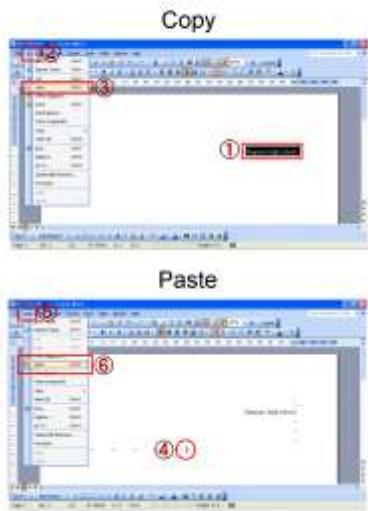
155

Steps of "Selecting" with mouse

1. To select a word, place the insertion pointer on the word then, double click it.
2. To select the entire line, position the mouse pointer on the left margin until it changes to an arrow, then click once.
3. To select a paragraph, place the pointer at the beginning or end of the paragraph. Notice that the pointer changes to I-beam. Now drag the I-beam over the text to be selected and release the mouse button at the end of the text you work on.

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Steps of "Copy and move" function

Copy

Paste

1. Highlight the text or object.
2. On the "Edit" menu.
3. Click the "Copy"
4. Position the insertion pointer where you want you copy text.
5. On the "Edit" menu,
6. Click the "Paste.
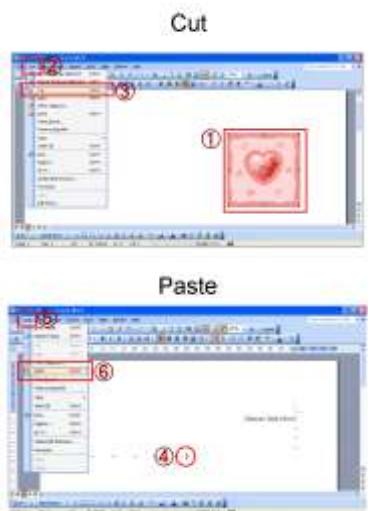
NB; shortcut key of "Copy"
    Ctrl + C
    shortcut key of "Paste"
    Ctrl + V   157

Steps of "Cut and move" function

Cut

Paste

1. Highlight the text or object.
2. On the "Edit" menu.
3. Click the "Cut"
4. Position the insertion pointer where you want you copy text.
5. On the "Edit" menu,
6. Click the "Paste.

NB; shortcut key of "Cut"
    Ctrl + Z
                            158

Steps of "Undo" and Redo"

1. On the "Edit" menu.

2. Click the "Undo" or "Redo"

NB; shortcut key of "Undo". Ctrl + Z

  shortcut key of "Redo". Ctrl + Y

159

Formatting document

- Formatting refers to applying various styles or features to enhance the documents appearance.

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Text formatting

- Refers to use of features such as bold, colour, underline, changing fonts (type, style) to improve text appearance.

Types of text formatting

- Bolding – this feature makes the text look thick and darker than the rest of the text in a document.
- Italic – this is to make the text slant forward.
- Underline – this is placing of any line style under text.
- Superscript – this describes text that is slightly higher than other text on a line.
- Subscript – this describes text that is slightly lower than other text on a line.
- Change case – this refers to switching between different cases provided by Microsoft Word.

Steps of "Bold" function.

1. Highlight the text to be bold.
2. On the "Format" menu.
3. Click the "Font" (Font dialog box is displayed)
4. Click the "Bold" of the "Font style"
5. Click the "OK" button

NB; shortcut key
     Ctrl + B

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Steps of "Italic" function

1. Highlight the text to be Italic.
2. On the "Format" menu.
3. Click the "Font" (Font dialog box is displayed)
4. Click the "Italic" of the "Font style"
5. Click the "OK" button

NB; shortcut key
     Ctrl + I

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Steps of "Underline" function.

1. Highlight the text to be draw the underline.
2. On the "Format" menu
3. Click the "Font" (Font dialog box is displayed)
4. In the "All text" section, select the underline type from drop down list of "Underline Style"
5. Click the "OK" button

NB; shortcut key for single underline. Ctrl + U

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Steps of "Superscript" function

1. Highlight the text to be superscript.
2. On the "Format" menu.
3. Click the "Font" (Font dialog box is displayed).
4. In the "Effects" section, click the check box of the "Superscript"
5. Click the "OK" button.

NB; shortcut key
    Ctrl key plus + key

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Steps of "Subscript" function

1. Highlight the text to be subscript.
2. On the "Format" menu.
3. Click the "Font" (Font dialog box is displayed).
4. In the "Effects" section, click the check box of the "Subscript"
5. Click the "OK" button.

NB; shortcut key
Ctrl and Shift keys plus = key

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Samples of text formatting

Bold	**Njabini Boys high school**
Italic	*Njabini Boys high school*
Underline (Single)	Njabini Boys high school
Superscript	Njabini Boys high ^{school}
Subscript	Njabini Boys high $_{school}$
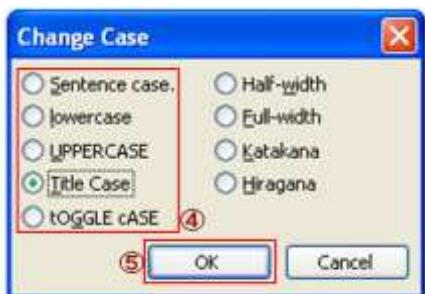
168

Change case

- When typing text, there are a number of cases the user may intend to apply in order to create contrast within the text. These are
  - ☐ Sentence case – all the first characters in a sentence are in uppercase (capitalised).
  - ☐ Lowercase – all characters appear in lowercase.
  - ☐ Uppercase – all characters appear in uppercase.
  - ☐ Title case – all the first characters of each word in a sentence appear in uppercase.
  - ☐ Toggle case – it changes upper cases to lowercases to and vice versa.

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Steps of setting a "Change Case"

1. Highlight the text.
2. On the "Format" menu.
3. Click the "Change case" (Change case dialog box is displayed).
4. Select the case type to be applied.
5. Click the "OK" button.

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Samples of "Change Case"

Sentence case	Njabini Boys high school
lower case	Njabini Boys high school
UPPER CASE	Njabini Boys HIGH SCHOOL
Title Case	Njabini Boys High School
tOGGLE cASE	Njabini Boys hIGH sCHOOL

171

Paragraph formatting 1

- Text alignment – this refers to how text is lined up on the page relative to the left, right or centre of the page.
- Indent – indentation refers to moving the text away from the margin.
- Line and character spacing – refers to the vertical distance between lines of text while character spacing on the other hand refers to the space between the characters.

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Paragraph formatting 2

- Tab – tabs are used to indent the first line of a paragraph or create columnar data.
- Bullets and Numbering – bullets and numbers are used to mark steps in a procedure or items in a list.
- Drop caps – it's a large dropped initial capital letter in a word or sentence.
- Section breaks – break is used to identify where a section, a columnar or a page ends and the beginning of next.

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Type of alignments

- Lift alignment – text is lined up evenly along left margin.
- Right alignment – text is lined up evenly along right margin.
- Centre alignment – text are centered unevenly between the left and right margin.
- Justification alignment – text is arranged evenly along left and right margin.

174

Steps of "Left alignments"

1. Highlight the paragraph to be left alignments.
2. On the "Format" menu.
3. Click the "Paragraph" (Paragraph dialog box is displayed)
4. In the "General" section, select the "Left" from the drop down list of "Alignment"
5. Click the "OK" button

NB; shortcut key
    Ctrl + L

Steps of "Right alignments"

1. Highlight the paragraph to be right alignments.
2. On the "Format" menu.
3. Click the "Paragraph" (Paragraph dialog box is displayed)
4. In the "General" section, select the "Right" from the drop down list of "Alignment"
5. Click the "OK" button

NB; shortcut key
    Ctrl + R

Steps of "Centre alignment"

1. Highlight the paragraph to be center alignment.
2. On the "Format" menu.
3. Click "Paragraph" (Paragraph dialog box is displayed)
4. In the "General" section, select the "Centered" from the drop down list of "Alignment"
5. Click the "OK" button

NB; shortcut key
> Ctrl + E

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Steps of "Justification alignment"

1. Highlight the paragraph to be justification alignment.
2. On the "Format" menu.
3. Click "Paragraph" (Paragraph dialog box is displayed)
4. In the "General" section, select the "Justified" from the drop down list of "Alignment"
5. Click the "OK" button

NB; shortcut key
> Ctrl + J

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Steps of "Distributed alignment"

1. Highlight the paragraph to be distributed alignment.
2. On the "Format" menu.
3. Click "Paragraph" (Paragraph dialog box is displayed)
4. In the "General" section, select the "Distributed" from the drop down list of "Alignment"
5. Click the "OK" button

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Samples of text alignment

Left alignment	Njabini Boys high school
Right alignment	Njabini Boys high school
Centre alignment	Njabini Boys high school
Justification alignment	Njabini Boys high school
Distributed alignment	Njabini Boys high school

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Types of indents

- First line indent – this is where the first line is indent while the other lines are left along the left margin.

- Hinging indent – the whole paragraph is indent except the first line.

- Full indent – the whole paragraph is indented.
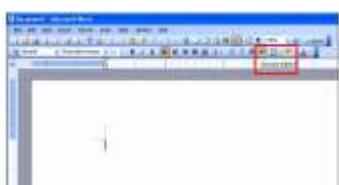
181

Steps of "Full indent"

Decrease indent

Increase indent
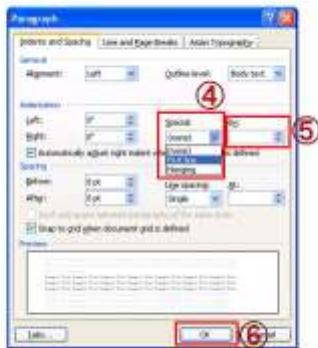
1. Highlight the paragraph to be indented or position the cursor any where in the paragraph.

2. Click the "Increase" or "Decrease Indent" button of the formatting toolbar.

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Steps of "First line Indent"

1. Highlight the paragraph to be indented.
2. On the "Format" menu
3. Click the "Paragraph" (Paragraph dialog box is displayed)
4. In the "Indentation" section, select the "First line" from the drop down list of "Special".
5. Select the how far from margin from "By"
6. Click the "OK" button.

183

Steps of "Hanging indent"

1. Highlight the paragraph to be indented.
2. On the "Format" menu
3. Click the "Paragraph" (Paragraph dialog box is displayed)
4. In the "Indentation" section select the "Hanging" from the drop down list of "Special"
5. Select the how far from margin from "By"
6. Click the "OK" button.

184

Samples of "Indent"

Name of indent	Samples
First line indent	
Hanging indent	
Full indent	

Steps of change "Line Spacing"
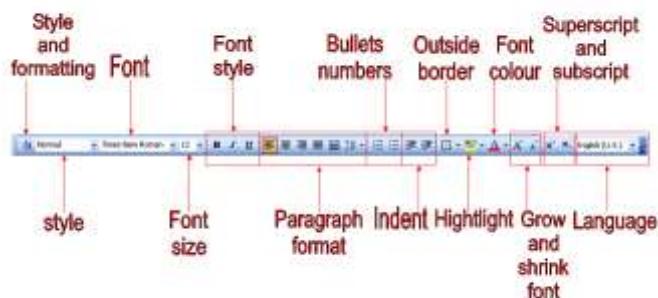
1. Highlight the text to be line spacing.
2. On the "Format" menu
3. Click the "Paragraph" (Paragraph dialog box is displayed)
4. In the "Spacing" section, select the spacing required from the drop down list of "Line Spacing"
5. Click the "OK" button

186

93

Examples of line spacing specifications

1. 1.5 line space.

2. Single line space.

3. Double line space.

Formatting toolbar

■ As mentioned earlier, the formatting toolbar lets the user easily format text by clicking the required format button as shown in above figure
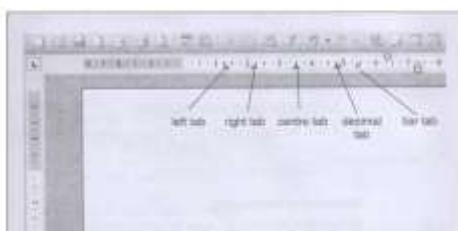
Steps of setting "Tabs"

1. On the "Format" menu
2. Click the "Tabs" (Tabs dialog box is displayed)
3. Enter a new value for tab stop in the box of "Tab stop position"
4. Select the type of tab from "Alignment"
5. Select the type of leader.
6. Click the "Set" button
7. Click the "OK" button

189

Setting tabs using the ruler

1. Click on the "Tab" button to choose the required tab type. Notice that the tab type keeps on changing as you click the tab button.
2. Set the tab stop by clicking where you want it to be on the ruler.
3. Drag the tab stop.

190

Types of "Tab"

Button	Name	Purpose
	Left tab	Text is aligned to the left
	Centre tab	Text is centred
	Bar tab	Inserts a vertical line at tab stop and align text to the right of the line
	Decimal tab	Text is aligned at decimal character
	Right tab	Text is aligned to the right

191

Steps of "Bullets and Numbering"

1. Highlight the text
2. On the "Format" menu
3. Click the "Bullets and Numbering" Bullets and Numbering dialog box displayed)
4. Click the "Bulleted" ,"Numbered" or Outline Numbered" tab.
5. Select the type of bullets or numbering.
6. Click the "OK" button. **192**

Steps of "Drop cap" function

1. Highlight the first character in the sentence.
2. On the "Format" menu
3. Click the "Drop Cap" (Drop Cap dialog box is displayed)
4. In the "Position" section, select a "Dropped" or "In Margin"
5. In the "Options" section, select the font type from drop down list of "Font"
6. Click the "OK" button

193

Steps of setting "Section breaks"

1. Position the text cursor in the document where the break is to be inserted.
2. On the "Insert" menu
3. Click the "Break" (Break dialog box is displayed)
4. Click the "OK" button

194

Page formatting 1

1. Page layout – this feature lets the user specify how text will be placed on the page from the margins.
2. Page setup – the option lets the user specify the size of the margins, paper size, paper source and layout.
   i. Margins – these are the blank space around the edges of the page.
   ii. Orientations – this refers to the positioning of the page in relation to text.
      a. Landscape orientation – in this text graphics are printed with longest side of the page placed horizontally
      b. Portrait orientation – in this text and graphics are printed with the longest side vertically upright.

195

Page formatting 2

iv. Page breaks – this identifies the end of one page and the beginning of the text.
v. Columns – this refers to dividing of text into a number of columns.
vi. Headers and footers – headers refers to text that is placed at the top of every page of a document. Footers refers to text that is placed at the bottom of every page.
vii. Page numbering – refers to applying page numbers on every page of the document.

196

Steps of "Page layout"

1. On the "File" menu.

2. Click the "Page Setup" (Page Setup dialog box is displayed).

3. Click the "Layout" tab.

4. Set layout as desired.

5. Click the "OK" button. 97

Steps of setting "Margins"

1. On the "File" menu
2. Click the "Page Setup"
3. Click the Margin tab.
4. In the "Margins" section, enter the values for the left, right, top and bottom margins in the respective boxes.
5. Click the "OK" button

198

Steps of setting a "Orientation"
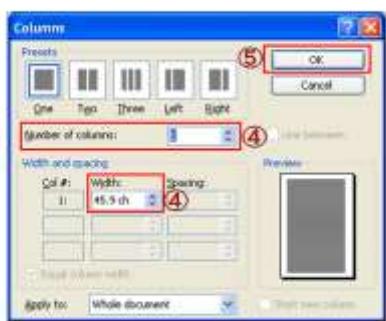
1. On the "File" menu
2. Click the "Page setup" (Page Setup dialog box is displayed)
3. Click the Margin tab.
4. In the "Orientation" section, select a "Portrait" or "Landscape".
5. Click the "OK" button

199

Steps of setting a "Paper Size"

1. On the "File" menu
2. Click the "Page Setup" (Page Setup dialog box is displayed)
3. Click the "Paper" tab
4. In the Paper size" section, select the size from drop down list.
5. Click the "OK" button

200

Steps of "Columns" function
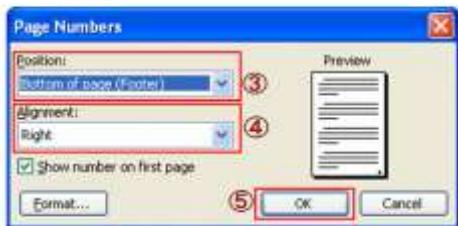
1. Highlight the paragraph.
2. On the "Format" menu
3. Click the "Columns. (Columns dialog box is displayed)
4. Enter the number of columns and set the column width.
5. Click the "OK" button.

201

Steps of "Headers and Footers"

1. On the "View" menu
2. Click the "Headers and Footers" (Headers and Footers tool bar is displayed)
3. Enter text or object in the header area.
4. Switch to footer
5. Enter text or object in the footer area
6. Click the "Close" button.

202

Steps of "Page numbering"

1. On the "Insert" menu
2. Click the "Page Numbers" (Page Numbers dialog box is displayed)
3. Select the position from drop down list of "Position"
4. Select the alignment from drop down list of "Alignment"
5. Click the "OK" button
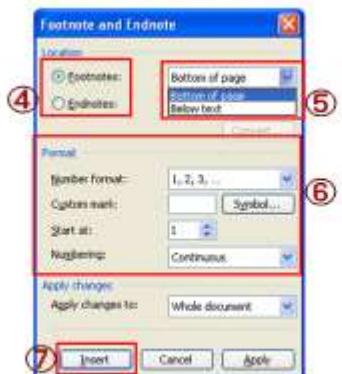
203

Inserting footnotes and endnotes

- Footnotes and endnotes are used in large documents to explain, comment on, or provide references for text in a document. Footnotes appear at the bottom of the page while endnotes appear at the end of a section or the document.

204

Steps of "Footnote and endnote"

1. On the "Insert" menu.
2. Point to "Reference"
3. Click the "Footnote" (Footnote and endnote dialog box is displayed).
4. In the location section, click "Footnotes" or "Endnotes".
5. Select the location of footnote or endnote from down arrow list.
6. In the format section, select the types of "Number format", "Start at" or "Numbering" .
7. Click the "Insert".

205

Using styles list

1. Highlight the text you want to use to create a style.
2. Apply various formats to the text e.g. bold, italic, underline etc.
3. Click the Styles box in the formatting toolbar and type a name for the style.
4. Press "Enter" key to apply the style name.

NB; you can apply an existing style.

206

Generating a table of contents and index

1. Turn to the page you want to insert the table of contents.
2. On the "Insert" menu.
3. Point to "Reference"
4. Click "Index and Tables" (Index and Tables dialog box is displayed).
5. Click the "Table of Contents" tab.
6. Set the table of contents.
7. Click "OK" button.
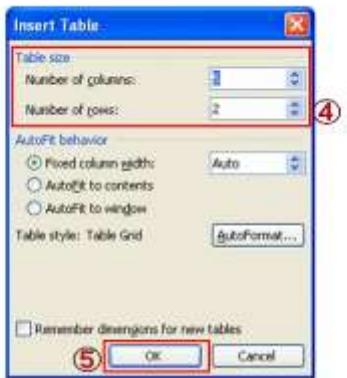
207

Creating tables

- A table is a feature in MS-Word made of rows and columns that is used to organise and enhance display and information.

208

Steps of "Table" function

1. On the "Table" menu
2. Point to "Insert"
3. Click the "Table" (Insert table dialog box is displayed)
4. In the "Table size" section, select the number of columns and rows from arrow key.
5. Click the "OK" button

Steps of "create a table using the drawing tool"

Tables and Borders toolbar

1. On the "Table" menu.
2. Click "Draw table" (the mouse pointer changes to a pencil symbol and Tables and Borders toolbar is displayed).
3. Drag the pointer to draw the outline of the table.
4. Fill in the table with rows and columns by dragging the pointer as you would draw using an ordinary pencil.

Uses/functions of tables

1. Used to organise and present information.

2. Used to align numbers for calculation purposes.

3. Can be used to create different forms such as invoice, calendar etc.

211
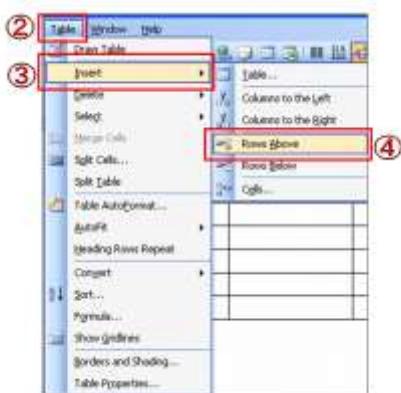
Editing a table

1. Inserting rows/columns.
2. Deleting rows/columns.
3. Merging cells – refer to combining of more than one cell in a table.
4. Splitting cells – refers to subdividing a cell into more cells.

212

Steps of insert "rows" in a table

1. Place the cursor where you want to insert a row.

2. On the "Table" menu.

3. Point to "Insert".

4. Click the "Row above" or "Row below"

213

Steps of insert "Columns" in a table

1. Place the cursor where you want to insert a column.

2. On the "Table" menu.

3. Point to "Insert".

4. Click the "Column to the left" or "Column to the right".

214
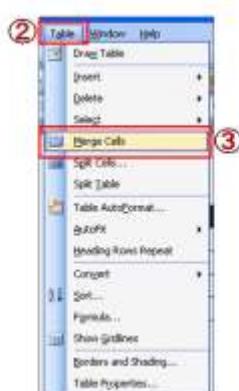
Steps of "delete rows, column or cells"

1. Select the rows, columns or cells to be deleted.

2. On the "Table" menu.

3. Point to "Delete".

4. Click "Columns", "Rows" or "Cells".

215
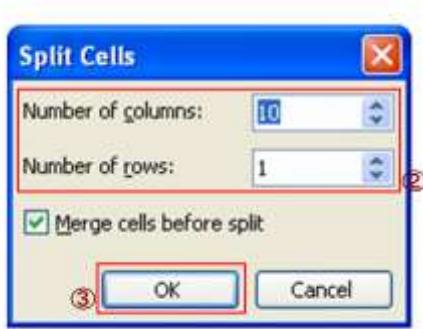
Steps of "Merging cells" in a table

1. Select cells to be merged.

2. On the "Table" menu.

3. Click the "Marge cells.

216

Steps of "Splitting cells" in a table

1. Select sells to be split
2. On the "Table" menu
3. Click the "Split cells" (Split Cells dialog box is displayed)
4. Select number of columns and rows from arrow key
5. Click the "OK" button

217

Formatting a table

- MS-Word provides facilities that let user format table border styles and shading.

218

Steps of "Formatting table" function

1. On the "Table" menu
2. Click the "Table AutoFormat" (Table AutoFormat dialog box is displayed)
3. Select the type of category from drop down list of "Category"
4. Select the table style from drop down list of "Table style"
5. Click the "Apply" button

219

Table conversions

■ This feature allows the user to convert table to the text and text to table.

220
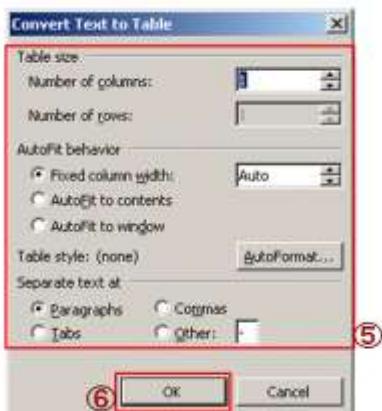
Steps of "Convert a table to text"

1. Select the entire table or row and columns you want to convert to text
2. On the "Table" menu
3. Point to "Convert"
4. Click the "Table to Text" (Convert Table To Text dialog box is displayed)
5. Enter or select the character to be used as a separator
6. Click the "OK" button

221

Steps of "Convert text to table"

1. Highlighting text you want to convert to table.
2. On the "Table" menu
3. Point to "Convert"
4. Click the "Text to table" (Convert Table To Text dialog box is displayed)
5. Enter or select the character to be used as a separator
6. Click the OK button

222

111
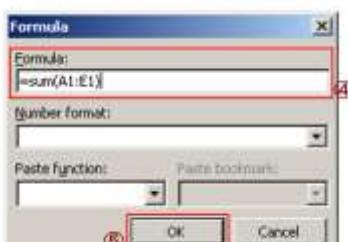
Performing arithmetic calculation in a table

- It's possible to perform mathematics calculations such as sum, products etc, if a table has numeric figures. To calculate numerical values in a table, we use cell references. A cell is a cross-section of row and column. Columns are represented by letters A, B, C, …. while rows are represented by 1, 2, 3 …. as shown in table below figure.

A1	B1	C1	D1	E1	F1	G1	H1	I1	J1
A2	B2	C2	D2	E2	F2	G2	H2	I2	J2
A3	B3	C3	D3	E3	F3	G3	H3	I3	J3
A4	B4	C4	D4	E4	F4	G4	H4	I4	J4
A5	B5	C5	D5	E5	F5	G5	H5	I5	J5

223

Steps of use "Calculation" functions

Sample of "Calculation" function

SUBJECT	SCORE
Mathematics	60
English	90
Geography	79
Religious education	68
French	90
TOTAL	387

1. Click in the cell the result to be displayed
2. Click the "Table" menu
3. Click the "Formula" (Formula dialog box is displayed)
4. Type a formula e.g. =SUM(A1:E1) in the box of "Formula"
5. Click the "OK" button

224

Sorting text

- In MS-Word you can sort a list of text, numbers and dates in ascending or descending order.

Steps of "Sorting text"

1. Highlight the text list or table you want to sort.
2. On the "Table" menu.
3. Click the "Sort" (Sort Text dialog box is displayed).
4. In the "Sort by" section, select the type of data from down arrow list i.e. "Text", "Number" or "Data".
5. Select "Ascending" or "Descending".
6. Click the "OK" button. [226]
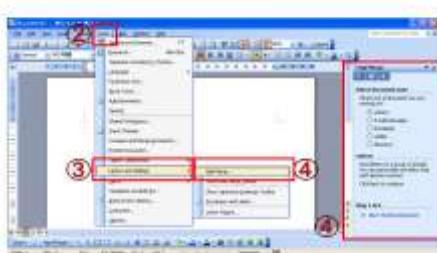
Mail merge documents

- Mail merge is the process of generating personalised letters or documents by combining a main document e.g. a letter with an existing data source such as the contact book.

227

Steps of setting a "Mail Merge" 1

1. Open or create a main document such as form letter. Main document contains the information you want to distribute.
2. On the "Tool" menu.
3. Point to "Letters and Mailings,
4. Click the Mail Merge. (Mail Merge task pane is displayed). The pane presents the user with a step by step wizard that guides takes you through the process.

228

Steps of setting a "Mail Merge" 2

Select document type

Select starting document

5. Select document type. In this case select the "Letters"
6. Click the "Next" arrow at the bottom of the task pane.
7. Select starting document. In this case select the "Use the current document".
8. Click the "Next" arrow.
9. Select recipients. In this case select the (Type a new list).
10. Click the "Next" arrow (New Address List dialog box is displayed).

229

Steps of setting a "Mail merge" 3

New Address List dialog box
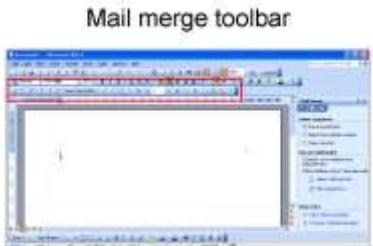
Customize Address List dialog box

11. Click the "Customize" button (Customize Address List dialog box is displayed)
12. Customize address list (add, remove or rename fields).
13. After you finish to customize, click the "OK" button (Customize Address List dialog box is closed).
14. Click the "Close" button (Save Address List dialog box is displayed).
15. Save the data source. **230**

Steps of setting a "Mail merge" 4

Mail merge toolbar

Write your letter

16. After you save the data source, "Mail Merge Recipients" dialog box is displayed. Click the "OK" button of this dialog box.

17. A Mail Merge toolbar is added onto the data source. Move the mouse pointer to get the tool tip for each button as shown left above figure.

18. Edit data source to type recipients data.

19. Click the "Next" arrow.

20. Click the "More items" (Insert Merge Field dialog box is displayed).

231

Steps of setting a "Mail Merge" 5

Insert Merge Field dialog box

21. Insert each field as desired.

22. After you finish to insert each field, click the "Close" button.

23. Click the "Next" arrow two times.

You are now ready to merge.

232

Preview merged documents

Print button on the merge toolbar

Merge to Printer dialog box

- Before you print click the "Preview" button in order to be sure that everything is in the right place. To send a merged document to a printer, click the "Print" button on the mail merge toolbar. A dialog box similar left figure is displayed.

233
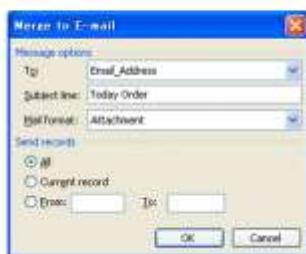
Send merged documents via e-mail

Merge button on the merge toolbar

Merge to E-mail dialog box

- Click the "Merge" button on the Mail Merge toolbar to see dialog box of left figure. Select "E-mail" or "Fax" in the merge to box. Click the "Setup" button to specify the e-mail addresses or faxing number then click the merge button. The internet connection wizard starts and if your computer is properly configured, the mail merged document will be sent.

234

Files in mail merge

1. The primary file (Main document) – this file contains data that will appear in all documents.
2. Data source (secondary file) – this file contains variable information e.g. names, address, telephone etc.
3. Merged file – once you finish inserting merge fields from the data source in the main document. You can merge.

235
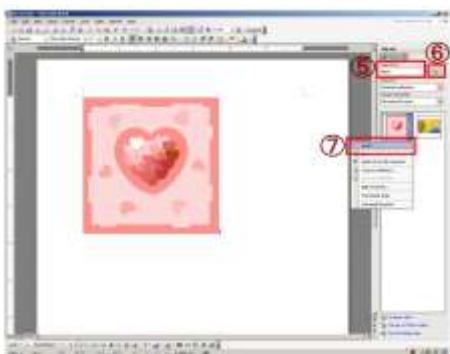
Inserting graphics

- Inserting graphics – refers top non-text image generated by a computer. Graphics can be photographs, drawings, pictures, charts and graphs. In MS-Word graphical objects are inserted from (source). Clip gallery, scanner, drawing tools, charts, from another file.

236

Steps of "Insert a graphics from clip art gallery"


1. Position the insertion pointer where you want your object to be inserted.
2. On the "Insert" menu
3. Point to "Picture"
4. Click the "Clip Art" (Clip Art task pane is displayed)
5. Type the category name in the "Search for" box
6. Click the "Go" button (Some graphics are displayed)
7. Select a graphics and click the "Insert" of drop down menu.

237

Steps of "Insert an image from a scanner"

Example of dialog box of scanner introductions

1. Position the insertion pointer where you want your picture to appear
2. On the "Insert" menu
3. Point to "Picture"
4. Click the "From Scanner or Camera"
5. To scan, follows the instructions that come with your scanner
6. When the image appears on the screen you can edit format it as required, the same way you would with a clipart.

238

119

Steps of "Inserting a picture from another file.
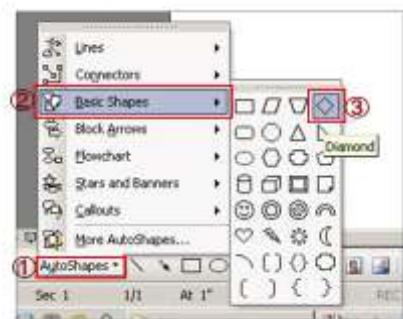
1. Position the insertion pointer where you want your picture placed.
2. On "Insert" menu.
3. Point to "Picture".
4. Click "From File" (Insert Picture dialog box is displayed).
5. Locate the file that contain the image you want to insert e.g. My Picture.
6. Select the object you want to insert.
7. Click the "Insert" button.

239

Steps of "Insert graphics from Drawing Tools"

1. On the "View" menu.
2. Point to "Toolbars".
3. Click the "Drawing" (Drawing toolbar is displayed).
4. Draw a line, a circle, an arrow or a rectangle using this toolbar

240
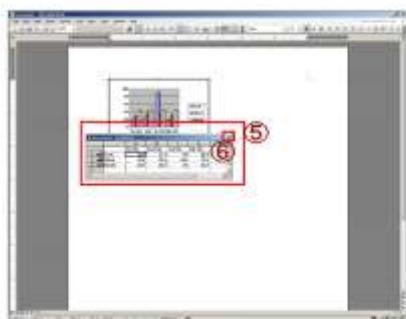
Steps of "Insert graphics from Autoshapes"

1. Click the "Autoshapes" button on the drawing toolbar (drop down menu is displayed).
2. Point to category required.
3. Select a type of object.
4. Place the pointer where you want to draw that shape and drag to the required size.
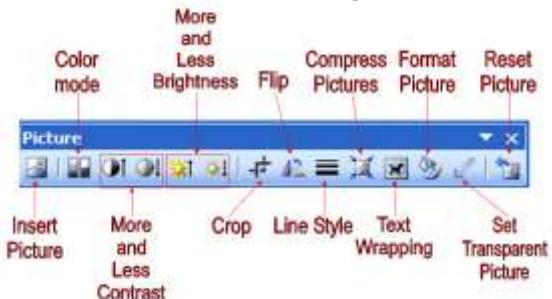
241

Steps of "Insert a chart"

1. Position the insertion pointer where you want your object to be inserted.
2. On the "Insert" menu
3. Point to "Picture"
4. Click the "Chart" (Datasheet is displayed)
5. Edit the "Datasheet"
6. Click the "X" button 242
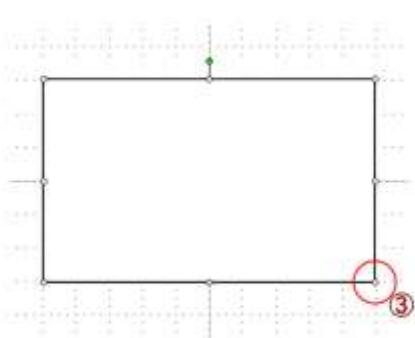
To format or edit a picture

- MS-Word provides the user with a picture editing toolbar that lets you adjust the brightness, contrast, change it to black and white or grayscale and crop the image. Cropping refers to hiding the unwanted details so that they do not come out when printing. To display toolbar, click on View menu, point to toolbars then select Picture. The picture toolbar has buttons that enable a person to format a picture as shown in above figure. **243**

Steps of "resize or move a drawing"

1. Click anywhere inside it, the place holder appear.
2. To move it, hold down the mouse button and drag.
3. To resize it, place the pointer at one of the place holders and drag.

244

Steps of "fill the object with colour"

1. Double click the object (Format AutoShape dialog box is displayed).
2. Select the "Colors and Lines" tab.
3. In the Fill section, select the colour you want to fill from drop down list of Color.
4. Click the "OK" button.

245

Steps of "fill effects"

1. Double click the object (Format AutoShape dialog box is displayed).
2. Select the "Colors and Lines" tab.
3. In the Fill section, click the "Fill Effect" from drop down list of Color (Fill Effect dialog box is displayed).
4. Select the appropriate fill effect.
5. Click "OK" button of Fill Effect dialog box.
6. Click "OK" button of Format AutoShape dialog box..

246
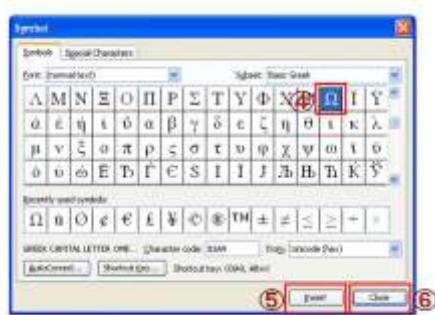
Inserting symbol

- A symbol is a special character that is not included on the standard keyboard. For example, Ø and ù are symbols that are not available on the standard keyboard.

Steps of insert a "Symbol"

1. Move the text cursor to the position where the new symbol will be inserted.
2. On the "Insert" menu.
3. Click the "Symbol" (Symbol dialog box is displayed).
4. Select a symbol you want to insert from list.
5. Click the "Insert" button.
6. Click the "Close" button.
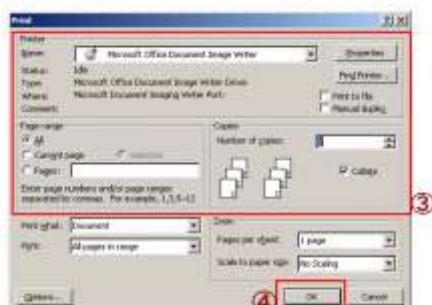
Printing

- The choice of printer depends on the quality of hardcopy desired. Before printing it's important that you preview your document. To confirm that no details are outside the printable area. To ensure that the document layout is okay.

Steps of "Print" function

1. On the "File" menu
2. Click the "Print" (Print dialog box is displayed)
3. Select printer, page range and number of copies.
4. Click the "OK" button

NB; shortcut key
    Ctrl + P

Review questions 1

1. What is a word processor?
2. State the purpose of word processor.
3. Name four functions performed by a word processor.
4. What is a document draft?
5. State four advantages and two disadvantages of using a word processor over the typewriter.
6. What is document formatting?
7. Explain the difference between *type over* and *insert mode* in word processing.
8. Define the term word wrap.

251

Answer of review questions 1-1

1. A computer program that enables a person to create, save, retrieve, edit, format and print text based documents.
2. Writing letters, projects, reports, essays and books etc.
3. Creating, printing, saving, editing, formatting documents.
4. One that is the initial copy for proofreading.
5. Advantages:
   A) A document can be stored for further use.
   B) Typing is easier and efficient.
   C) Word processors have superior document formatting features.
   D) It is possible to print multiple copies at once.
   Disadvantages:
   A) Computers are more expensive.
   B) Computers use electricity hence not appropriate where there is no electric power.

252

Answer of review questions 1-2

6. Making a document attractive by bolding, italicising, bordering, colouring, etc.
7. Type over – deletes current text at cursor position and inserts new text.
   Insert mode – pushes old text away as new text is inserted at cursor position.
8. Automatically moving a word to the beginning of a new line if it cannot fit at the end of the previous line without pressing outer key.

253

Review questions 2

1. State two examples of word processing programs.
2. What is a toolbar?
3. Explain how you can protect a document from unauthorised opening or altering.
4. What is meant by the terms *creating* and *editing* a document?
5. How can you save a document to a different word processor format?
6. Define the tem *scrolling.*
7. Explain the importance of the status bar.

254

Answer of review questions 2

1. Microsoft Word, Wordstar, Lotus Wordpro, Wordperfect.
2. A group of shortcut command icons arranged on a single graphical structure.
3. Use passwords to prevent opening or editing.
4. Creating – typing text in a new document screen. Editing – making changes to an already existing document.
5. Click file then Save as command. In the save as dialog box, select a format type in the File of type box. Click Save button to save.
6. Moving of on screen pages up, down, left and right.
7. Help the user to interact with the application because it displays the processing status of the application.

255

Review questions 3-1

1. Explain the meaning of the term *blocking text?*
2. What is the difference between copying and moving text?
3. When is the find and replace command used?
4. What is a wildcard? How can it be used to search for a word that starts with the letter "O" in a document.
5. What is the difference between just searching for a particular word in a document and searching for a word that is whole?
6. Explain the importance of proofreading a document.
7. Give two methods of proofreading a prepared document.
8. Give the two types of dictionaries that are used by a spell checker program. Which one is likely to have non-English words and why?

256

Review questions 3-2

9. Name any five parts of the Microsoft Word application window.
10. Give any five *document formatting.*
11. Give any five document formatting feature.
12. What is a thesaurus?
13. Distinguish between the *autocomplete* and the *autocorrect* feature in word processing.
14. Hassan has a problem when typing; every time he wishes to type the word Good, he mistakenly types God. What can he do to continue typing without worrying about having to go back to correct the same word over and over again?
15. Explain the use of *undo* and *redo* commands.

257

Answer of review questions 3-1

1. Selecting several lines of text in order to work with them as a whole.
2. Copying – making a duplicate copy of text. Moving – relocating text from one place in a document to another.
3. To search for words that you want substituted by others.
4. A special character e.g. * or? Used to represent a set of words that have some similar characteristics. Type 0 followed by asterisk (*).
5. Searching for a word will find the word even when it is part of other words e.g. searching for spell will also find Spelling and Spellchecker. However, if you search for a whole word, only the whole independent text will be found, e.g. only Spell and no other will be found.
6. Eliminate mistakes to improve a document readability.
7. Spelling and grammar checker, Thesaurus, and Autocomplete/Autotext/autocorrect.

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Answer of review questions 3-2

8. Standard dictionary and custom dictionary.
   custom dictionary – words can be added.
9. Title bar, Menu bar, Editing screen, Rulers, Toolbars and status bar.
10. Enhancing a document's appearance by bolding, italicising, etc.
11. Bolding, Font colouring, Text alignment, Font type, Setting tabs, Underlining, Italicising and Font size.
12. Thesaurus provides synonyms or words that have same meaning as the one selected.
13. *Autocomplete* – helps a person to type quickly by completing a word that has already started to be typed by the user automatically. *Autocorrect* – automatically replaces mistyped words with the correct ones as set by the use.
14. Set the autocorrect feature to automatically detect and replace the word God with Good.
15. *Undo* – reverses the latest action. *Redo* – does the undone action.

259

Review questions 4

1. Give at least four examples of fonts available in Microsoft Word.
2. Outline the procedure for inserting:
3. Page numbers;
   A) Footnotes and endnotes;
   B) Headers and footers;
   C) What is a tab? Why are tab stops important in a document?
4. Explain the importance of drop cap in a document.
5. What is line spacing? Give any two line spacing specifications.
6. Give and explain four text alignment features.

260

Answer of review questions 4

1. Times New Roman, Arial, Bookman Old Style, Comic Sans MS, etc.
2. A). Click Insert menu, Page numbers.
   B). Click Insert menu, Reference.
   C). Click View menu, Header and Footer.
3. A tab spacing is a short distance moved by the text cursor when the tab key on the keyboard is pressed. It is used to align text on the page.
4. Drop cap emphasises a particular starting word in a paragraph.
5. The distance between two text lines in a document. Examples include single space, double space, etc.
6. Left alignment, Center alignment, Right alignment and Justified.

261

Review questions 5

1. Differentiate between drawing and inserting a table in a document.
2. Define the term cell in reference to tables.
3. Give a reason why in may be necessary to merge cells in a table.
4. Define the term sorting.
5. Explain how you can convert some typed text into a table using Microsoft Word.
6. What would happen to the cursor in a table when the following actions.
   A) Pressing the tab key.
   B) Pressing the shift+tab key.
   C) Pressing the enter key.
7. Define the term function as used in table calculations.
8. Define each of the following:
   A) A form letter.
   B) A data source.
   C) Mail merge.
9. List four ways of merging a document with its data source

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Answer of review questions 5

1. Drawing – use the pen tool to draw the table. Inserting table – use the Table menu-Insert-Table command.
2. Cell – section between a row and a column.
3. To create larger cells in a table without increasing the height or width of existing cells.
4. Arranging text in ascending or descending order.
5. Highlight the text then click Table-Convert text to table.
6. A). Moves text cursor one column to the right in the same row.
   B). Moves text cursor one column to the left in the same row.
   C). Increases cell height.
7. Mathematical formula that accomplish calculations in a table.
8. A). Common letter (main document) that is to be personalised.
   B). A file of data records of the people that will receive the form letter.
   C). Combining the data source with the form letter or main document.
9. Merge to fax, Merge to printer, Merge to e-mail and Merge to new document.

263

Revision questions

1. Define the term graphic and give one example.
2. Explain how to achieve the following
   A) To move a graphic from one place on the page to another.
   B) To change the brightness of a graphic.
3. List three sources of graphics that can be used in Microsoft Word.
4. What is an autoshape?
5. How can you do the following
   A) Change the thickness of an autoshape outline;
   B) Fill an autoshape with colour;
   C) Enter text in an autoshape.
6. What is the difference between object linking and embedding?
7. Describe how you would increase the size of a clip art that is embedded in a document.
8. Give any three sources of images or objects in a word processor.
9. Explain the concept of importing objects into a word processor.

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Answer of revision questions

1. A graphic is a non-text object like a picture, drawing, etc. e.g. clipart.
2. A). Click it to select then drag.
   B). Click it then click the increase brightness button on picture toolbar.
3. From scanner, from file and clipart.
4. A graphic image that is predefined in shape but the user draws it by selecting it then dragging its size on the screen.
5. A). Select it then choose a different line thickness on the drawing toolbar.
   B). Select it then choose a fill pattern from the fill bucket on toolbar.
   C). Right click the autoshape then select the *Enter text* command. Type the text then click a blank area on the screen to apply.
6. Linking – object imported can only be edited in the original application from which it was created. Embedding – object imported becomes part of the current application and can be edited there.
7. Click it to select it, then drag handles to increase size.
8. Import from file, from clip gallery and by drawing.
9. This refers to inserting a picture or clipart from a different application storage or Internet.

Practical activity 1

- Jitegemee Self Help Group is a society of young entrepreneurs. The Group is in the process of writing a proposal in order to get funding from one of the NGOs and the government. The secretary of the Group, Mr. Kagezi has requested you to type for him a five page handwritten proposal.

  Use the following to create the document outline;
  - ☐ Introduction
  - ☐ Executing summary
  - ☐ Future outlook and trends
  - ☐ Office equipment and personnel
  - ☐ Operational plan
  - ☐ Conclusion

  Save it as Jitegemee Plan.
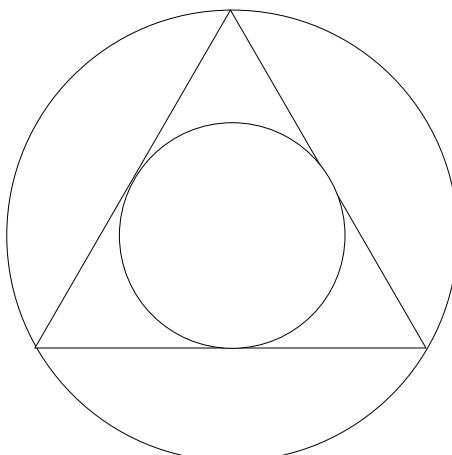
Practical activity 2

- Open the an existing document of not less than ten pages perform the following operations;

  a) Change Title font to Tahoma, bold, 18 points size and centre it on the page, underline.

  b) Drop the first character of the first paragraph to occupy three lines below it.

  c) Insert page numbers at the bottom right and footers at the centre of page.

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Practical activity 3

1. Figure right shows a drawing done using Word processing software;

   a) Draw the object and make the outer circle to have double lines outline.

   b) Fill the inner circle with red colour.

   c) Fill the triangle with blue colour and make it to lie behind the inner circle.

2. Print two copies of selected page of Jitegemee Plan.

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Chapter 4
Spreadsheet

Njabini Boys high school

Form two work

269

Introduction

- Spreadsheet is essentially a ledger sheets that enables the user enter, edit and manipulate numeric data.

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Types of spreadsheets

- Manual spreadsheet – this spreadsheet consists of a book like ledger with many sheets of papers divided into rows and columns on which data elements are entered manually using a pen or pencil.
- Electronic spreadsheet – this spreadsheet is prepared using a computer program that enables the user to enter values in rows and columns and manipulate them mathematically using formulae.

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Advantages of electronic spreadsheet

- Entries made using spreadsheet are faster and accurate.
- It offers a large area for data entry and manipulation.
- Electronic spreadsheet produces neat and presentable output.
- It has better documentation formatting capabilities.
- It has inbuilt formulae called functions that enables the user to quickly manipulate mathematical data.
- Has ability to perform automatic recalculation.
- It utilizes large storage space on computer storage devices to save and retrieve documents.

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Examples of spreadsheets programs

- Viscal

- Lotus 1-2-3

- Microsoft Excel

- VP – Planner
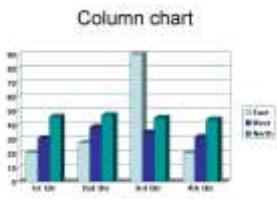
Components of spreadsheet (Worksheet and Database)

Worksheet
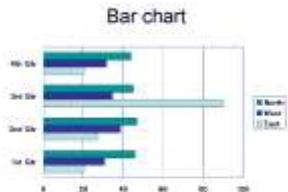
Database

- Worksheet – this is the component in which data values are entered. It's made up to of rows and columns.
- Database – the data management feature of spreadsheet can be found on the data menu. Data entered in spreadsheet can be manipulated by sorting, filtering, calculating subtotals etc.

Components of worksheet (Graphs)

Column chart
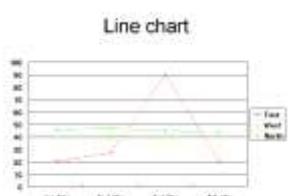
Bar chart

- Graphs – a graph is a pictorial representation of the base data on a worksheet.
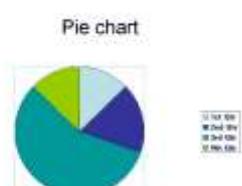
275

Examples of graphs found in MS-Excel

Line chart

Pie chart

- Pie chart

- Graphs e.g. bar, column

- Line graphs etc.

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Application areas of spreadsheet 1

- Accounting – many accountants and business people find spreadsheet a useful tool to use in recording daily transactions and keeping of financial records. Spreadsheet comes with inbuilt functions that make accounting tasks easier.
- Data management – spreadsheet enables neat arrangement of data into tabular structure. Data management functions include sorting, filtering, using forms to enter and view records.
- Statistical analysis – spreadsheets have in-built statistical analysis tools that can speed up data manipulation. Some of statistical functions found in MS-Excel are: Average, Maximum, Median, Minimum, Mode, Sum etc.

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Application areas of spreadsheet 2

- Forecasting ("What if analysis") – this feature involves changing the value of one of the arguments in a formula to see the difference the change would make on the result of the calculation.
- Scientific application – engineers, scientific and technical users store empirical data, perform statistical analysis, build and prepare complex mathematical models using spreadsheet.
- Home/personal use – this involves tracking cash flow, preparing household budgets and personal financial statements.

278
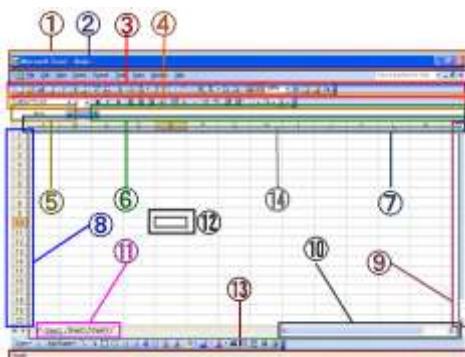
Starting Microsoft Excel

1. Click on the "Start" menu.
2. Point to "Programs/All Programs".
3. Point to "Microsoft Office 2003".
4. Click "Microsoft Office Excel 2003".

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Parts of MS-Excel windows

1. Title bar
2. Menu bar
3. Standard toolbar
4. Formatting toolbar
5. Name box (Cell address)
6. Formula bar
7. Column header
8. Row header
9. Vertical scroll bar
10. Horizontal scroll bar
11. Worksheet tab
12. Cell pointer
13. Status bar
14. Worksheet

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Microsoft Excel application window 1

1. Title bar – it displays the title of the application and control buttons for minimising, maximise and closing application.
2. Menu bar – displays a list of menu options e.g. inserts, view, edit etc.
3. Standard tool bars – has shortcuts to some of the most commonly used menu commands e.g. copy, cut etc.
4. Standard tool bar – has also shortcuts to some of the most commonly used menu commands e.g. bold, italic etc.
5. Name box (Cell address) – is the combination of a column header and a row header the indicate of a specific cell.
6. Formula bar – it enables the user to enter or edit a formula or data in a cell.
7. Column header – indicates vertical direction of the cell. It is located above the worksheet and lined up in order to the alphabet. 281

Microsoft Excel application window 2

8. Row header – indicates horizontal direction of the cell. It is located left the worksheet and lined up in order to the figure.
9. Vertical scroll bar – the user drags to scroll upward or downwards of a worksheet.
10. Horizontal scroll bar – the user drags to scroll right or left of a worksheet.
11. Worksheet tab – shows the number of worksheets in the workbook.
12. Cell pointer – it marks the position of the current cell or the insertion point.
13. Status bar – displays information about the program currently running.
14. Worksheet – consists of cell, rows and columns where data is entered.
15. Workbook – it consists of several worksheets. 282
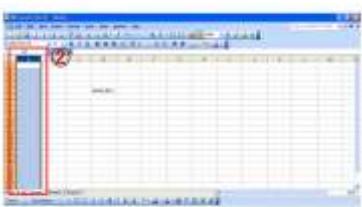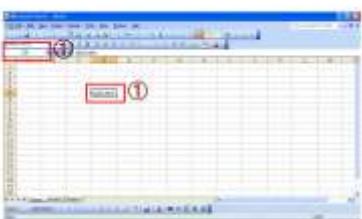
Other parts of MS-Excel

- Cells – a cell is an intersection between a row and a column. A column is a vertical arrangement of cells labelled A,B,C… while a row is the horizontal arrangement labelled 1,2,3…
- Active cell pointer – a cell pointer indicates the current active cell. It is highlighted with a dark outline.
- Cell address – the cell address id the combination of a column header and a row header that indicate the location of a specific cell such as A1, B2, C3 etc.

283

Navigation the MS-Excel screen 1

1. Click cell D5. notice that the cell pointer immediately moves to he cell and the name box reads D5. typing on the keyboard now inserts entries in cell D5 as long as the pointer is still there.
2. Click letter A that heads the first column. Notice that the whole column is highlighted.

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Navigation the MS-Excel screen 2

3. Double click cell E10. Notice that the insertion pointer blinks in the cell and you can start typing characters inside the cell.

4. Click the down arrow on the vertical scroll bar. The worksheet moves upwards on the screen. The opposite happens when you click the left arrow on the vertical scroll bar.

285
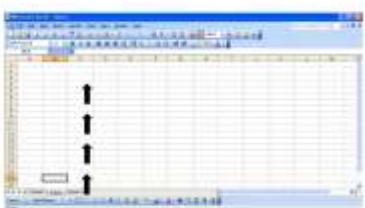
Navigation the MS-Excel screen 3

5. Click the right button on the horizontal scroll bar. The worksheet moves on the left. The opposite happens when you click the left button on the horizontal scroll bar.

6. Press the "right arrow" key on the keyboard. Notice that the cell pointer moves one column to the right on the same row. This can also be done by pressing the "Tab" key once.   286

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Navigation the MS-Excel screen 4

7. Press the "left arrow" key on the keyboard. Notice that the cell pointer moves one column to the left on the same row. Pressing "Shift+Tab" gives the same results.

8. Press the "up arrow" key on the keyboard. Notice that the cell pointer moves one row up on the same column.

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Navigation the MS-Excel screen 5

9. Press the "down arrow" key on the keyboard. Notice that the cell pointer moves one row down on the same column.

10. Press the "End" key. The status bar will display the message "END". If you press the right arrow key, the cell pointer will moves right to the last cell on the row. If the left, up or down keys were to be pressed instead, the cell pointer would move to the last cell to the left, top or bottom respectively.

11. Pressing "Ctrl+Home" moves the cell pointer to the first cell of the worksheet i.e. cell A1.

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Steps of "Using blank template"

1. On the "File" menu,
2. Click "New" (New workbook task pane is displayed).
3. In the "New" section, click "Blank workbook". (New workbook is opened).

NB; shortcut key
    Ctrl + N

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Steps of "Using a template"

New Workbook task pane

Template dialog box

1. On the "File" menu.
2. Click "New" (New Workbook task pane is displayed).
3. On the task pane under "Templates", click "On my computer" (Template dialog box is displayed).
4. In the templates dialog box, click "Spreadsheet Solution" tab.
5. On the spreadsheets solutions tab, click the template that you wish to create.
6. Click the "OK" button. 290

Components of a worksheet

1. Cells – an intersection between a row and column.
2. Row – horizontal arrangement of cells.
3. Columns – vertical arrangement of cells.
4. Range – a group of rectangular cells that can be selected and manipulated as a block.

291

Entering data into a worksheet

- As you type an entry, it is displayed in the formula bar. To place the content into the active cell press "Enter" key, an arrow key or click into another cell.

292

Cell data types

- There are four basic types of data used in spreadsheet.

  - ☐ Labels
  - ☐ Values
  - ☐ Formulae
  - ☐ Functions

293

Labels

- Any text or alphanumeric characters entered in a cell are viewed as labels in a spreadsheet program. Labels can be row and column headings used to describe the contents of row or column e.g. class, name, sex etc294

Values

- They are numbers that can be manipulated mathematically e.g. currency, data, numbers (0-9) etc.

295

Formulae

- They are user designed mathematical expressions that create a relationship between cells and return a value in a chosen cell.

NB; formula must start with an = sign.

296

Functions

- They are in-built predefined formulae that the user can quickly use instead of having to create a new one each time a calculation is to be done e.g. SUM, COUNTIF, IF etc.

297

Steps of saving a workbook

Save As dialog box

1. On the "File" menu
2. Click "Save as" (Save as dialog box is displayed).
3. Select the location in which your workbook will be saved in the "Save in" box
4. Type a unique name for the workbook in the "File name" box.
5. Click the "Save" button.

NB; shortcut key
    F12

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Retrieving a workbook

Open dialog box 1

Open dialog box 2
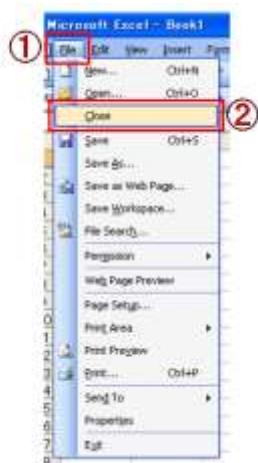
1. On the "File" menu, (or standard toolbar)
2. Click "Open".
3. Click the "Look in" drop down list arrow.
4. Select the drive or folder where the workbook was saved.
5. Double click the workbook icon that you want and the worksheet.

NB; shortcut key
Ctrl + O

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Closing a workbook.
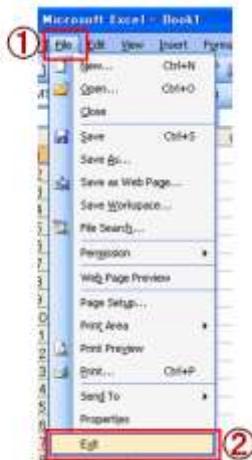
1. On the "File" menu.

2. Click "Close"

- This closes the current workbook but does not close the application.

NB; shortcut key
Ctrl + F4

300

Exiting a workbook

1. On the "File" menu.

2. Click "Exit".

NB; shortcut key
   Alt + F4

301

Block operations

- Performing calculations on a worksheet data involves block operations. A block of selected cells in a worksheet is referred to as a range. A range is specified by the address of its top left and bottom right cells or using a name.

302

Steps of "select a range of continuous cells"

1. Click the top left cell of the range to be selected.

2. Hold down the "Shift" key.

3. Click the bottom right cell of the range (the range will be highlighted)

303

Steps of "select a range of non-continuous cells

1. Click the top left cell of the range to be selected.

2. Hold down the "Ctrl" key.

3. Click the bottom right cell of the range. "Ctrl selects individually clicked rows, columns or cells.

304

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Steps of create named range proceed as follows

1. Select the range to be named.

2. Click inside the name box. Delete the cell reference and type a name for the range.

3. Press "Enter" key to apply.

305

Arithmetic operators

	Description	Example
/	Division	=A2/B2
*	Multiplication	=A2*B2
+	Addition	=A2+B2
-	Subtraction	=B2-A2

- Arithmetic operators mostly follow the rule similar to mathematical concept of BODMAS. This means that whatever is in parenthesis is evaluated first. Multiplication and division are evaluated from left to right while addition and subtraction are evaluated last. Left table shows a summary of operators used to create formulae. 306

Relational operators

	Description	Example
=	Equal to	=A2=B2
>	Greater than	=A2>B2
<	Less than	=A2<B2
<>	Not equal to	=B2<>A2
<=	Less than or equal to	=A2<=B2
>=	Greater than or equal to	=A2>=B2

- A relational operator returns either true or false depending on the magnitude of the value being evaluated. Table right is summary of a relational operator.

307

Operator precedence

Operator	Name	Precedence
-	Negation as in -1	1
%	Percent	2
^	Exponentiation	3
* and /	Multiplication and division	4
+ and -	Addition and subtraction	5
=, <>, >, <, <=, >=	Relational	6

- If several operators are used in a single formula, MS-Excel performs the operations in the order shown in table right. A formula with operators that have same precedence i.e. if a formula contains both multiplication and division, operators are evaluated from left to right. Enclosing part of the formula to be calculated in parentheses or brackets makes that part to be calculated first.

308

Autofill

- You can quickly fill adjacent cells with data that continues a formula or a series of numbers, days, dates or etc automatically by dragging the fill handle.

Steps of "Autofill"

NAME	ENGLISH	MATH	TOTAL	A
MARTIN	86	95	181	
STEPHEN	74	100		
MARVIN	98	66		

NAME	ENGLISH	MATH	TOTAL	AV
MARTIN	86	95	181	
STEPHEN	74	100	174	
MARVIN	98	66	164	

1. Select the cell which is containing a formula or word or figure.
2. Place the mouse pointer bottom right corner of the selected cell, then pointer sign will be changed to black cross.
3. Move the black cross pointer up to where you want to make a copy using drag and drop. (down, up, left or right).

Cell references

- A cell reference identifies a cell or a range of cells on the worksheet and shows Microsoft Excel where to look for the values or data needed to use in formulas. MS-Excel uses the A1 cell reference style that identifies a cell by its column label followed by row number e.g. B1, E10 etc. RICI reference style can also be used where a cell is referenced by its row number followed by its column number e.g. R3, C4, R5, C20 etc.

311

Relative reference

NAME	ENGLISH	MATH	MARKS
MARTIN	86	95	=B2+C2
STEPHEN	74	100	
MARVIN	98	66	

NAME	ENGLISH	MATH	MARKS
MARTIN	86	95	181
STEPHEN	74	100	=B3+C3
MARVIN	98	66	

- This is a cell reference whose cell references keep on changing automatically depending on their position in the worksheet e.g. if you type formula

  =B2+C2

  in cell D2 if the formula is copied to cell D3 it automatically changes to *=B3+ C3*.

312

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Absolute referencing

- This is used when you copy a formula to different cell and you don't want Excel to adjust references. To make a formula absolute, add a dollar sign before the parts of cell reference that do not change

  e.g. =A5 × **$B$2**.   313

Mixed cell referencing

- This is a combination of relative and absolute reference

  e.g. **$A3** or **A$3**

  in the first case the column reference is absolute while the row is relative, in the second case the column reference is relative while the row reference is absolute.
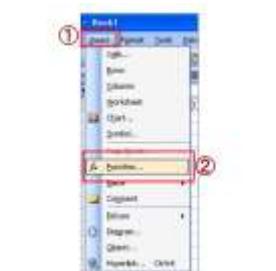
314

Using in-built functions

- A function must start with an (=) sign followed the function name and arguments. Argument are numeric, logical values or text enclosed in parenthesis. For example, in =SUM(A3:F3), SUM is the function that adds the range A3 to F3 which is the argument. In MS-Excel, functions are categorized according to the nature of problems they work on. We shall look at the following categories of in-built functions;
  - ☐ Mathematical
  - ☐ Statistical
  - ☐ Logical
  - ☐ Date and time

315

Steps of "using in-built functions"

Insert Function dialog box

1. On the "Insert" menu.
2. Click "function" ("Insert Function" dialog box is displayed).
3. Select the category.
4. In the function list box, select a function
5. Specify the function argument then click

316

Basic functions and formulae

- A formula is a sequence of values, cell references, names, functions or operators in a cell that together produce a new value while a function is an in-built formula for solving standard problems.

317

Mathematical functions (SUM)

- Add all the value in the selected in the range of cells. For example if A3, B3 and C3 contains 20, 50 and 80 respectively,

=SUM(A3:C3)

returns 150.

318

Steps of "SUM" function

1. Select the cell where you want to return the sum value.
2. Click the "Autosum" command on the standard toolbar. (formula is displayed in the cell which you selected).
3. Select the range for add the numbers in a range of cell using drag and drop. (data range is displayed in the brackets).
4. Type "Enter" key.

319

Mathematical functions (ROUND)

- Rounds a number to a specified number of decimal places. Zero round off the number to the nearest integer. For example

=ROUND(49.769,1)

returns 49.8.
while

=ROUND(49.769,0)

returns 50.

320

Steps of "ROUND" function

Insert Function dialog box (ROUND)

Function Arguments dialog box (ROUND)

1. Select the cell where you want to return the round figure.
2. On the "Insert" menu
3. Click "Function".
4. Type "ROUND" in the search box.
5. Click "GO" button.
6. Select a function from the recommend list.
7. Click "OK" button.
8. Click the cell which is the number you want to round. (cell address is displayed in the "Number" box).
9. Type the number of decimal which you want to round in the "Num_digits" box.
10. Click "OK" button.

321

Mathematical functions (SUMIF)

- Conditionally add the specified cells according to the set criteria.

  =SUMIF(A3:A10,">=1000")

  returns a value if, and only if, the sum is greater than or equal to 1000.

322

161

Steps of "SUMIF" functions

Insert function dialog box (SUMIF)

1. Select the cell where you want to return the sumif value.
2. Click *"fx"* command on the formula bar.
3. Select "Math & Trig" category from the down arrow list.
4. Select a function "SUMIF" from the list.
5. Click "OK" button.
6. Select the range you want to evaluate using drag and drop.
7. Type the criteria which is the condition or criteria in the form of a number, expression or text that defines which cells will be added.
8. Click "OK" button.

Function Arguments (SUMIF)

323

Mathematical functions (PRODUCT)

■ Multiplies all the values in the arguments. For example,
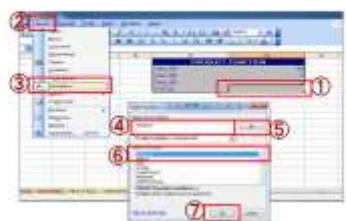
=PRODUCT(40,3,2)

returns 240.

324

Steps of "PRODUCT" function

Insert Function dialog box (PRODUCT)

Function Arguments dialog box (PRODUCT)

1. Select the cell where you want to return the product value.
2. On the "Insert" menu.
3. Click "Function" .
4. Type "Product" in the search box.
5. Click "GO" button.
6. Select "PRODUCT" from the select a function list.
7. Click "OK" button.
8. Select the range in the "Number1" box where you want to multiply using drag and drop.
9. If you want to multiply other range, insert that range in the "Number 2" box using drag and drop.
10. Click "OK" button.

325

Statistical functions (AVERAGE)

■ It returns the average (mean) of a set of values which can be numbers, arrays or references that contain numbers e.g. value 20 is in cell B2 and 10 in cell C2 then

= AVERAGE(B2:C2)

returns 15 as the average.

326

Steps of "AVERAGE" function

1. Select the cell where you want to return the average figure.
2. Click the down arrow of "Autosum" command on the standard toolbar.
3. Click the "Average" (formula is displayed in the cell which you selected).
4. Select the range for calculate average using drag and drop. (data range is displayed in the brackets).
5. Type "Enter" key.

327

Statistical functions (COUNT)

- Counts the number of cells that contain values within a range

  =COUNT(B2:E7)

  returns 4 if all cells have values.

328

Steps of "COUNT" function

1. Select the cell where you want to return the count figure.
2. Click the down arrow of "Autosum" command on the standard toolbar.
3. Click the "Count" (formula is displayed in the cell which you selected).
4. Select the range for count using drag and drop. (data range is displayed in the brackets).
5. Type "Enter" key.

329

Statistical function (COUNTIF)

- Conditionally counts the number of cells within a range that meets a given condition. For example, if A3, B3, C3, D3 and E3 contain 20, 50, 80, 60 and 45 respectively then

=COUNTIF(A3:E3,">50")

returns 2.

330

165

Steps of "COUNTIF" functions

Insert Function dialog box (COUNTIF)

Function Arguments dialog box (COUNTIF)

1. Select the cell where you want to return the countif figure.
2. On the "Insert" menu.
3. Click "Functions".
4. Select a category "Statistical" form down arrow.
5. Select "COUNTIF" from the list of functions.
6. Click "OK" button.
7. Select the range which you want to count nonblank cells using drag and drop.
8. Type the criteria which is the condition in the form of a number, expression or text that defines which cells will be counted.
9. Click "OK" button.

331

Statistical functions (MAX)

- Returns the largest value in a set of values or within a range. For example, if A3, B3, C3, D3 and E3 contains 20, 50, 80, 60 and 45 respectively then

=*MAX(A3:E3)*

return the maximum value in the range. In this case, returns 80.

332

Steps of "MAX" function

1. Select the cell where you want to return the MAX value.
2. Click the down arrow of "Autosum" command on the standard toolbar.
3. Click the "MAX" (formula is displayed in the cell which you selected).
4. Select the range for return the largest value using drag and drop. (data range is displayed in the brackets).
5. Type "Enter" key. (MAX value is displayed). **333**

Statistical functions (MIN)

- Returns the smallest value in a set of values or within a range. For example, if A3, B3, C3, D3 and E3 contains 20, 50, 80, 60 and 45 respectively then

=MIN(A3:E3)

will return the lowest value in the range. In this case, returns 20.

334

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Steps of "MIN" function

1. Select the cell where you want to return the MIN value.
2. Click the down arrow of "Autosum" command on the standard toolbar.
3. Click the "MIN" (formula is displayed in the cell which you selected).
4. Select the range for return the lowest value using drag and drop. (data range is displayed in the brackets).
5. Type "Enter" key.

335

Statistical function (RANK)

- Return the position or rank of a number from a list of values. For example,

  =RANK(A2,$A$3:$A$8,1)

  returns the position of A2 as if the list was sorted in ascending order.

336

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Steps of "RANK" function

Insert Function dialog box (RANK)

Function Arguments dialog box (RANK)

1. Select the cell where you want to return the position.
2. Click *"fx"* on the formula bar.
3. Type the "RANK" in the search box.
4. Click "GO" button.
5. Select a function "RANK" from the recommended list.
6. Click "OK" button.
7. Select the cell which you want to find the rank.
8. Select the range of reference which is an array of, a reference to, a list of numbers.
9. Type "1" in the "Order" box if you want to display descending.
10. Type "Enter" key.

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Statistical functions (MODE)

- Returns the most frequently occurring value in a set of values

e.g. =Mode(A10:E10)

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Steps of "MODE" function.

Insert Function dialog box (MODE)

Function Arguments dialog box (MODE)

1. Select the cell where you want to return the mode value.
2. On the "Insert" menu.
3. Click "Functions".
4. Select a category "Statistical"
5. Select a "MODE" from the list.
6. Click "OK" button.
7. Select the range in the "Number1" box where you want to calculate the mode using drag and drop.
8. If you want to multiply other range, insert that range in the "Number 2" box using drag and drop.
9. Click "OK" button.

Logical functions (IF)

- It returns a specified value if a condition is evaluated and found to be true and another value if it's false e.g. IF (mean score>50,"Pass", else "Fail". It will display Pass. If values are more than 50 else displays Fail.

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Steps of "IF" function.

Insert Function dialog box (IF)

Function Arguments dialog box (IF)

1. Select the cell where you want to return the IF value.
2. Click **"fx"** button on the formula bar.
3. Type "IF" in the search box.
4. Click "GO" button.
5. Select "IF" from the recommended list.
6. Click "OK" button.
7. Type any formula in the "Logical_test" box which is any value or expression that can be evaluated to TRUE or FALSE.
8. Type any words or figure in the "value_if_true" box you want to display if value is true. You can nest up to 7 IF function.
9. Type any other words or figure in the "value_if_false" you want to display if value is false.
10. Click "OK"

Date and time functions (TODAY)

■ Returns a number that represents today's date. The function takes no arguments. For example, by the time of writing this book,

=TODAY()

returned 17/05/2012

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Steps of "TODAY" function

Insert Function dialog box (TODAY)

Function Arguments dialog box (TODAY)

1. Select the cell where you want to return the TODAY value.
2. On the "Insert" menu.
3. Click "Function". (Insert Function dialog box is displayed).
4. Select a category "Date & Time.
5. Select a function "TODAY" from the list.
6. Click "OK" button. (other dialog box is displayed which is written "This function takes no arguments).
7. Click "OK" button. (today's date is displayed where you select the cell).

Date and time functions (NOW)

■ Returns the current date and time formatted as date and time. It takes no arguments. For example,

=NOW()

returned 17/05/2012 08:43

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Steps of "NOW" function

Insert Function dialog box (NOW)

Function Arguments dialog box (NOW)

1. Select the cell where you want to return the "NOW" value.
2. Click **"fx"** button on the formula bar.
3. Type "NOW" in the search box.
4. Click "GO" button.
5. Select a function "NOW" from the list.
6. Click "OK" button. (other dialog box is displayed which is written "This function takes no arguments).
7. Click "OK" button. (today's date is displayed where you select the cell).

Date and time functions (DATE)

- Functions returns a serial number that represents a particular date. MS-Excel uses year 1900 serial number 1. for example,

  =DATE(112, 17, 5)

  returns May 17, 2012. Year = (1900 + 112), month = 5, day = 17

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Steps of "DATE" function

Insert Function dialog box (DATE)

Function Arguments dialog box (DATE)

1. Select the cell where you want to return the DATE value.
2. On the "Insert" menu.
3. Click "Function". (Insert Function dialog box is displayed).
4. Select a category "Date & Time".
5. Select a function "DATE".
6. Click "OK" button. (Function Arguments dialog box is displayed).
7. Type "Year", "Month" and "Day" in the each box.
8. Click "OK" button. (Date is displayed in the cell where you selected).

Date and time functions (HOUR, MINUTE or SECOND)

- Functions returns the current hour as number 0 to 23, minute from 0 to 59 and seconds from 0 to 59 respectively.

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Steps of "delete worksheet range"

1. Select the cell or range of cells.
2. On the "Edit" menu.
3. Point to "Clear".
4. Click "All", "Formats", "Contents" or "Comments".

NB; alternatively press the "Delete" key if you want to delete contents. ₃₄₉

Steps of "copy and paste cell(s) contents"

1. Select the range of cells
2. On the "Edit" menu
3. Click "Copy" or "Copy" command on the standard toolbar.
4. Click the cell from where you want the content to be copied.
5. On the "Edit" menu
6. Click "Paste" or "Paste" command on the standard toolbar.

NB; shortcut key for copy
Ctrl + C
shortcut key for paste
Ctrl + V

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Steps of "cut and paste cell(s) contents"

1. Select the range of cells.
2. Click "Cut" command on the standard toolbar.
3. Click the cell from where you want the content to be moved.
4. Click "Paste" command on the standard toolbar.

NB; shortcut key for cut
   Ctrl + X

Steps of "insert a new column or row"

1. Position the pointer where the new row or column will appear.

2. On the "Insert" menu.

3. Click "Rows" or "Columns"
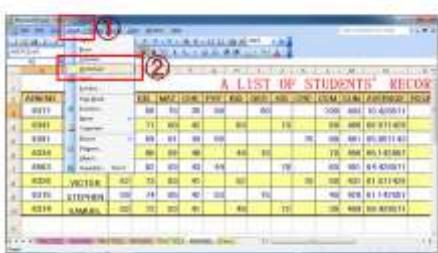
Steps of "delete a column or row"

1. Select the column or row to be deleted.

2. On the "Edit" menu.
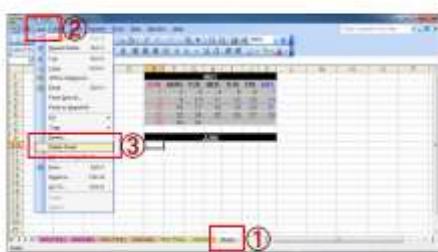
3. Click "Delete"

Steps of "insert more worksheets"

1. On the "Insert" menu.

2. Click "Worksheet". (a new worksheet is added into your workbook.

Steps of "delete a worksheet"

1. Click the "Worksheet" tab which you want to delete.

2. On the "Edit" menu.

3. Click "Delete Sheet".

Find and replace

- MS-Excel provides capability to find and replace data in a worksheet same as MS-Word.

Steps of "Find" function

Find and Replace dialog box (Find tab)

1. On "Edit" menu.
2. Click "Find". (Find and replace dialog box is displayed).
3. Type the text to search for in the "Find What" box.
4. Click "Find All" or "Find next".

NB; shortcut key

Ctrl + F

Steps of "replace" function

Find and Replace dialog box (Replace tab)

1. On "Edit" menu.
2. Click "Replace". (Find and Replace" dialog box is displayed).
3. Type the word or phrase to find in the "Find What" box.
4. Type the word or phrase to replace the found word or phrase in the "Replace With" box.
5. Click "Replace All" or "Replace".

NB; shortcut key

Ctrl + H

Steps of "correcting spelling mistakes"

1. On the "Tool" menu.
2. Click "Spelling" (Spelling dialog box is displayed).
3. Click a button. Ignore Once, Ignore All, Add to Dictionary, Change, Change All or AutoCorrect.

NB; shortcut key
F7

Steps of "Formatting label"
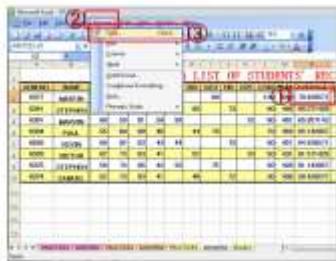
Format cells dialog box

1. Highlight the cells that have the text to be formatted.
2. On the "Format" menu.
3. Click "Cells" (Format Cells dialog box is displayed).
4. Click the "font" tab.
5. Select the type of font, font style, size, underline, color and other effects.
6. Click "OK" button.

Steps of "formatting numbers"

Format cells dialog box

1. Highlight the cells that have the numbers to be formatted.
2. Click the "Format" menu.
3. Click "Cells". (Format Cells dialog box is displayed).
4. Select the "Number" tab.
5. Select the type of number from the category list.
6. Click "OK" button.

Types of formatting numbers

Number	Meaning
General	General format cells have no specific number format.
Number	Used for general display of numbers e.g. 2345.23.
Currency	For displaying general monetary values e.g. $100, Ksh.10.
Accounting	Lines up the currency symbols and decimal points.
Date	Displays date in chosen format.
Time	Displays time in chosen format.
Percentage	Multiplies the value in a cell with 100 and displays it as %.
Text	Formats cells to the treated as text even when numbers are entered.
Custom	For a number format not predefined in MS-Excel, select custom then define the pattern.

Steps of "formatting borders"
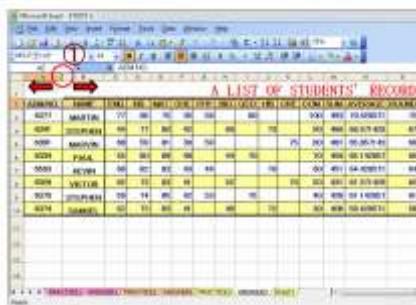
Format cells dialog box
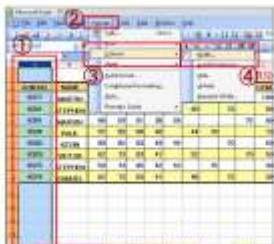
1. Highlight the range you wish to insert borders.
2. On the "Format" menu.
3. Click "Cells". (Format Cells dialog box is displayed).
4. Click the "Border" tab.
5. Select a style of line and color from the list.
6. Click any commands which you want to draw the line.
7. Click "OK" button. (selected range will have a border around it).

Steps of "resize a column with mouse"

1. Move the mouse pointer to the right hand side line that separates the column headers for instance e.g. the line between A and B.
2. Notice that the mouse pointer changes from a cross to a double arrow.
3. Click the mouse button and hold it down so that you can now resize the width of the column by dragging it to the size you wish. After dragging to the required point release the mouse button. The column will have a new size.

Steps of "resize a column using the "Format" menu
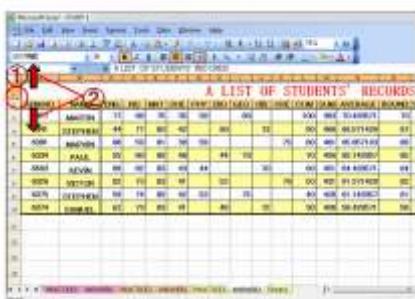
Column width dialog box
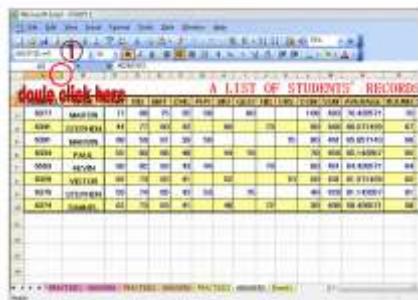
1. Select the column where you want to resize.
2. On the "Format" menu.
3. Point to "Column".
4. Click "Width". (Column Width" dialog box is displayed).
5. Type a width in the column width box.
6. Click "OK" button.

Steps of "change row height"

1. Point to the line that separate two row numbers e.g. the line between 1 and 2. The mouse pointer becomes a double arrow.
2. Drag the line until the height of the row is as required, then stop and release the mouse button.
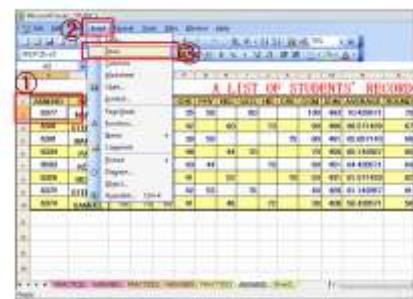
Steps of "auto adjust a column width and row height

1. Place the mouse pointer between columns or heights which you want to adjust. (mouse pointer changes from a cross to a double arrow).

2. Double click there. (width or height was changed a new size).

Steps of "Inserting rows"

1. Select the cell where you want to insert the row.
2. On the "Insert" menu.
3. Click "Rows" (new rows was inserted above of the cell which you selected and shift all the other rows downward).

Steps of "Inserting columns"

1. Select the cell where you want to insert columns.
2. On the "Insert" menu.
3. Click "Columns". (new column was inserted left of the cell which you selected and shift all the others to the right).
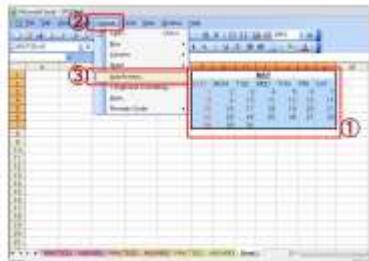
Steps of "select a entire worksheet"
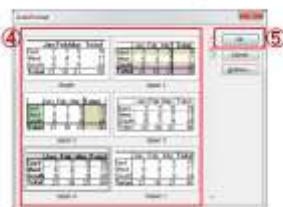
1. Select the any cell.

2. Pressing "Ctrl + A" (whole worksheet was highlighted).

Steps of "using autoformat"

Auto format dialog box

1. Select a range e.g. A2:N10 to set an autoformat.
2. On the "Format" menu.
3. Click "Autoformat". (AutoFormat dialog box is displayed).
4. Select a autoformat from the list.
5. Click "OK" button.

Data management

- Sometimes worksheet data can be too large and make it difficult for the user to properly manage it. MS-Excel has tools and features which enables the user to manage their data.

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The feature includes

- Sorting – with this feature spreadsheet can sort information by row or columns alphabetically or numerically in ascending or descending order.
- Subtotals – MS-Excel can automatically summarize data by calculating subtotals and grand total values in a list.
- Forms – this is a specially prepared template that the user can use to enter data is a worksheet.
- Filtering – it's a quick and efficient method of finding and working with a subject of data in a list. In MS-Excel there are two filtering commands.

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Steps of "data entry using forms"

1. Position the cell pointer in any cell containing data.
2. On the "Data": menu
3. Click "Form" (dialog box is displayed).
4. Navigate through, add new, delete or find records.
5. Click "OK" button.

Steps of "Sorting" function

Sort dialog box
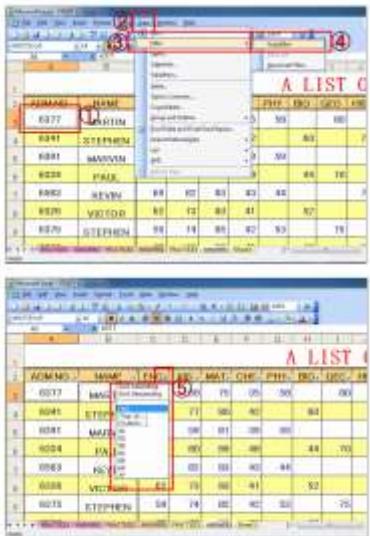
1. Select any sell where you wish sort by clicking its column header letter.
2. On the "Data" menu.
3. Click "Sort". (Sort dialog box is displayed).
4. In the "Sort by" section, select the field for sorting.
5. Select the sort order descending or ascending.
6. Select the field for sorting and sort order if you want to set more.
7. In the "My data range has" section, select "Header row" or "No header row".
8. Click "OK" button.

Types of filtering in a MS-Excel
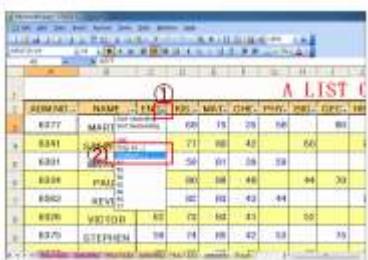
- **Autofilter** – uses simple criteria and includes filter by selection. Autofiltering can be applied to only one list on a worksheet at a time.

- **Advanced filter** – use more complex criteria.

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Steps of "Autofiltering a list"

1. Select a cell in the list where you want to set an autofilter.
2. On the "Data" menu.
3. Point to "Filter".
4. Click "Autofilter". (down arrow buttons are displayed in the header row of data range).
5. You can sort or display any data from the list.

Steps of "using custom autofilter"
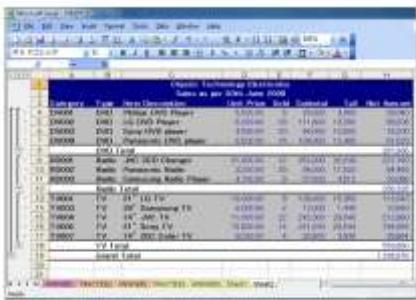
Custom AutoFilter dialog box
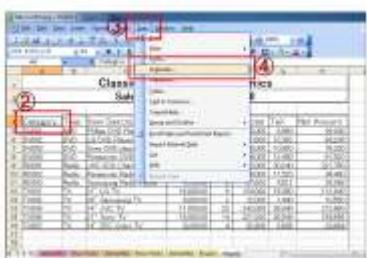
1. Click the down arrow button. (the list is displayed).
2. Click "Custom". (Custom Autofilter dialog box is displayed).
3. Custom for filter as you want.
4. Click "OK" button.

Subtotals and grandtotals
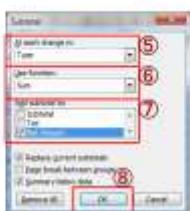
- Subtotals function is used to summaries a worksheet list to display grouped subtotals and a grand totals. The list is grouped using a preferred field. In MS-Excel to insert subtotals, you first sort the list so that the rows you want to subtotal are grouped together. Figure right shows a subtotaled list.

Steps of "generate subtotals"

Subtotal dialog box
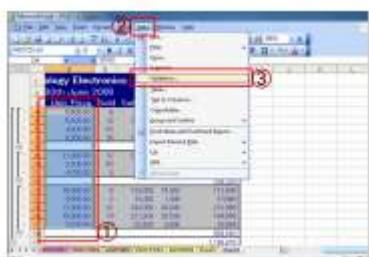
1. Sort the data in ascending or descending order.
2. Select a cell in the list.
3. On the "Data" menu.
4. Click "Subtotals". (Subtotal dialog box is displayed).
5. In the "At each change in" box, select the field to use for grouping.
6. In the "Use function" box, select a function you want to use.
7. In the "Add subtotal to" box, check the columns that contains values you want to calculate subtotal in the check box.
8. Click "OK" button. (MS-Excel automatically the list by calculating subtotal and grand total values of the list).

Input validation

- To ensure that a user does not enter invalid data, set the validation criteria. An error message is displayed when data that violates this rule is entered.

Steps of "set data validation" 1


Data Validation dialog box (Setting tab)
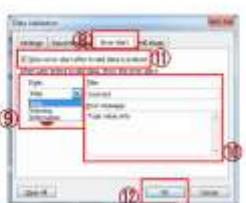
1. Highlight the range of cells to validate.
2. On the "Data" menu.
3. Click "Validation". (Validation dialog box is displayed).
4. Click "Setting" tab.
5. Select a validation criteria each boxes.

Steps of "set data validation" 2

Data Validation dialog box (Input Message)

Data Validation dialog box (Error Alert)
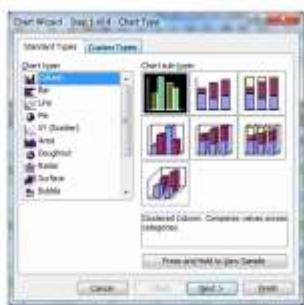
6. Click the "Input Message" tab.
7. Type the title and message in the each box.
8. Check "Show input message when cell is selected". If you want to display.
9. Click the "Error" alert" tab.
10. Select the style of error alert from the list.
11. Type title and message in the each box for error alert.
12. Click "OK" button.

Charts / graphs

■ These are pictures that represent values and their relationships. A chart helps the reader to quickly see trends in data and be able to compare and contrast aspects of data.

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Types of charts

MS-Excel charts

- Line chart
- Columns chart
- Bar chart
- Pie chart
- Scatter chart

NB; Figure right shows more types of charts available in MS-Excel.

Steps of "generate a chart" 1

Chart wizard dialog box (Chart Type)

Source Data dialog box

1. Click "Chart wizard" command on the standard toolbar. (chart wizard dialog box is displayed).
2. Click "Standard Types" tab.
3. Select the chart type from the list.
4. Select the chart sub-type from the list.
5. Click "Next" button.
6. Click "Source Data" tab.
7. Select the data range using drag and drop.
8. Select series in "Rows" or "Column".
9. Click "Next" button.

Steps of "generate a chart" 2

Chart Wizard dialog box (Chart Option)

Chart Wizard dialog box (Chart Location)

10. Click "Title" tab.
11. Type the name of chart title, X axis and Y axis in the each box.
12. Click other tabs if you want to add.
13. Click "Next" button.
14. Select place the chart "As new sheet" or "As object in".
15. Click "Finish" button.

Editing and formatting charts

Chart in edit mode

- Once the chart is created, its data series patterns or colours, size, location and orientation can be changed. Once you select the chart, a "chart" menu item is added onto the menu bar as shown in figure right.

# Steps of "label a chart"

Chart Option dialog box (Data Labels tab)

1. Right click on the chart. (shortcut menu is displayed).
2. Click "Chart option". (Chart option dialog box is displayed).
3. Click "Data label" tab.
4. In the "Label Contains" section, check you want to display.
5. Click "OK" button.

Steps of "inserting titles"
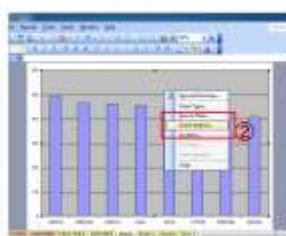
Chart Option dialog box (Titles tab)

1. Right click on the chart. (shortcut menu is displayed).
2. Click "Chart option". (Chart option dialog box is displayed).
3. Click "Title" tab.
4. Type name of chart title, X axis and Y axis in the each box.
5. Click "OK" button.

Steps of "inserting a legend"

Chart Option dialog box (Legend tab)

1. Right click on the chart. (shortcut menu is displayed).
2. Click "Chart option". (Chart option dialog box is displayed).
3. Click "Legend" tab.
4. Check "Show legend"
5. Select the place of legend bottom, corner, top right or left.
6. Click "OK" button.

Steps of "changing the chart location"
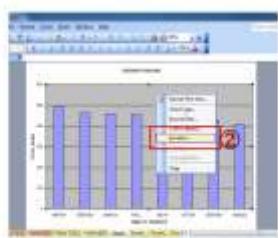
Chart Location dialog box

1. Right click on the chart. (shortcut menu is displayed).
2. Click "Location". (Chart Location dialog box is displayed).
3. Select the place of chart where you want to display.
4. Click "OK" button.

Steps of "changing the chart type"

Chart Type dialog box

1. Right click on the chart. (shortcut menu is displayed).
2. Click "Chart Type". (Chart Type dialog box is displayed).
3. Click "Standard Types tab".
4. Select the type of chart from the list.
5. Select the sub-type of chart from the list.
6. Click "OK" button.

Steps of "Print preview and page adjustment" 1

Print preview button on the standard tool bar

Print preview window

1. Click "Print Preview" command on the standard toolbar. (print preview window is displayed).

2. Click "Setup" command. (Page Set up dialog box is displayed).

Steps of "Print preview and page adjustment" 3

Page Setup dialog box (Page tab)
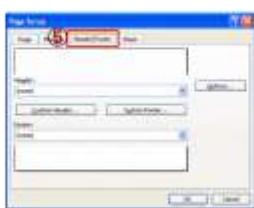
Page Setup dialog box (Margins tab)

3. In the "Page" tab, you can set "Orientation" and "Scaling".

4. In the "Margins" tab, you can set each margins.

Steps of "Print preview and page adjustment" 3

Page Setup dialog box (Header/Footer tab)

Page Setup dialog box (Sheet tab)

5. In the "Header/Footer" tab, you can insert some data e.g. characters, page number, picture or etc which you want to display.

6. In the "Sheet" tab, you can set print area, title, order and other options.

7. Click "OK" button.

Steps of "Print from print preview window"

Print preview window

Print dialog box

1. Click "Print" command. (Print Preview window is closed and Print dialog box is displayed).
2. Select the printer from the down arrow list.
3. Select other options "Print range", "number of copies" or etc.
4. Click "OK" button.

In creation of charts there must be

- Data range – this is a rectangular block of cells that provides the base data that is used to create the chart.
- Label – each representation of data on a chart can either be labelled by a value or text.
- Legend – this is a key that explains what each colour or pattern of the data representation in the chart means.

398

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Review questions 1

1. Define a spreadsheet.
2. What is an electronic spreadsheet?
3. State four advantages of an electronic spreadsheet over:
   A) Manual spreadsheets.
   B) Electronic calculator.
4. Explain three components of a spreadsheet.
5. State five application areas of spreadsheets.
6. What is forecasting? How can a spreadsheet help a person to do this?
7. Give any two methods you can to start MS-Excel.
8. Differentiate between a formula and a function.
9. Write the following formula as absolute =F10+G20.
10. The formula =A1+C2 is initially typed in cell D1. what will it be when copied to cell E1?
11. Differentiate between a worksheet and a workbook.
12. How can you close a MS-Excel worksheet without exiting from the application?

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Answer of review questions 1-1

1. A ledger sheet is made up of rows and columns for entering/writing data.
2. A computer software that looks like the manual ledger sheet with rows and columns used for entering data and manipulating numerical data.
3. A). Manual spreadsheet.
   1. Electronic spreadsheet has large worksheet as compared to manual worksheet.
   2. Electronic spreadsheet has inbuilt formulae called functions that are nonexistent in manual worksheet.
   3. Electronic spreadsheet uses the power of the computer quickly carry out operations.
   4. Superior formatting and editing qualities of electronic spreadsheet make it better than the manual worksheet.

   B). Electronic calculator.
   1. Has more memory than a calculator.
   2. Able to perform more complex and even logical operations but a calculator cannot.
   3. Uses large storage capacity of computer that a calculator doesn't have.
   4. Large work area that a calculator does not have.

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Answer of review questions 1-2

4. Worksheet, database and graphs
5. Scientific applications, accounting, forecasting, data management and mathematical operations.
6. Predicting future trends using the goal seek command.
7. A). Double click the shortcut icon on the desktop or.
   B). Select MS-Excel from the programs menu.
8. Formulae – arithmetic and user developed while functions – inbuilt formulae. Some of them are macro functions.
9. =$F$10+$G$20
10. =B1+D2
11. One page in a workbook is called a worksheet.
12. Click the File-close command.

Review questions 2

1. State the effect of pressing each of the following key combinations on the cell pointer:
   A) Right arrow key
   B) Shift + Tab
   C) Ctrl + Home
2. Define each of the following:
   A) Cell
   B) Row
   C) Column
3. Write the equivalent R1C1 reference for G20.
4. What is a name reference? How can you accomplish this in Excel?
5. What is a template? Explain how can start a spreadsheet template in MS-Excel.
6. State four data types acceptable to spreadsheets and explain each of them.
7. Differentiate between single and multiple cell referencing.
8. What is a range?

Answer of review questions 2

1. A). Moves cell pointer to the cell on the right.
   B). Moves cell pointer to the cell on the left.
   C). Moves cell pointer to cell A1
2. A). Intersection between row and column.
   B). Horizontal arrangement of cells.
   C). Vertical arrangement of cells.
3. R20C7
4. It is a cell reference that is a name. To name a range, select it then type a name in the name box then press enter key to apply the name.
5. A pre-formatted worksheet document used as a master layout for others. To start a template:
   i. Click File-New command.
   ii. In the new dialog box click the spreadsheet solutions tab then double click the template that you wish to start.
6. Values, Labels, Formulae, Functions.
7. Single referencing – for one cell, e.g. A1 while multiple referencing – for many cells, e.g. A1:B3
8. A group of rectangular cells.

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Review questions 3

■ Match the following statements with the correct answers.

Statements	Answers
(a). Click this to reduce the MS-Excel windows size to an icon on the task bar.	A. Name box
(b). Displays the current/active cell address	B. Save command
(c). Saves the file without changing its current address and name.	C. Minimize button
(d). Location where you can edit the contents of a cell.	D. Formula bar

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Answer of review questions 3

a. C

b. A

c. B

d. D

Review questions 4

1. Differentiate between the following terms:
   A) Formula and function.
   B) Relative and absolute cell referencing.
   C) Relational and arithmetic operators.
   D) DATE() and TODAY() function.
2. The formula $A1 + B$1 was entered cell C1. How would the formula be, if copied to F2?

Answer of review questions 4

1. Differentiate
   A) Formulae are mathematical expressions while a function is an inbuilt formula.
   B) Relative reference adjusts to reflect the new location while absolute reference do not change.
   C) Relational operators returns a boolean value (True or False) while arithmetic operators are used for performing basic arithmetic operations.
   D) DATE() returns serial number that represents a particular data while TODAY() returns a number that represents today date.
2. $A2 + E$1

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Revision questions 1

1. Describe two ways to complete an entry into a cell.
2. How does MS-Excel determine that an entry is a text or a formula?
3. How do you clear (erase) the contents of a cell?
4. How can you copy a formula?
5. Explain how you can print a worksheet in landscape orientation.
6. How can you insert rows in a MS-Excel worksheet.
7. Differentiate between copying and moving data in a worksheet.
8. What is the autoformat feature?
9. Explain the term filter. How is a filter different from a hide command.
10. Why are forms needed in MS-Excel.

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Answer of revision questions 1-1

1. A). Select a cell then type from the keyboard OR.
   B). Select a cell then double click the formula bar and type the value in the bar.
2. Formulae have equal sign at the beginning while text has either letters or a combination of letters and numbers.
3. Select cell then press delete key on the keyboard.
4. Click the cell that has the formula then click the Edit-Copy command. Click the cell to copy to then click the Edit-Paste command.
5. 1). Click File-Page setup command, choose landscape.
   2). On the margins tab of the page setup dialog box, select the page orientation then click OK button.
   3). Send document to printer.

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Answer of revision questions 1-2

6. Click the Insert-Rows command.
7. Copying – makes duplicate of data.
   Move – relocates data from one section of document to another.
8. A feature that applies a pre-formatted feature on a selected range of the worksheet.
9. A filter hides all the rows that do not have a particular selected value in a column while hides the entire row/column.
10. A). A form helps users to enter values in a table with minimum errors.
    B). It hides the base data of the table hence enhances data security.

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Revision questions 2

1. Give two examples of charts that you know.
2. Why are charts important in a spreadsheet?
3. Explain the concept of subtotals.
4. What is sorting? Explain how you can sort data in ascending order.
5. Give three number formats in MS-Excel.
6. What re worksheet borders? Explain how to implement them in the worksheet.
7. What is the difference between printing a range and whole workbook.
8. Explain two ways of changing the font size in MS-Excel.
9. What is a legend?
10. Which chart type will be most suitable to show trends? 411

Answer of revision questions 2-1

1. Pie charts, line charts, bar charts, scatter charts, column charts.
2. A chart represents sets of data in pictorial form hence makes the data easier to understand and interpret.
3. Subtotals command groups and finds totals of similar data records in the spreadsheet.
4. Sorting is arranging data values in a particular order.
   a. Highlight data range to be sorted.
   b. Click Data-Sort command.
   c. In the sort dialog box, select the order of sort in the key field as ascending then click OK.
5. Number, text, fraction, currency, scientific and time etc.

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Answer of revision questions 2-2

6. Are printable borders inserted around cell borders.
    6. Select the range then click Format-Cells command.
    7. On the Borders tab, select the border styles then click OK to apply.
7. Print range – print a selected workbook group of cells in a worksheet.
    Print whole – print the entire workbook that has data.
8. A). Highlight range then select font size from formatting toolbar.
    B). Highlight cell, click format – cell – Font – Size – Adjust.
9. Is a key that shows the meaning of different data values in a graph that are usually represented by different colours.
10. A line chart.

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Practical activity 1

Row	Label	Value
1.	Rent	650
2.	Utilities	13,200
3.	Salaries	15,700
4.	Loan repayment	1,700
5.	Insurance policy	1,040
6.	Office supplies	12,000
7.	Fixed costs	44,290

1. Study table right and enter its values in a worksheet.
2. Save the worksheet as My Budget.
3. Select the range i.e. from top to bottom and press delete key on the keyboard.
4. Click Edit – undo to reverse the delete action.

Practical activity 2

- Using the grading system given below, create a worksheet that can be used to calculate end of term examination marks and assign grades based on the following grading system:

  save the workbook as **Exam Grades.**

Marks	grade
80-100	A
70-79	B
60-69	C
50-59	D
40-49	E
Below 40	Fail

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Practical activity 3

Check No	Date	Paid to	Account	Amount
226	3/1	Barclays bank	Loan payment	1,000
227	3/1	KCB	Savings	800
229	3/1	James&Sons	Rent	1,000
230	3/1	ISA Publishers	Sch. Magazines	870
231	3/1	M. Allen	Salaries	400
232	3/1	Byte system	Salaries	450
233	3/1	Concord stationaries	Office suppliers	225
234	3/1	A. Winters	Salaries	945
235	3/3	Text book center	Book supplies	600
236	3/4	B.B. Properties	Materials	330
237	3/4	Diamond systems	Computers	7,700

1. Prepare the following worksheet.
2. Save the worksheet as Account.
3. Calculate the total amount.
4. Print the worksheet on landscape orientation.

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Practical activity 4

Financial comparison for October 2011.

MIWANI ENTERPRISES.

1. Save the worksheet as Miwani.
2. Add up the total for:
   A) Income; and
   B) Expenses on the budget column.
3. Get the surplus (profit or loss) in both columns by subtracting the Total Expenses from the Total Income.
4. What is the difference between Actual transaction and the plan (Budget). Get the difference by subtracting Budget surplus form Actual surplus.
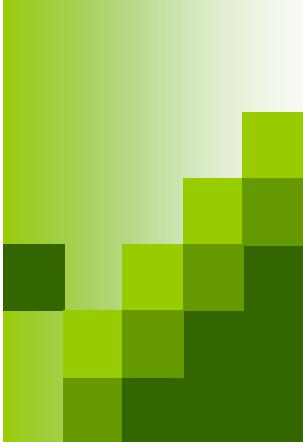
417

Practical activity 5

■ Enter the following data for 3 weeks' sales in a bookshop.

Week	Mon	Tue	Wed	Thur	Fri	Sat	Total
1-Mar	880	975	1045	1176	730	1035	
8-Mar	1440	885	1045	1140	1350	1440	
15-Mar	800	900	1040	1356	1400	1210	

A) Save the worksheet as bookshop sales on your computer.
B) Get the totals.
C) Draw a bar graph that compares values for the week starting 15th march and save it on a separate worksheet.
D) Create a pie chart that compares the sales for all the three Wednesdays. **418**

Chapter 5
Database

Introduction

- A data base is a collection of data stored in a computer system in some organised manner to make the retrieval of the data easy.

Database concepts 1

- Traditionally filling methods
  - This is the old way of organising files. This method is where data is stored within a single paper file or table.

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Database concept 2

- Computerised database
  - This database use database management system software to manipulate data. Examples of DataBase Management Software (DBMS) include:
    - MS-Access
    - Oracle
    - Fox Pro
    - Dbase IV

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Disadvantages of traditional methods

- Unnecessary duplication of data.

- Boredom and time wasting while searching for a record.

- Misleading reports due to poor data entry.

- Poor update of records.

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Functions of DBMS

- Allow the user add or delete records.
- Update or modify existing records.
- Organise data for easy access, retrieval and manipulation.
- Ensure security for data in the database.
- Keeps statistic of data items in database.
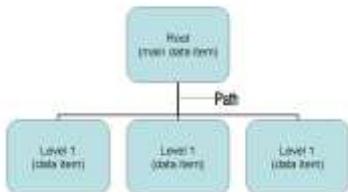
424

Database models 1

Flat files

Name	Serah Seki
Admission number	649
Total marks	680
Number of subjects	10
Average	68
Position	4

Hierarchical data base model
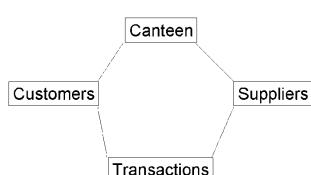
- Flat files – this model of database holds only one set of data and is not any different from the manual files e.g. the library catalogue.
- Hierarchical model – in this model items are arranged in hierarchical (tree) form. To access level one data items, you have to first access level one data items. A specific single path leads to each item at lower levels.

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Database models 2

Network database model

Relational database model

Customer Number	Name	Telephone number
900	Mary Koech	02075907
230	Peter Karimi	0667896
450	Bat Hon	04456000

Customer ID	Order Number	Date	Amount (sh)
900	2380	2/3/2004	90 000
450	811	2/5/2004	5 000
450	234	3/5/2004	13 000
450	567	3/6/2004	13 000

- Network model – in this model, lines are used to express the relationship between different data items, forming a network of items. Access of one item can be through many paths and from any item.
- Relational model – in this model, related data items are stored together in structures called relations or tables. Relationship can be created between tables such that a record or records from one table relates to another in another table.

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Database models 3

- Object oriented model – in this model, database is a complete program built to hold a collection of objects, which have both properties and behaviour.

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Features of database 1

Tables/file structure

FIRST NAME	MIDDLE NAME	LAST NAME	ADDRESS
MBUGUA	STEPHEN	KIMANI	250 KERUGOYA
ADERA	NELSON	ODUOR	395 HOMA BAY
MARGARET	JUDY	WEKESA	761 NAIROBI
GOTO	PATRICIA	MUILA	170 TALA
MMELU	LUCY	MWANI	380 KANGUNDO
ODECH	PETER	KORIR	605 KERICHO

Queries

Select Farmer Number, Name, Month of Delivery
Form
    Delivery Table
Where
    Month of Delivery = "January"

- Tables/file structure – this is database structure that is used to hold related records.
- Queries – this is a tool used to search for or question a database on specific records.

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Features of database 2

Sample form

Sample report

- Form/Screen input – this is a graphical interface that resembles the ordinary paper form used to collect data. It enables the user to view and enter data into a table.

- Report – database provides the user with a tool for generating reports from a table or query.

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Features of database 3

- Modules – this tool is like the macro but it's more precise in the sense that you have control over the actions taken.

- Macro – this tool enables the user to automate frequently performed procedures or tasks.

Data organisation in a database

- Field – this is a character or a logical combination of characters that represent a data item e.g. in a class list the Admno is a field.
- Records – this is a collection of related fields that represents a single entity e.g. student name, sex, age, marks etc.
- File – this is a collection of related records.
- Database – this holds all related files or tables.
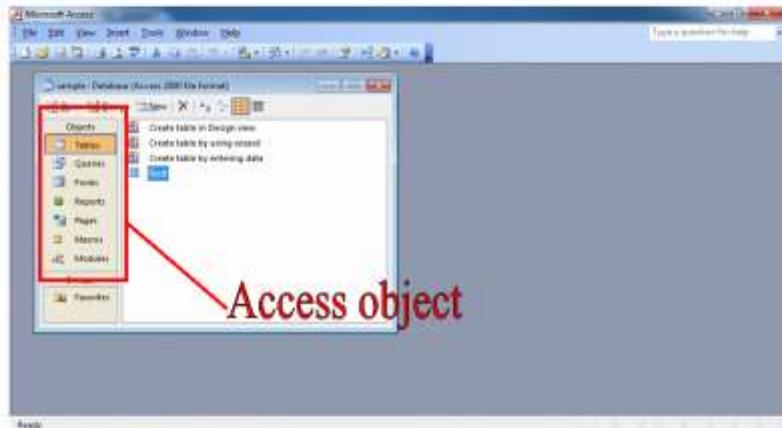
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Creating a database using MS-Access

1. Click "Start".
2. Point to "Programs/All Programs".
3. Point to "Microsoft Office".
4. Click "Access 2003" (application is opened).
5. On the task pane, click down arrow sign of click "Getting Started" (shortcut menu is displayed).
6. Select "New file".
7. Click "Blank database" (File New Database dialog box is displayed).
8. Select the location where you want to create the database from the arrow down list.
9. Type the name of database in the file name box.
10. Click "Create" button.

# Microsoft Access screen layout

Steps of "exiting from Access"

1. On the "File" menu.
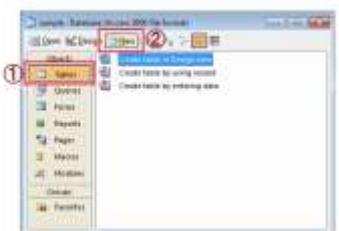
2. Click "Exit.

NB: shortcut key
    Alt+F4
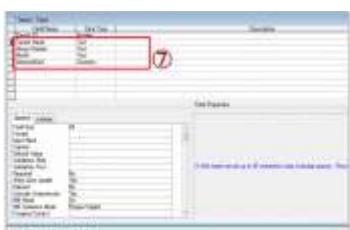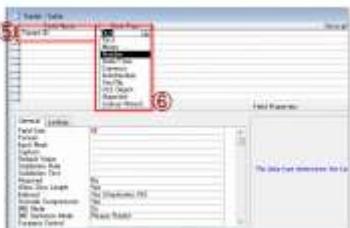
## Steps of "creating a table structure" 1

New Table dialog box

1. Click "Table" tab.
2. Click "New". (New Table dialog box is displayed).
3. Select "Design View" from the list.
4. Click "OK" button. (Table is displayed).

Steps of "creating a table structure" 2

5. Type a unique name for each field in the table.

6. Select "Data Type" from the down arrow list.

7. Add the other fields.

Steps of "creating a table structure" 3

Save As dialog box

Message dialog box

8. After you add in other fields, click "Save" button on the standard toolbar. (Save As dialog box is displayed).
9. Type the name of table in the "Table Name" box.
10. Click "OK" button. (Message box is displayed).
11. Access will ask you whether you want to create a "Primary Key", click "Yes".

Rules of a filed name in the table

- A field name must start with a letter and can be up to a maximum of 64 characters including letters, numbers, spaces and punctuation.

Field data types 1

- Text – it includes alphabetic letters, numbers, spaces, punctuation etc. This data type is used in field that needs no calculations.
- Number – this field is made up of numeric numbers 0-9 that are to be manipulated mathematically.
- Memo – this is made up of alphanumeric data used if you need to enter several paragraphs of text.
- Data/Time – identify a field either as date or time. 439

Field data types 2

- Currency – identify a numeric value that have decimals or fractions used when dealing with monetary values.
- Autonumber – it's a numeric value used if you want MS-Access to automatically increment the values in the field.
- Yes/No – it's a logical field where an entry is either a "Yes" or "No" "True" or "False". Ole object – this data type is used with graphical user interface application for inserting graphical objects. 440

Field properties settings

Table properties settings

- As you create more and more complex tables, you will find a need to use field properties to specify finer details related to fields and table entries expected. Field properties depend on the type of field selected. For example, when you click on a "Text" field, then the "General" tab, you will see properties associated to text data type as shown in figure right.

Field properties 1

- Field size – allow the user to set the number of characters in a field instead of the default 50 for text fields. For numeric fields integer, bytes, single, double or long integer is used.

- Format – determines how information appears on the screen and when printed e.g. you can format number to scientific, currency, % etc

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Field properties 2

- Decimal places – for number or currency fields you can specify the number of decimal place.

- Input mask – it automatically formats the field entry into specified format e.g. a number 02042426090 and the input mask is set as 000-(0000)-(0000) it will automatically display as 020-4242-6090. [443]

Field properties 3

- Caption – it's a more descriptive name for a field to be used in a table or a form display e.g. a caption Fname could be First name.

- Default value – this is a value that will appear automatically in the form if nothing is entered by the user to change it e.g. Date () automatically displays current date. [444]

Field properties 4

- Validation rule – it's a logical expression that restricts values to be entered in a field e.g. to restrict value entered in a field to be between 0 and 100 type > = 0 and < = 100.

- Validation text – this is message that appears once the validation rule is violated e.g. you may enter a validation rule for the above rule to display "Enter a number between 1 and 100"

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Field properties 5

- Required – Determines if an entry must be made in the field before you proceed to the next field or record.

- Allow zero length – allows the user to proceed without making any entry in the field set as zero length.

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Field properties 6

- Indexed – it facilitates the organisation of records for easy search.

- Primary key – it's a field that enforces uniqueness in a table so that one record is not entered twice.

- Index – this is a feature used to speed up search and sort operations in a table.
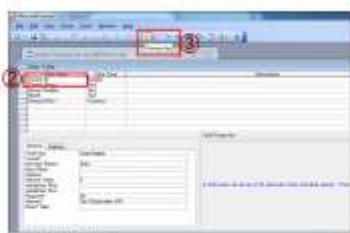
447

Primary key and indexes.

- An index is a key(s) used to speed up searching and sorting records in a table, while a primary key is an index that uniquely identifies each record stored in the table. A primary key prevents the user from making null or double entries into a table. Access uses the primary key to order records, and control redundancy. Once a field is set as primary key, the datasheet in automatically indexed or sorted using the primary key.
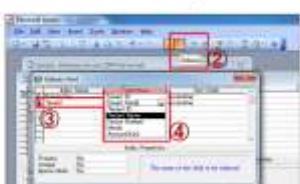
Steps of "set a primary key"

1. Open the table in design view.
2. Select the field you want to set as the primary key by clicking in the row header to the left the "Field Name".
3. Click "Set Primary Key" button on the tools bar.

Steps of "set another field as an index other than the primary key"

Indexes dialog box
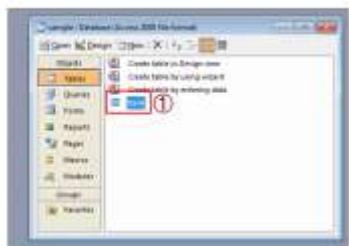
Indexes dialog box
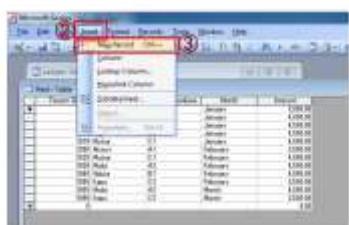
1. Open the table in design view.
2. Click "Indexes" button next to the primary key. (Indexes dialog box is displayed on the screen as shown in figure right above.
3. In the "Index Name" column, type the name of the index.
4. In the "Filed Name" column, select the corresponding fieldname.
5. In the "Sort Order" column, select "Ascending" or "Descending".
6. "Close" dialog box.

Steps of "adding new records"
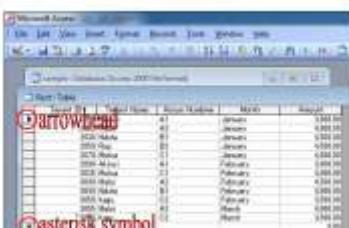
1. Double click the table icon. (the table is displayed in datasheet view".
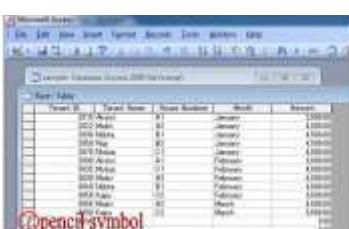
2. On the "Insert" menu.

3. Click "New Record".

Symbols of row header.

- An arrowhead indicates that no new data entry or edit is pending.
- Asterisk symbol marks a blank record below the current entry.
- Pencil symbol indicates that the current record entry is not yet saved.
- Record locked indicates that the current record is being edited by another user in a multi-user or networked environment.
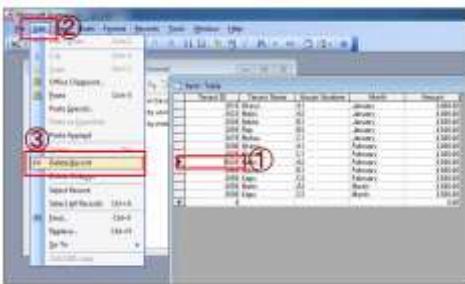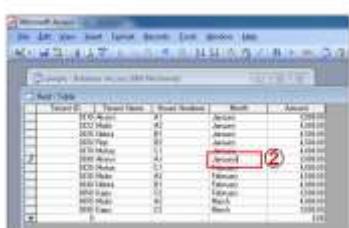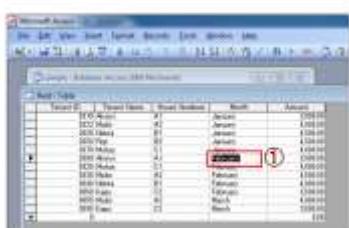
Steps of "deleting records"

1. Click the record you want to delete.

2. On the "Edit" menu.

3. Click "Delete".

Steps of "editing fields"

1. Double click the field you want to edit.

2. Replace the cell content.

Steps of "searching for records"

Find and Replace dialog box

1. On the "Edit" menu.
2. Click "Find".
3. In the "Find What" box, type the field to search.
4. Select other options for find "Look In", Match or etc.
5. Click "Find Next" button.

NB; shortcut key
Ctrl + F

Steps of "Replace a records"

Find and Replace dialog box

1. On the "Edit" menu.
2. Click "Replace" (Find and Replace dialog box is displayed).
3. In the "Find What" box, type the name of field to replace.
4. In the "Replace with" box, type field to replace with respectively.
5. Select other options for find "Look In", Match or etc.
6. Click "Replace" or "Replace All" button.

Steps of "copying records"
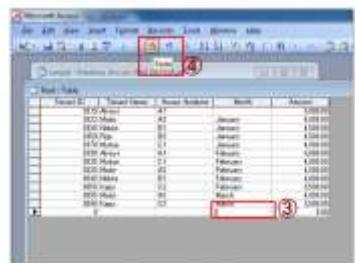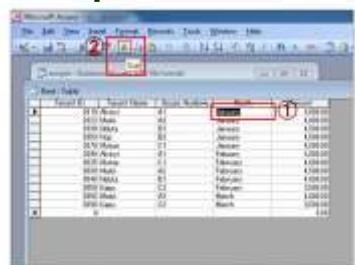
1. Select the record(s) to be copied.
2. On the "Edit" menu.
3. Click "Copy".
4. Select the target datasheet to copy.
5. On the "Edit" menu.
6. Click "Paste".

NB: shortcut key for "Copy"
   Ctrl + C
   shortcut key for "Paste"
   Ctrl + V
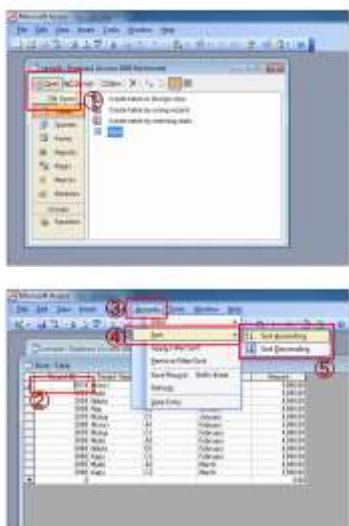
Steps of "moving records"

1. Select the record(s) to be moved.
2. Click "Cut command on the standard toolbar.
3. Select the target datasheet to move.
4. Click "Paste" command on the standard toolbar.
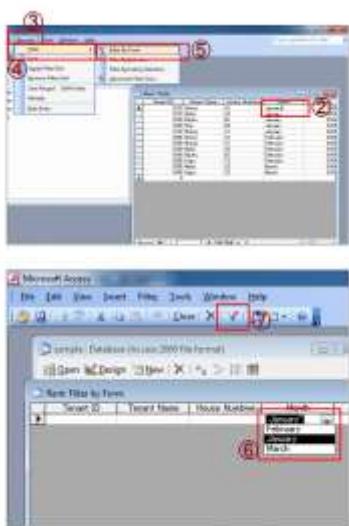
NB; shortcut key for move.
   Ctrl + X

Steps of "Sorting records"
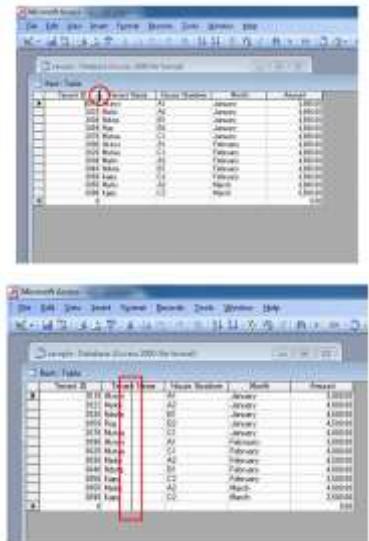
1. Open the table in datasheet view.
2. Select the records to be sorted.
3. On the "Record" menu.
4. Point to "Sort".
5. Click "Ascending" or "Descending".

# Steps of "Filtering records"
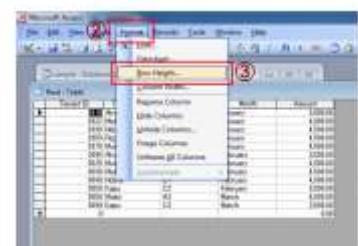
1. Open the table in datasheet view.
2. Select the records to be filtered.
3. On the "Record" menu.
4. Point to "Filter".
5. Select the type of filter you want to apply.
6. In the datasheet, click a down arrow of the field to set the filter option.
7. Click "Apply Filter" button on the toolbar.

Steps of "adjust the column size"
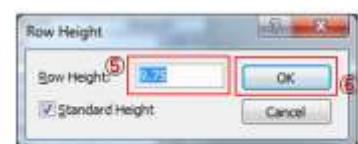
1. Point to the column border between the field's header. (mouse pointer sign will be changed to black cross sign).

2. Change the column size up to where you require using drag and drop.

Steps of "adjust the row height"
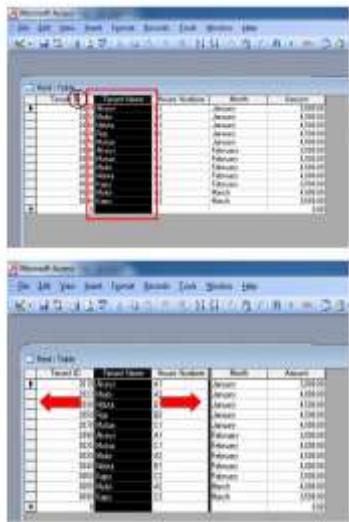

Row Height dialog box

1. Point to the border between two rows in the row header. (mouse pointer sign will be changed to black cross sign).

2. On the "Format" menu.

3. Click "Row height". (Row Height dialog box is displayed).

4. Delete current row height and type the new row height which you want to adjust.

5. Click "OK" button.

Steps of "reorder fields"

1. Select the column of the field you wish to move by pointing to the desired file name.

2. Drag the column right or left to the top of the field where you want your field to appear and then drop.

Modifying table structure

■ Once you create a table, you may need to add more fields, remove some fields, reorder the fields or change fields data types and properties. Before you modify the table it is important to save a copy to avoid losing everything in case you make a mistake.

■ If a table contains data and you make changes to the field data type, MS-Access may refuse to implement the changes. To avoid this problem, exit without saving and delete all the records from the table then return to the design view. You can then import a copy or copies of tables you backed up.

Steps of "make a copy of your table"

Save As dialog box (copy)

1. On the "File" menu.
2. Click "Save As/Export. (dialog box is displayed).
3. Choose whether to save to another (external) database or the current database.
4. Type a new name for your table.
5. Click "OK" button.

Steps of "modify the original table"
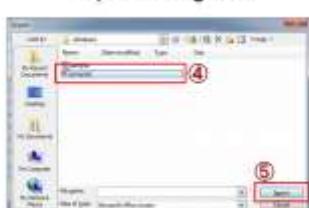
1. Open the table in design view.
2. Select the field or fields to be modified and make the necessary changes.
3. Click the "Save" button to save the changes.

Importing tables
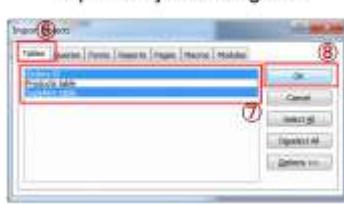
- You can import a table from another database or a spreadsheet into your database.

Steps of "import a table or a worksheet"

Import dialog box
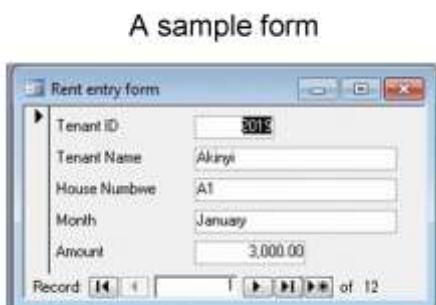
Import Object dialog box

1. On the "File" menu.
2. Point to "Get External Data".
3. Click "Import". (Import dialog box is displayed).
4. Select the database you wish to import data from.
5. Click "Import" button. (Object dialog box is displayed as shown in figure below).
6. Click "Table" tab.
7. Select the table(s) you wish to import.
8. Click "OK" button.

Form designs

A sample form

- A form is an interface that enables the user to view and make data entries into an underlying table more easily.
  - □ A **form** is designed using graphical objects called controls.
  - □ A **control** is an object such as textbox, checkbox, command button or shapes placed on form design grid to display data or perform actions. **469**

Types of controls

- Bound – in this the source of data is a field in a table or query.

- Unbound – this control is not connected to any data source.

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Form designer

Form designer

- You design or modify a form layout by dragging these controls to the required position. Figure right shows a form designer for a table called exam entry.

Creating a form layout using form wizard

- To create a form layout, you can either use the form wizard or start from scratch. Using the form wizard you can create either a columnar, a tabular a datasheet or a justified form layout.
  - Columnar form: the fields for each record are displayed down a column i.e. each value displays on a separate line with field labels to the left.
  - Tabular: records are displayed from left to right across the page and labels appear at the top of each column. Each row represents a new record.
  - Datasheet: the form resembles a table datasheet view.
  - Justified: one record occupies the whole form.

Steps of "create a form using the wizard" 1

New Form dialog box (Form Wizard)

1. Click "Form" tab.
2. Click "New". (New Form dialog box is displayed).
3. Select "Form Wizard".
4. Select the name of the table or query that includes the data you want to add into the form from down arrow list.
5. Click "OK" button.

Steps of "crating a form layout using form wizard" 2.

Form Wizard dialog box (step 1)

Form Wizard dialog box (step 2)

6. Select the fields to add into the form by clicking the ">" button or click ">>" to add all fields.
7. Click "Next" button.
8. Select the layout you wish to use "Columnar", Tabular" or etc.
9. Click "Next" button.

Steps of "crating a form layout using form wizard" 3

Form Wizard dialog box (step 3)

Form wizard dialog box (step 4)
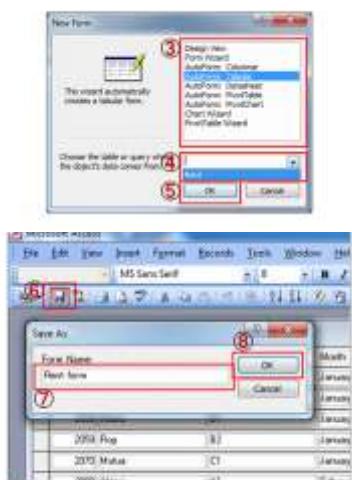
10. Select the style you wish to use "Blends", "Blueprint" or etc.
11. Click "Next" button.
12. Type the name of the form title in the box.
13. Click "Finish" button. (MS-Access will automatically display the form on the screen).

Creating a form using autoform wizard

- You can easily create a form using the "Autoform wizard". This wizard creates a form for you automatically by asking you very minimal questions. The form includes all the fields from the selected table.

Steps of "construct an autoform"

New Form dialog box (AutoFrom)

1. Click "Form" tab.
2. Click "New". "New Form dialog box is displayed).
3. Select autoform layout "Columnar", "Tabular" or etc.
4. In "Choose the table or query where the object data comes", select the table or query form from down arrow list you wish to create a form for.
5. Click "OK" button.
6. Click "Save" button on the toolbar. (Save As dialog box is displayed).
7. Type the name of the form.
8. Click "OK" button.
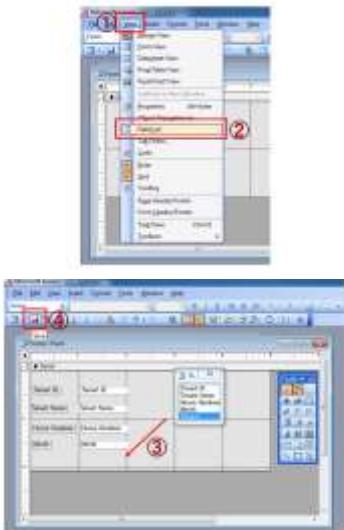
Steps of "creating a form from scratch"

New Form dialog box (Design View)
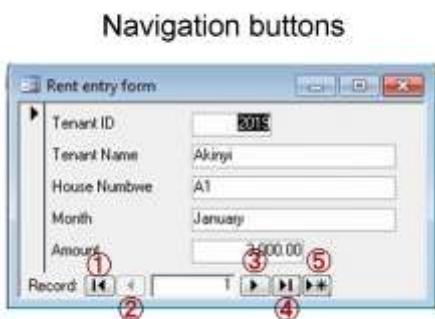
1. Click "From" tab.
2. Click "New". (New Form dialog box is displayed).
3. Select the "Design view" from the list.
4. In "Choose the table or query where the object data comes", select the table or query form from down arrow list you wish to create a form for.
5. Click "OK" button. (a form with controls for all fields is displayed).
6. Arrange the form as you want.

Steps of "add controls onto a form"

1. On the "View" menu.
2. Click "Field list". (the field of the table you selected is displayed).
3. Drag and drop each field and arrange them on the grid.
4. Click "Save" command on the toolbar.

Adding and displaying records

Navigation buttons

- The form provides the user with navigation buttons located at the bottom that can be used to navigate the form as shown in figure below. The functions of the buttons can be summarized from left to right as follows:
  1. Displays the first record in the table.
  2. Displays the previous record.
  3. Displays the next record.
  4. Displays the last record.
  5. Used to add a new record.

Steps of "format controls on a form" (resize)

1. Open the form in design view.
2. Select the field which you want to resize. (place holders are displayed around field).
3. Place the mouse pointer on the place holder. (mouse pointer sign will be changed to a double-sided arrow sign).
4. Resize using drag and drop.

Using queries

- Queries are the fastest way to search for information in a database. It also enables the user display specific records and also perform calculations on field from tables.

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Types of queries

- Select query – most commonly used, it is used for searching and analysing data in one or more tables. It lets the user specify the search criteria.

- Action query – these are used to make changes to many records once.

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Types of action queries

- Update – updates data in table.
- Append query – adds data in a table from one or more tables.
- Make table query – creates a new table from a dynast.
- Delete query – deletes specified records from one or more tables.

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Steps of "creating a select query using wizard" 1

New Query dialog box

Simple Query Wizard dialog box (step 1)

1. Click "Queries" tab.
2. Click "New". (New query dialog box is displayed).
3. Click "Simple Query Wizard".
4. Click "OK" button.
5. Select the name of the table or query that includes the data you want to add into the query from down arrow list.
6. Select the fields to add into the query by clicking the ">" button or click ">>" to add all fields.
7. Click "Next" button.

Steps of "creating a select query wizard 2"

Simple Query Wizard (step 2)

Simple Query Wizard (step 3)
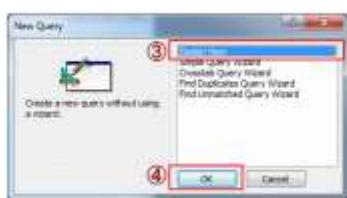
7. Select "Detail" or "Summary".

8. Click "Next" button.

9. Type the title name of query in the box.

10. Click "Finish" button.

Steps of "creating a select query from in design view" 1

New Query dialog box (Design view)
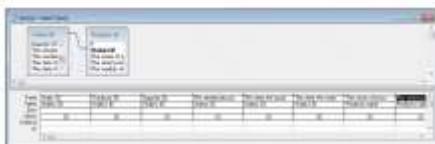
Show Table dialog box (design view)

1. Click "Queries" tab.
2. Click "New". (New query dialog box is displayed).
3. Select "Design View".
4. Click "OK" button. (Show Table dialog box is displayed).
5. Select table, query or both which you want to add into the query from each tab.
6. Click "Add" button.
7. After you add, click "Close" button.

Steps of "creating a select query from in design view" 2

Query By Example design grid

- The query design grid opens. In MS-Access it is called "*Query-By-Example*" (QBE). This lets the user to design a query. Figure right is QBE grid for a table called *Exam*.

Parts of the query grid

- *Field row* – fields from a table or tables to be used are arranged in this row. Each field should occupy its column.
- *Table row* – indicates the table providing the fields.
- *Sort row* – by clicking the down arrow in the sort cell, you can specify the sort order i.e. *ascending, descending* or *not sort.*
- *Show row* – by clicking the Show box, you specify whether to display the field in the query results. When the box is not checked, the field will not be displayed.
- *Criteria row* – this is where you type conditional statement that will be used by the query to display specific records.
- *Or row* – used to specify an alternative condition e.g. if you want to display records with a field called *City*, with items *Nairobi* or *Embu*, type *Nairobi* in criteria cell and *Embu* in the Or cell.

Specifying the criteria search

- To search for a particular set of records, the users have to enter a conditional statement in the criteria row. For example if you have a table called employees with one of the fields as *salary*, you can display all the employees earning more than Shs. 5,000 by typing>5000 in the criteria row, salary column.

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Other examples of specifying the criteria search 1

- To define criteria, use either relational or logical operators. Relational operators include less than (<), greater than (>), greater than or equal to (>=), less than or equal to (<=), not equal to (<>) and equal to (=). Logical operators include AND, OR and NOT.
- Use AND to display values in a specific range. For example, to display records from the employees table with salaries above 4000 but less than 6000, type, *>4000 AND <6000* on the criteria row in the salary column. All the employees who meet this condition will be displayed.
- Use *OR* if you wish to get either one of two values. For example, if you wish to get those employees either in Nairobi OR Embu.

Other examples of specifying the criteria search 2

- If you want to display data in a particular range, use the word *Between*. For example, instead of typing, *>4000 AND <6000*, type Between 4000 And 6000.
- If you want to list all records except those that you do not want to see, use *NOT*. For example, if you type NOT 6000 in the salary column of the employees table, all employees records will be displayed except those with their salary as 6000.
- To display records you are not sure of the field name but at least you can remember a few characters, use *LIKE* and the *wildcards*. *Wildcards* are special symbols mostly an asterisk and a question mark used in place of other characters. For example, to display all names starting with "Sm" followed by any other character, type Like Sm? Like */*/1993 lists records created in 1993 regardless of the day or month.

Steps of "add fields into the query grid"

1. Open the query in design view.

2. From the field list of the underlying table, drag each field and place it in the field row.

Steps of "saving the query"

Save command on the toolbar
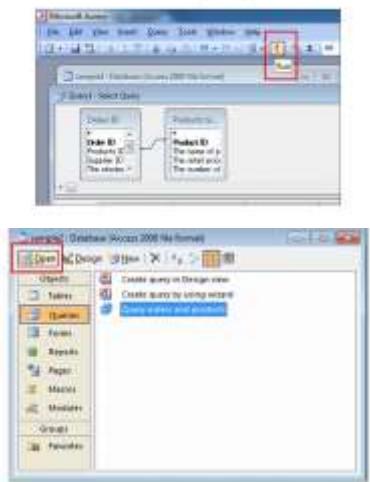
1. Click "Save" button on the toolbar or from the "File" menu. (Save As dialog box is displayed).

Save As dialog box (query)

2. Type name of the query in the box.

3. Click "OK" button.

Steps of "running the query"

Run a query
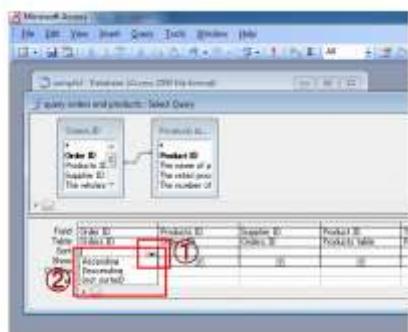
- Click "Run" button on the toolbar as shown in figure right above or "*Run*" command from the "*Query*" menu. (results of the query is displayed).
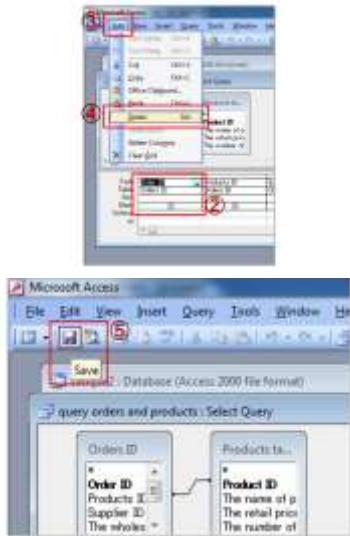
NB: you can also view the results of your query any other time by selecting the query, then click "Open" button from the database window.

Steps of "sorting the dynaset"

1. Click the down arrow button of the "Sort". (list is displayed).

2. Select "*ascending*" or "*descending*".
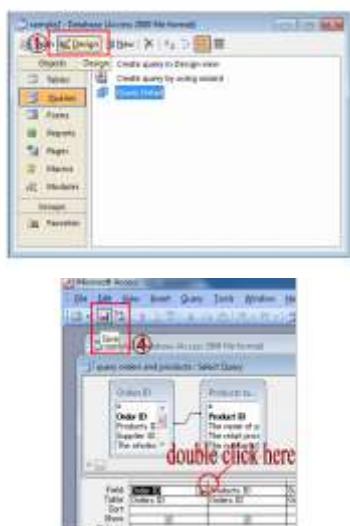
Steps of "delete fields from the query grid"
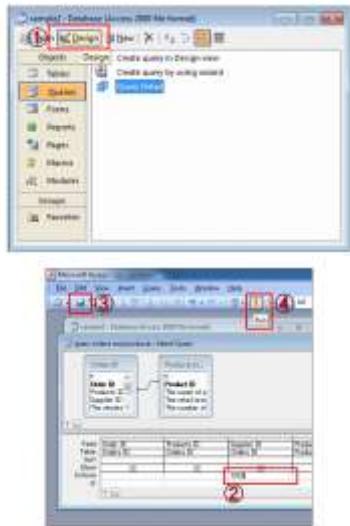
1. Open the query in design view.
2. Select the field column you wish to delete.
3. On the "Edit" menu.
4. Click "Delete".
5. After you delete, click "Save" command on the toolbar to save the changes.

Steps of "adjust the column size in a query"

1. Open the query in design view.
2. Position the mouse pointer at the boundary that separates columns. (mouse pointer sign will be changed block cross sign).
3. Double click on the boundary to autofit cell content.
4. Click "Save" command on the toolbar to save the changes.

Steps of "modify a criteria statement, select query"

1. Open the query in design view.
2. Select the field of criteria which you want to modify, then change the criteria statement as you desire.
3. Click "Save" command on the toolbar to save changes.
4. Click "Run" command to display the results of the query for test whether the changes have been effected.

Performing calculations in a query.

- Unlike tables, queries let the user perform mathematical calculations on numeric data. You can perform calculations in a query by;

  A) Creating basic formulae – to create a formula that calculates the total marks in an underlying table e.g. *Exams* table.

  B) Using Total functions – with a query, you can analyze all record fields using the inbuilt functions such as *Sum, Average, Minimum* and *Maximum* etc.

Steps of "creating basic formulae"

Creating a calculated field
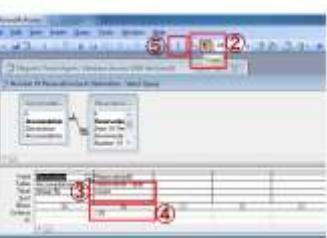
results of a calculated field

1. Open the query in design view.
2. In an empty cell, type an *expression* that includes a field name of each as *"Amount: [Quantity] * [Unit Price]* as shown in figure right above.
3. Click "Save" command on the toolbar.
4. Click "Run" command on the toolbar. (the results of the calculations is displayed).

Steps of "use the total functions"

Sample of use total function

1. Open the query in design view.
2. Click "Totals" command on the tool bar. (Totals row is displayed which is located between "Table" row and "Sort" row).
3. For each field to be analyzed, click its cell in the "Total" row, and then select any of the functions from arrow down list of "Total" row.
4. Set criteria and other options.
5. Click "Run" command on the toolbar to preview the results.
6. Click "Save" command to save the changes.

Steps of "printing a query"

Print dialog box

1. Click "Queries" tab.
2. Open the query in datasheet view you want to print.
3. On the "File" menu.
4. Click "Print".
5. Select the printer from arrow down list.
6. Set the other printing options.
7. Click "OK" button.

Relationship in tables
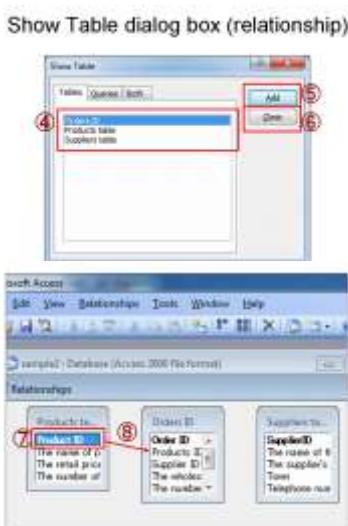
- Entity – an entity is a thing or object of significance, whether real or imagined, about which information needs to be known or held.
- Attribute – an attribute is any detail that serves to qualify, identify, classify, quantify or express the state of an entity.
- Candidate key – it's any attribute or set of attributes can be used to uniquely identify a row in a table.

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Types of relationships

- One-to-one relationship – for a particular field in one table there is only one matching record in the related table.

- One-to-many relationship – for a particular field in one table there are several matching records in another table.

- Many-to-many relationship – for particular records in one table there are several matching records in the other table.
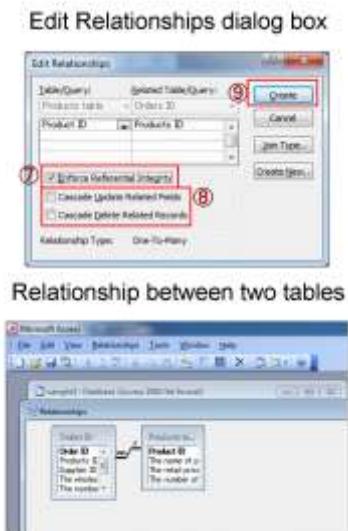
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Steps of "defining relationship between tables" 1

Show Table dialog box (relationship)

1. Open the database.
2. On the "Tools" menu.
3. Click "Relationship. (Show Table dialog box in Relationship is displayed).
4. Select the table from Table tab.
5. Click "Add" button.
6. After you add, click "Close" button.
7. Click the field of first table which you want to create relationship.
8. Drag it to the second table then drop. (Edit Relation ship dialog box is displayed).

Steps of "defining relationship between tables" 2

Edit Relationships dialog box

Relationship between two tables
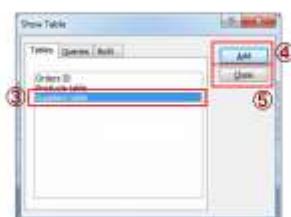
7. Make sure "*Enforce Referential Integrity*" is checked to ensure that all records entered in the related table exist in the primary table.
8. Set other options if you want.
9. Click "Create" button. (Black line is displayed between two tables).

NB; the field used to create the relationship must be of the same type and properties.

Steps of "create a query based on related tables"
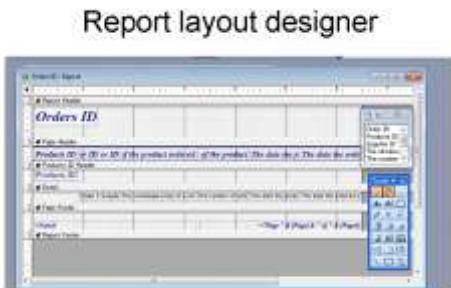
Show Table dialog box (query based)

1. Open the query in design view.
2. Click "Show Table" command on the toolbar. (Show Table dialog box is displayed).
3. Select the tables you want to base your query on.
4. Click "Add" button. (query is displayed).
5. After you add, click "Close" button.
6. Click the field of first table which you want to create relationship.
7. Drag it to the second table then drop. (Edit Relation ship dialog box is displayed).
8. Click "Run" command to run.
9. Click "Save" command to save.

Creating reports

Report layout designer

- Like in forms, a report layout is also designed by placing controls on to the report designer as shown in figure right.

Parts of a report

- Report header – this contains unbound controls that displays title of the report.
- Page header – contains heading or labels data items to be displayed in every column.
  Detail – holds bound controls that display data items for the table or query it was created from.
- Detail – holds bound controls that display data items for the table or query it was created from.
- Page footer – holds a control that is to be displayed on every page such as the page number and date. For example =*Now()* displays the current date and time as set in the system clock.
- Report footer – used to display summary from a report such as the grand total for numerical data in a particular field column.

Creating a report

- Using wizard
  - Just like the form wizard, report wizard takes the user through a number of steps by answering a few questions and MS-Access automatically does the rest.
- In design view
  - Just like with forms, you can create a report in design view by placing control on the report design grid.

Steps of "create a report layout using wizard" 1

New Report dialog box (wizard)

1. Click "Report" tab.

2. Click "New". (New Report dialog box is displayed).

3. Select "Report Wizard".

4. Click "OK" button.

Steps of "create a report layout using wizard" 2

Report Wizard dialog box (step 1)

Report Wizard dialog box (step 2)

5. Select the name of the table or query that includes the data you want to add into the report from down arrow list.
6. Select the fields to add into the report by clicking the ">" button or click ">>" to add all fields.
7. Click "Next" button.
8. Select the field If you want to add grouping.
9. Click ">" button to add.
10. Change the priority using arrow sign button if you want.
11. Click "Next" button.

Steps of "create a report layout using wizard" 3

Report Wizard dialog box step 3

Summary Options dialog box
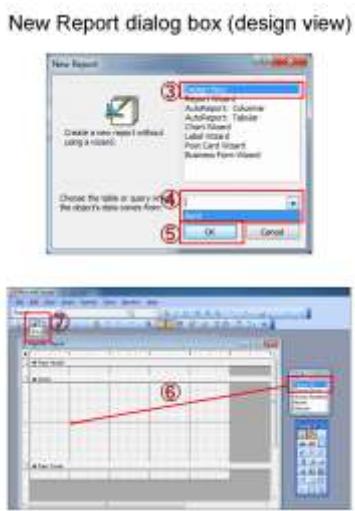
12. Select the field from down arrow list if you want to sort the records.
13. Select "Ascending" or "Descending".
14. Click "Summary Options" button.
15. Click the check box if you want to perform calculations on numerical fields e.g. Sum, Average or etc.
16. Click "OK" button.
17. Click "Next" button.

Steps of "create a report layout using wizard" 4

Report Wizard dialog box (step 4)

Report Wizard dialog box (step 5)

Report Wizard dialog box (step 6)

18. Select the type of layout from the list.
19. Select orientation "Portrait" or "Landscape".
20. Click "Next" button.
21. Select the type of style form the list.
22. Click "Next" button.
23. Type the name of report title in the box.
24. Click "Finish" button.
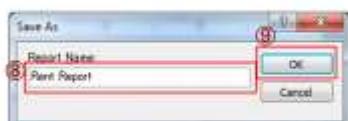
Steps of "creating a report in design view" 1

New Report dialog box (design view)

1. Click "Report" tab.
2. Click "New". (New Report dialog box is displayed).
3. Select "Design View".
4. In "Choose the table or query where the object data comes", select the table or query form from down arrow list you wish to create a form for..
5. Click "OK" button. (Report design grid is displayed).
6. Drag each field from the field list to the layout grid and drop it where you want the data column to appear.
7. After you place, click "Save" command on the toolbar. (Save As dialog box is displayed).

Steps of "creating a report in design view" 2
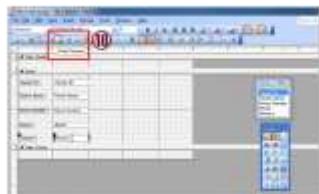
Save As dialog box (report)

8. Type the name of the report.

9. Click "OK" button.

Print Preview command on the toolbar

10. Click "Print Preview" button to view the report.

Steps of "modifying a report layout"

1. Open the report in design view.
2. Click report header or footer you want to modify.
3. Make the necessary changes.
4. Click "Save" command on the toolbar to save the changes.
5. Click "Print Preview" command on the toolbar to view the changes.

Print Preview window (report)

Steps of "add more controls onto the report layout"

1. Open the report in design view.
2. Click "Field List" command on the toolbar. (field list is displayed).
3. Select one or more fields in the field list.
4. Add field to design grid using drag and drop and adjust the field as you wish.
5. Click "Save" command on the toolbar to save the changes.
6. Click "Print Preview" command on the toolbar to view the changes.
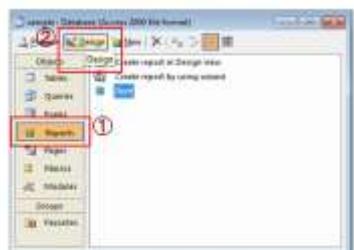
Sample of added control report

Steps of "resize a control"

1. Click "Report" tab.
2. Open the report in design view.
3. Select the control you want to resize. (place holders are displayed around control).
4. Place the mouse pointer on the place holder. (mouse pointer sign will be changed to a double-sided arrow sign).
5. Drag the mouse pointer to resize the control.

Steps of "move a control"

1. Click "Report" tab.
2. Open the report in design view.
3. Select the control you want to resize. (place holders are displayed around control).
4. Place the mouse pointer on the place holder until its sign is changed to a hand sign.
5. Drag the mouse pointer to move the control.

Creating labels

- A label is a sticker or piece of paper put on an item for the purpose of identification. Examples of stickers are mailing labels, label on the floppy disk where you write your name etc. Using the report label wizard, MS-Access lets you easily create labels of different sizes.

Steps of "create a label using the report wizard"

New Report dialog box (Label wizard)

1. Click the "Report" tab.
2. Click "New". (New Report dialog box is displayed).
3. Select "Label Wizard" from the list.
4. In "Choose the table or query where the object data comes", select the table or query form from down arrow list you wish to create a form for.
5. Click "OK" button. (Report design grid is displayed).
6. Select the size of label you want to create.
7. Click "Next" button.

Label Wizard dialog box (step 1)

Steps of "creating a label using the report wizard" 2

Label Wizard dialog box (step 2)

8. Select font type, size, weight and color.

9. Click "Next" button.

10. Select mailing labels from available field by clicking ">" button.

Label Wizard dialog box (step 3)

11. Click "Next" button.

Steps of "creating a label using the report wizard" 3

Label Wizard dialog box (step 4)

12. Sort labels if you want by clicking ">" button or click ">>" button.
13. Click "Next" button.

Label Wizard dialog box (step 5)

14. Type the name of the label in the box.
15. Click "Finish" button.

Modifying labels

- Just as you can modify a report or a form, you can also modify a label by manipulating the layout controls

Steps of "modify a label"

1. Click "Report" tab.
2. Click "Design" button. (the label is displayed in design view).
3. Edit the layout as desired
4. After you modify, click "Save" command on the toolbar.
5. Close the design grid.
6. Click "Print Preview" command on the toolbar to view.

Printing the reports and labels

- Before you print a report or a label, you should first set the page options i.e. the margins, paper size and orientation.

Steps of "printing the reports and labels"

Print dialog box (reports and labels)
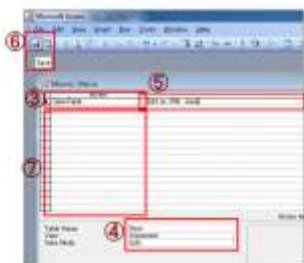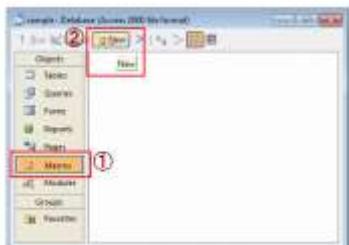
1. Click "Report" tab.
2. Select the report you want to print.
3. Click "Preview" button. (Print Preview window is displayed).
4. On the "File" menu.
5. Click "Print" (Print dialog box is displayed).
6. Select the printer from down arrow list.
7. Set other options i.e. print range and number of copies.
8. Click "OK" button.

Creating macros

- A macro is a set of one or more actions used to automatically perform particular operations such as opening a form or printing and a report. Macros are used to automate database applications.

Steps of "creating macros" 1

1. Click "Macros" tab.
2. Click "New" button. (Macro window is displayed).
3. Add an action e.g. OpenTable into action column from down arrow list.
4. In the lower part, specify arguments for the action in Action Argument box.
5. Type optional comment for the action if you need.
6. Add more actions to the macro if you want. Actions are executed in the order you list them.
7. Click "Save" command on the toolbar to save the macro.

Steps of "creating macros" 2
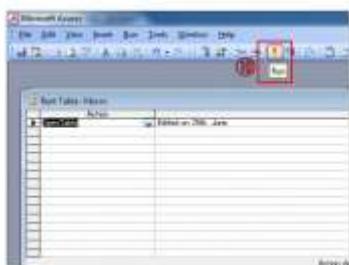
Save As dialog box (Macros)

8. Type the name of macro in the box.

9. Click "OK" button.

10. Click "Run" command on the toolbar to open the macro.

Enforcing database security

- MS-Access provides the user with several data security tools.
  - A) Password protection – requests the password for opening.
  - B) Encryption – compacts a database file and makes in indecipherable by a utility program or a word processor especially on a networked environment. Encrypting a database doesn't restrict access to objects by users.
  - C) Hiding database object – hide tables, queries, forms and reports and macros from casual users. This method of protection is the least secure because it is possible to unhide the objects.
  - D) User-level security – this is the most extensive security method especially on a multi-user environment. A database administrator can grant specific users or groups specific permissions and privileges to tables, queries, forms. Reports and macros.

Steps of "setup a password in MS-Access" 1
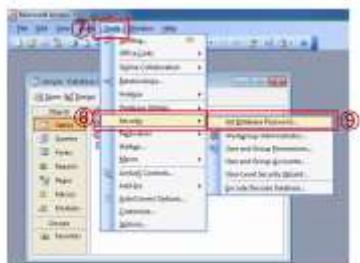
Open dialog box
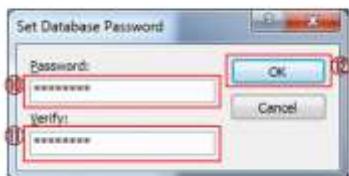
1. Open MS-Access.
2. On the "File" menu.
3. Click "Open" (Open dialog box is displayed).
4. Click arrow down sign of "Open" button. (open menu is displayed).
5. Open the database in exclusive mode which you want to set a password. (Security Warning dialog box is displayed).
6. Click "Open" button.

Steps of "setup a password in MS-Access" 2
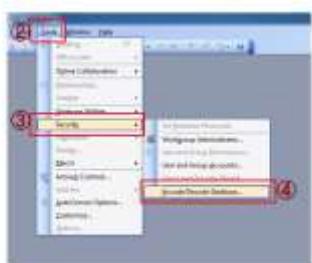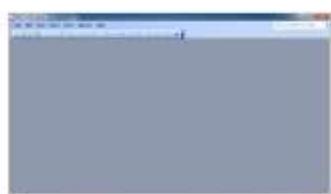

Set Database Password dialog box

7. On the "Tool" menu.
8. Point to "Security".
9. Click "Set Database Password". (Set a Password dialog box is displayed).
10. Type the unique password in the box.
11. Re-type the unique password in the "Verify" box.
12. Click "OK" button.

# Steps of "encrypt a database" 1

Start MS-Access without opening
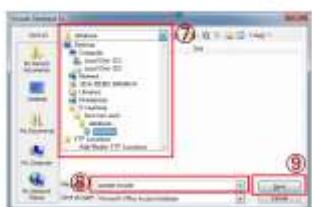
1. Start MS-Access without opening a database because you can't encrypt or decrypt a database when it is open.
2. On the "Tools" menu.
3. Point to "Security".
4. Click "Encode/Decode Database" (Encode/Decode Database dialog box is displayed).

Steps of "Encrypt a database" 2

Encode/Decode Database dialog box

5. Select the database you want to encode or decode.
6. Click "OK" button. (Encode Database dialog box is displayed).
7. Select the location from down arrow list to save.
8. Type the file name in the "Name box.
9. Click "OK" button.

Encode Database As dialog box

Steps of "hide object"
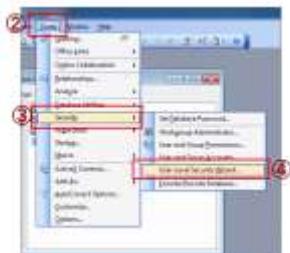
1. On the "View" menu.
2. Click "Properties". (Properties dialog box is displayed).
3. Check in the "Hidden" box.
4. Click "Apply" button.
5. Click "OK" button.

Properties dialog box

Steps of "assign user rights and privileges" 1

Security Wizard dialog box (step 1)

1. Open the database.
2. On the "Tools" menu.
3. Point to "Security".
4. Click "User-Level Security Wizard". (Security Wizard dialog box is displayed).
5. Click "Next" button.

Steps of "assign user rights and privileges" 2

Security Wizard dialog box (step 2)

Select a workgroup file dialog box

6. Click "Browse" button. (Select a workgroup file dialog box is displayed).
7. Select the location from shortcut keys.
8. Type the name of file in the box.
9. Click "Select" button.
10. Type the unique "WID" (workgroup ID) in the box.
11. Click "Next" button.

Steps of "assign user rights and privileges" 2

Security Wizard dialog box (step 3)

Security Wizard dialog box (step 4)

12. Check in the boxes which you want to select the database to help source from each tab.

13. Click "Next" button.

14. Check in the box which you want to include in your workgroup information file.

15. Type "Group ID" in the box each groups.

16. Click "Next" button.

Steps of "assign user rights and privileges" 3

Security Wizard dialog box (step 5)

Security Wizard dialog box (step 6)

17. Select "Yes" or "No" to grant the users group some permission. If you select "Yes", you can set some option from each tab.

18. Click "Next" button".

19. You can add users to your workgroup information file. If you want to add, type "User name', "Password" and 'PID" (personal ID) in the each box.

20. Click "Next" button.

Steps of "assign user rights and privileges" 3

Security Wizard dialog box (step 7)

21. Select "Select a user and assign the user to groups" or "Select a group and assign users to the group".
22. Click "Next" button.
23. Click "Browse" button. (Choose a database name dialog box is displayed).
24. Select the location from down arrow list to save.
25. Type the "File name" in the box.
26. Click "Select" button.
27. Click "OK" button.

Security Wizard dialog box (step 8)   Choose a database name dialog box
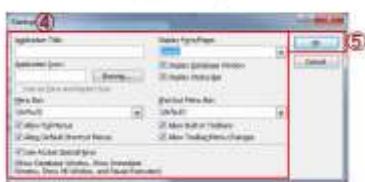
Setting up startup options

- To customize your database application workplace, there is need to specify how the database is to be loaded.

Steps of "set the startup options"

Startup dialog box

1. On the "Tools" menu.
2. Click "Startup". (Startup dialog box is displayed).
3. Set startup options e.g. "Application Title", "Application Icon" or etc.
4. Click "OK" button.

Review questions 1

1. What is a relational database management system?
2. Define the following terms: table, records and field as used in databases.
3. State six major objects used to manipulate data in MS-Access.
4. Explain how you can start and exit MS-Access.
5. In MS-Access, what do the following terms refer to: query, macro, module.

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Answer of review questions 1

1. A relational database is a model where information is stored in related structures called tables or relations.
2. Table: a structure used to store related records.
   Records: related field that represents a single item or entity.
   Field: logical combination of characters that can be manipulated as a unit.
3. Objects which help the user easily manipulate and manage data in a database include:
   - Tables, forms, queries, reports, macros, modules.
4. To start MS-Access, click start, point to programs then click MS-Access. To exit, click file then exit or simply click the close button on the title bar.
5. Query: a database feature used to analyse data in a table.
   Macro: a feature used to automate database operations.
   Module: a programming environment embedded in MS-Access used to automate database operations.

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Review questions 2

1. Differentiate between a primary key and an index.
2. What is normalization in reference to tables?
3. Describe various data types used in MS-Access.
4. Explain how you would set a validation rule when designing tables.
5. What are field properties?
6. What is the difference between a field name and a caption?

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Answer of review questions 2

1. Primary key – unique field used to identify each record uniquely for easy access and manipulation.
   An index – a key not necessarily unique used to arrange data in a table.
2. Normalisation – a technique used to make a complex database more efficient by breaking one large table into smaller related tables.
3. Text, number, date/time, logical (yes/no), etc.
4. Setting validation rule:
   A) Select the field you want to set validation rule to.
   B) In the field properties section, click the insertion pointer in the validation rule cell.
   C) Type in the validation rule e.g. BETWEN 0 AND 100.
5. Field properties – characteristics of a field such as size, format, etc.
6. Field name is a combination of characters that identifies a data item whereas a caption is a full desc

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Review questions 3

1. Define the following terms:
   A) Form;
   B) Bound and unbound control;
2. Differentiate between tabular and columnar form layout.
3. Explain how you would create a form without using a form wizard.
4. Why would one prefer to use a form for data input rather than entering directly into a table?
5. Explain how you would move from one record to another in a form.
6. Draw a simple sketch of a form that can be used to enter all subjects marks in an examination database.

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Answer of review questions 3

1. Form – user interface that helps the user view records and easily make entries into a table.
   Bound controls – data field in a form layout grid that is used to display data from the underlying table query.
   Unbound control – data field in a form layout grid that is not based on any data source.
2. Columnar form – display one record at a time with the fields arranged downwards.
   Tabular form – records are displayed across the screen from right to left.
3. Click the design view from new form dialog box to display the form design grid.
4. To provide an interface that let the user enter and view data easily.
5. Using the navigation button.
6. Student to use a word processor to sketch the form layout.

Review questions 4

1. Explain two tools you can use to search for data in a database.
2. What is Referential Integrity?
3. Differentiate between a table and a query.
4. Write down the criteria you would use to display employees' details from a payroll database who earn between 90,000 and 240,000.
5. Explain how you would sort data in a query.
6. What is the difference between an action query and a select query?
7. Explain what happens when you try to enter invalid data into a related table for which referential integrity has been reinforced.
8. Explain how you would create a select query that would be used to calculate your total score and average in ten subjects.

Answer of review questions 4

1. Query and find command.
2. A feature used to eliminate chances of entering non existing data into child table., that do not exist in the primary table.
3. A table is a structure used to store related records while a query is a component used to analyse data in a table.
4. Between 90,000 and 240,000.
5. 1). Click the cell that you want to use to sort a query in the sort row.
   2). From the drop down list, select the sort order, i.e. descending or ascending order.
6. Select query is used to search and analyse data in a table while action query is used to make changes to underlying query or table.
7. Access gives a warning message and denies the user from entering the next record.
8. Insert the totals function in a query then select SUM and AVG.

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Revision questions

1. What is the importance of a report generated from a database?
2. What is the difference between a report and a label?
3. Explain how you would create a report that displays subtotals and grand totals.
4. Dr. Garaya is a pharmacist. She wants to generate labels that she can use to stick to medicine bottles. Explain to her how she can generate labels of different sizes using MS-Access database.
5. Assuming you have been appointed as the sales representative of an insurance company, explain how you would create annual reports that would include the company logo at the top of every page.

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Answer of revision questions

1. Report – used to give a summarised information for the purpose of presentation.
2. A report gives a summarised information for the purpose of presentation while a label is a sticker placed on an item for the purpose of identification or description.
3. To create a report that displays subtotals and grand totals, click summary options button in the report wizard or create calculated controls in the report design grid in the grouping field footer and report footer respectively.
4. Macros and modules.
5. See creating reports. To insert logo and drop it in the page header in the report design grid.

Practical activity 1

Field Name	Data Type
ID Number	Text
Last name	Text
First name	Text
Address	Text
Town	Text
Company	Text
Date	Dates/Time
Salary	Currency
Married?	Yes/No

- Create a database called Employees and in it create a table called customers with the right fields:
  a. Save the Table as CUSTOMER.
  b. In the description column, which is optional, describe what each field is for, e.g. ID Number is the number that identifies each employee uniquely.

Practical activity 2

Field	Data type	Size
DVD_Code	Alphanumeric	8
Title	Text	20
PurchasePrice	Currency	Fixed
SalePrice		Fixed
Quantity	Number	
Datebought		Medium

A) In the database, create a table called **DVDs** with the right attributes:

B) Determine the following in A above.
   i. The primary key;
   ii. The missing data types and properties;
   iii. Field captions.

C) Enter **ten** records into the table. 557

Practical activity 3-1

Field name	Data type
Student number	Text
First name	Text
Last name	Text
Maths	Number
Physics	Number
Chemistry	Number
Computer Science	Number
Total	Number
Position	Number
Reporting Date	Date/Time

- Create a table named *Exams* in a *COLLEGE* database with the fields: 558

Practical activity 3-2

- Set the Student number as the primary key. Using a data form, enter data for five students as follows.

Student No.	MATHS	PHY	CHEM	COMPUTER
2001	40	50	40	90
1983	60	70	57	30
2002	80	30	37	70
1513	30	63	80	70

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Practical activity 3-3

- Without using the form wizard, create a form for the exams table such that the format is displayed as below:

Student Name ………. Student Name ………. Total ……….
Position ……….
Reporting Date ……….

Subject	Average Marks
Maths	……….
Physics	……….
Chemistry	……….
Computer	………..

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Practical activity 4-1

- You Are the database manager, Riceland SACCO society and you are expected to create a database called Riceland.

1. Design two tables in the database, employees and bill with the following fields:

Employees table:
PNo (primary key)
National ID
First Name
Last Name
Date Employed
Salary
Sex

Bill table:
PNo (foreign key)
Bill No (primary key)
Bill Date
Bill Amount

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Practical activity 4-2

- Enter the following records in the employees' table:

PNo	National ID	First Name	Last Name	Date Employed	Salary	Sex
201	12234	Ali	Mohamed	16-3-2002	40000	M
203	22734	Alice	Korir	16-5-2002	37000	F
207	22734	Daniel	Karimi	16-3-2003	60000	M
208	12234	Pateicia	Atieno	16-3-2004	38000	F

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Practical activity 4-3

- Enter the following records in the bills table

PNo	Bill No	Date Employed	Salary
201	1100	9-7-2004	3,000
203	1200	16-7-2004	7,000
201	2000	24-7-2004	2,000
208	1340	16-6-2004	800
204	1430	18-7-2004	1,700

Explain why duplicate PNo is acceptable in Bills table and not in the employees' table 563

Practical activity 4-4

- Create a calculated query based on the two tables that will calculate and display the following:

A) The total bill for Joe in the month of January

B) The total bill for all the employees.

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Practical activity 5

1. Open the Riceland database and generate a report that displays the following:
   1. Employee name, the gross salary, allowances and the net pay.
   2. Subtotals and grand totals for all the employees.
   3. The current date and time.
2. You have been requested by the School Principal to create a school database that includes the following:
   1. Four departments (Maths, Science, Humanities and Technical subjects);
   2. Members of staff in each department;
   3. Subjects offered in a department.
      1. From the database, generate a grouped report for all members of staff in each department.
      2. Create labels to be placed at the door of every head of department's office.

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Chapter 6
Desk Top Publishing (DTP)

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Introduction

- Desktop publishing is application software used in producing publication work within the computer framework of art and design. Microsoft Publisher is gaining ground due to its ease of use like other Microsoft Office programs.

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Samples of publication

Examples of publications

- Cards
- Posters
- Brochures

- Newspaper
- Calendars
- Newsletter etc.

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Desktop publishing can be used in

- Designing texts and images
- Producing publications
- Creating illustrations
- Editing texts and graphics
- Composing templates

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Purpose of desktop publisher

- Graphics design – a typesetter can create and edit very complex text and graphical objects like pictures to finest details.
- Page layout design – the user can be able to design a page layout by setting consistent picture and objects locations dividing page in a number of columns and creating layer.
- Printing – the main purpose of desktop publisher is to produce publications, therefore it helps the user prepare what is referred to as an artwork in commercial circles for printing.

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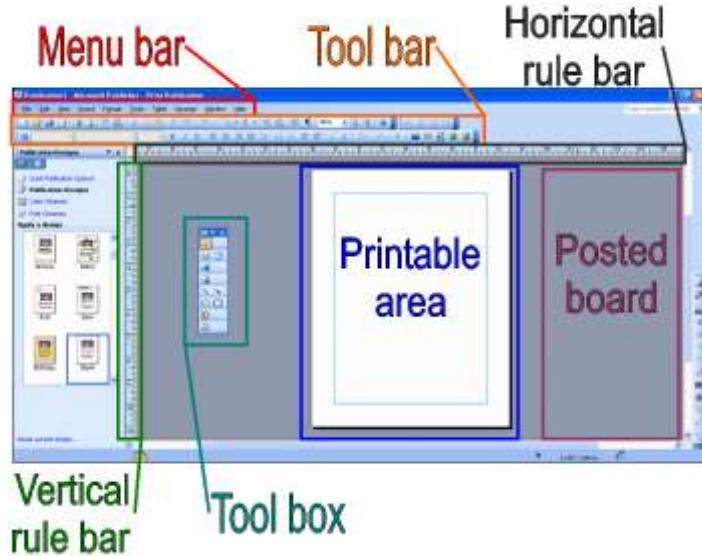
Types of desktop publishing software

- Graphical based – they are specifically developed to edit and format graphic objects like pictures e.g. Adobe Photoshop, Coral draw, Harvard graphic etc.
- Layout based – these types of desktop publishers are specifically developed to create different page layout designs for text and pictures e.g. MS-Publisher, Adobe PageMaker etc.

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MS-Publisher 2003 window

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Parts of MS-Publisher window 1

1. Paste board – it's a large blank area where you place text and graphical objects before arranging them on the printable area.
2. Printable area – it's the area surrounded by margins on the pasteboard.
3. Tool box – it's a set of buttons that contains various tools used to create and manipulate publication.
4. Master page icon – it's placed at the bottom of the publication window and holds icons representing each page in the publication. A master page is used to design the general layout that needs to be applied in all other pages of the publication.

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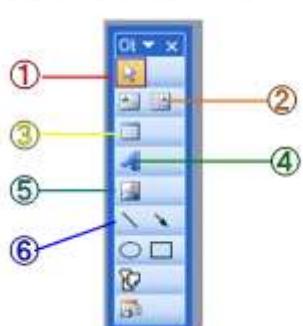
Parts of MS-Publisher window 2

5. Rulers – they help the user to manually create ruler guides, which are nonprinting extensions and also to measure an object size.

6. Control palette – it's a shortcut tool bar mainly having text and paragraph formatting commands icons.

7. Tracking and kerning – **tracking** refers to changing the visual denseness or openness of character in a line while **kerning** is fixing particular pair of letters that is too close or too far apart from each other.

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Tool of MS-Publisher 2003

Object tool bar 1
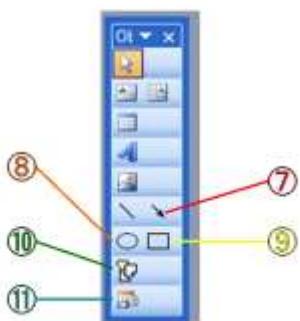
1. Select Objects – select, move and resize text blocks and graphical objects.

2. Horizontal and Vertical Text Box – insert text boxes.

3. Insert Table – insert tables.

4. Insert WordArt – insert wordarts.

5. Picture Frame – create a frame for paste a picture.

6. Line – draw straight lines any direction.

576

Tool of MS-Publisher 2003

Object tool bar 2

7. Arrow – draw straight arrow lines any direction.
8. Oval – draw ovals autoshape.
9. Rectangle – draw squares and rectangles.
10. Autoshape – insert other types of autoshape.
11. Design Gallery Object – insert design gallery objects.

577
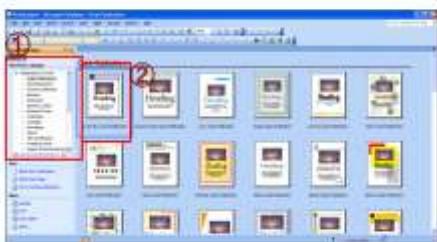
Steps of "Starting Publisher 2003"

Starting MS-Publisher 2003
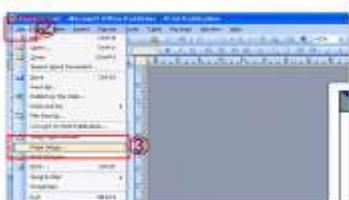
1. From the "Start" menu.
2. Point to "Programs/All Programs".
3. Point to "Microsoft Office".
4. Click "Microsoft Office Publisher 2003". (Publisher window is displayed).

Steps of "open the new print publication from design template
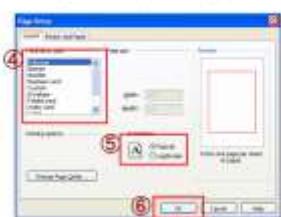
1. Select a category of design templates from task pane e.g. "Publications for print", "Web Site and E-mail" or etc.
2. Click a template you want to create from the list. (Template is displayed).

Steps of "open the new blank print publication 1

Page Setup dialog box
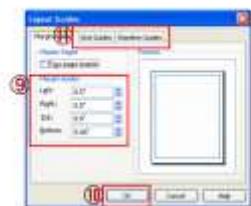
1. Click "New" command on the standard toolbar. (New blank print publication is displayed).
2. On the "File" menu.
3. Click "Page Setup" (Page Setup dialog box is displayed).
4. Select publication type from the list.
5. Select orientation "Portrait" or "Landscape".
6. Click "OK" button.

Steps of "open the new blank print publication" 2
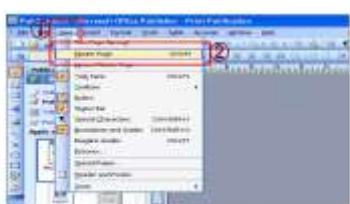
Layout Guides (Margin Guide tab) dialog box

7. On the "Arrange" menu.
8. Click "Layout Guides". (Layout Design dialog box is displayed).
9. Set each margins.
10. Set other properties from each tab.
11. Click "OK" button.

NB; shortcut key of "New"
    Ctrl + N

Steps of "set up a publication in Publisher"
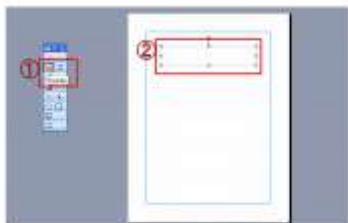

Master Page window

1. On the "View" menu.
2. Click "Master Page". (master page window is displayed).
3. Use the "Edit Master Pages" toolbar to design a master page.
4. Click "Close Master View" button on the toolbar to switch view back to foreground pages.

NB; shortcut key of switch to "Master page"
    Ctrl + M

## Steps of "add text using text frame tool in Publisher"
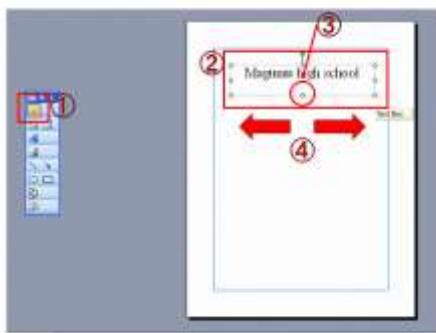
1. Click tool marked "A" on the tool box.
2. Select an empty area on the pasteboard or printable area to add text frame and create it using drag and drop.
3. Click inside of the text frame.
4. Type the text in the text frame.
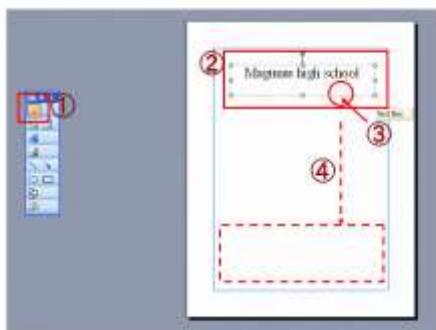
NB; text may not fit in the created text frame. Publisher displays **A...** below the text frame.

Steps of "resize the text block"

1. Click "Select Object" command on the object toolbar.
2. Click text block you want to resize.
3. Place the pointer on the handle.
4. Drag and drop to resize.

Steps of "move the text block"
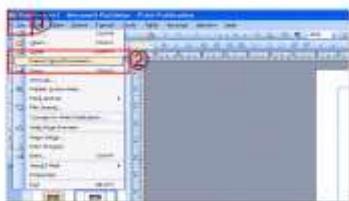
1. Click "Select Object" command on the object toolbar.
2. Click the text block you want to move.
3. Place the pointer on the outline of text block and hold down the left mouse button.
4. Drag the text object to a new position then drop.

Importing functions

- Importing text from a word processor – other than typing you can also import text from a word processor file.

- Inserting graphical objects – you can import pictures and other graphical objects into a publisher document by linking or embedding.

Steps of "importing text from a word processor

1. On the "File" menu.
2. Click "Import Word Document". (Import Word Document dialog box is displayed).
3. Select the location where document is existing from shortcut command.
4. Select the document.
5. Click "OK" button. (the text is pasted onto the printable area.

Import Word Document dialog box

Steps of "inserting graphical objects"
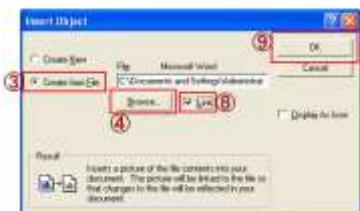
1. On the "Insert" menu.
2. Point to "Picture".
3. Click "From File". (Insert Picture dialog box is displayed).
4. Select the drive or folder from shortcut menu where the file is located.
5. Select picture you want to insert.
6. Click "Insert" button.

Insert Picture dialog box

Steps of "embed or link an object"

Insert Object dialog box

Browse dialog box

1. On the "Insert" menu.
2. Click "Object". (Insert Object dialog box is displayed).
3. Select "Create from File".
4. Click "Browse" button. (Browse dialog box is displayed).
5. Select the drive or folder from the shortcut menu where the file is located.
6. Select the file you want to link or embed.
7. Click "OK" button.
8. Check into the link check box to link. For embedding leave the box unchecked.
9. Click "OK" button.

Steps of "delete text in publisher"

1. Click "Select Object" command on the object toolbar.

2. Highlight the text you want to delete.

3. Press "Delete" or "Backspace" key.
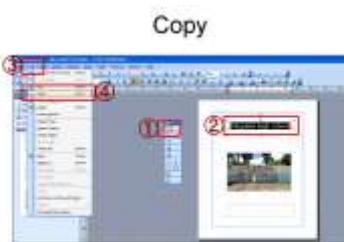
Steps of "delete a text object"

1. Click "Select Object" command on the object toolbar.

2. Click the text object you want to delete. (handles are displayed around picture).

3. Press "Delete" or "Backspace" key.

Steps of "copy a block of text"

Copy

Paste

1. Click "Select Object" command on the object toolbar.
2. Highlight the block of text.
3. On the "Edit" menu.
4. Click "Copy".
5. On the "Edit" menu.
6. Click "Paste".
7. Move the copied block of text where you want to paste.
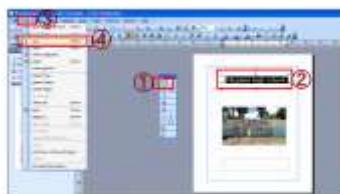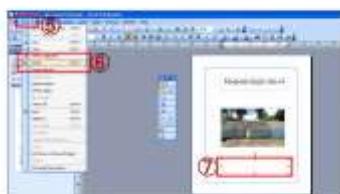
NB; shortcut key of "Copy"
    Ctrl + C
    shortcut key of "Paste"
    Ctrl + V

Steps of "move a block of text"

Cut

Paste

1. Click "Select Object" command on the object toolbar.
2. Highlight the block of text.
3. On the "Edit" menu.
4. Click "Cut"..
5. On the "Edit" menu.
6. Click "Paste".
7. Move the block of text where you want to paste.
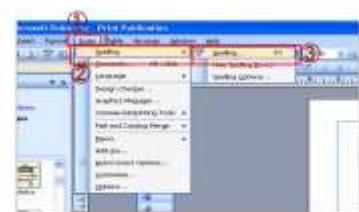
NB; shortcut key of "Cut"
    Ctrl + X
    shortcut key of "Paste"
    Ctrl + V

Steps of "spell check a publication"

Check Spelling dialog box

1. On the "Tools" menu.
2. Point to "Spelling".
3. Click "Spelling". (Check Spelling dialog box is displayed).
4. Select correct spell of word from suggestions.
5. Click "Change" button. If you want to ignore suggestions, click "Ignore" button.
6. After you check, close this dialog box from "Close" button.
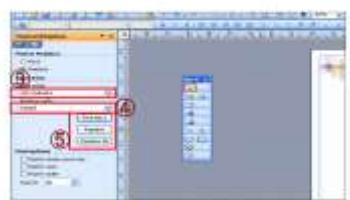
NB; shortcut key of spelling
    F7

Steps of "find and replace"
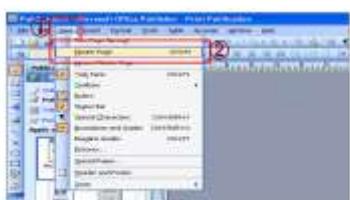
Find and Replace task pane

1. On the "Edit" menu.
2. Click "Replace". (Find and Replace task pane is displayed).
3. In the "Find What" box, type the word(s) to be searched.
4. In the "Replace With" box, type the word(s) to replace the found word(s).
5. Click "Find Next" or "Replace", "Replace All" button.

NB; shortcut key of "Replace" Ctrl + H

Steps of "edit a publication layout"

Master page window

1. On the "View" menu.
2. Click "Master Page". (master page window is displayed).
3. Make the necessary changes using master page toolbar.
4. Click "Close Master View" button to close master page window.
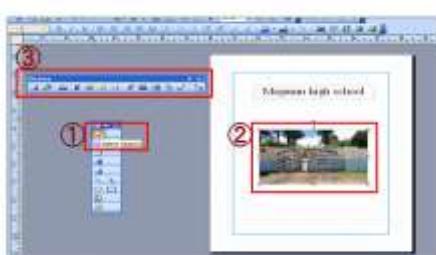
Editing graphical objects

- Graphical objects are clip arts and pictures. You edit object attributes such as size, position, colour and brightness.

Steps of "edit objects attributes"
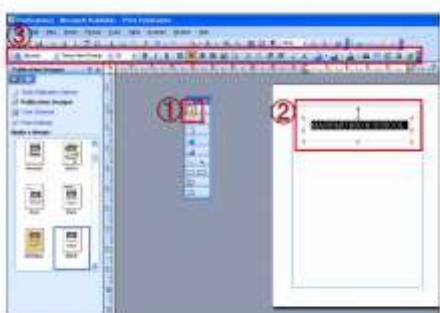
1. Click "Select Object" command on the object toolbar.

2. Select the object you want to edit. (picture toolbar is displayed).

3. Adjust the required attributes.

Formatting a publication

- Formatting refers to applying special effects or attributes to the layout, text and graphical objects.

Steps of "format text" in Publisher

1. Click "Select Object" command on the object toolbar.

2. Highlight the text to be formatted.

3. On the formatting tool bar, choose font style, size and other attributes.

Steps of "format text to superscript"

Font dialog box (Superscript)

Times New Roman

1. Click "Select Object" command on the object toolbar.
2. Highlight the text to be superscripted.
3. On the "Format" menu.
4. Click "Font" (Font dialog box is displayed).
5. In the "Effects" section, check in the box of "Superscript".
6. Click "OK" button.

Steps of "format text to subscript"

Font dialog box (Subscript)

Times New Roman

1. Click "Select Object" on the object toolbar.
2. Highlight the text to be subscripted.
3. On the "Format" menu.
4. Click "Font" (Font dialog box is displayed).
5. In the "Effects" section, check in the box of "Subscript".
6. Click "OK" button.
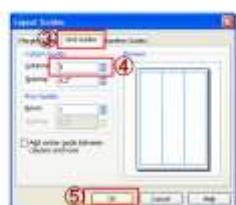
Paragraph and page formatting

- Paragraph formatting involves aligning text, indenting, adding column guides, inserting headers and footers.
  - Inserting column guides – by default, a page is made up of one column.
  - Headers and footers – headers are lines of text, page numbers or dates that appears at the top of every page. Footers on the other hand, appear at the bottom of every page.

Steps of "create more than one columns"
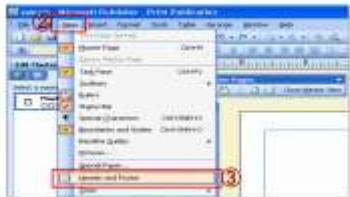
Layout Guides (Grid Guide tab) dialog box
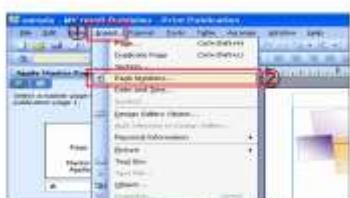
1. On the "Arrange" menu,
2. Click "Layout Guides". (Layout Guides dialog box is displayed).
3. Click "Grid Guides" tab.
4. In the "Column Guides" section, enter number of columns required.
5. Click "OK" button.

Steps of "insert headers and footers"

1. Press Ctrl + M keys to switch to master page.
2. On the "View" menu.
3. Click "Header and Footer" (Header and Footer toolbar is displayed).
4. Insert date or time from each command on the header and footer toolbar.
5. Type words if you want to insert to the header or footer.
6. After you insert, press again "Ctrl + M" keys to close to master page window.

## Steps of "insert page numbers"

Page Number dialog box
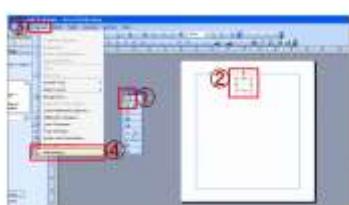
1. On the "Insert" menu.
2. Click "Page Numbers" (Page Number dialog box is displayed).
3. Select position to insert page numbers from down arrow list.
4. Select alignment to insert page numbers from down arrow list.
5. Click "OK" button.

Formatting graphical objects

- Fill and stroke – filling refers to applying a solid colour or patterns to a drawing, while stroke refers to line style.
- Arranging objects – if an object is hidden by another, you need to rearrange them in order of priority.
- Cropping graphical objects – cropping refers to hiding unwanted parts of a graphical object particularly in a picture.
- Grouping objects – if you have several objects in a publication, you may want to group them together.

# Steps of "apply background and stroke"
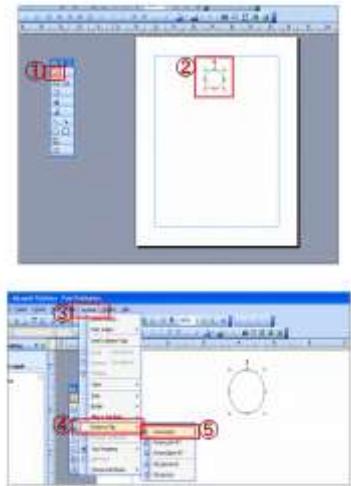
Format AutoShape dialog box
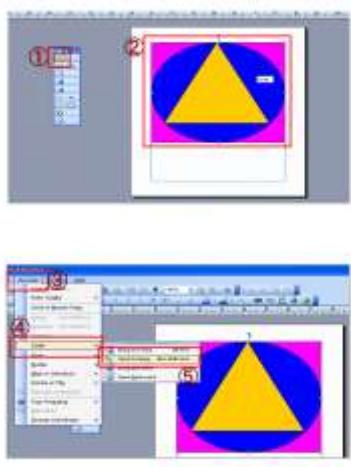
1. Click "Select Object" command on the object toolbar.
2. Select the object you want to apply.
3. On the "Format" menu.
4. Click "AutoShape". (Format AutoShape dialog box is displayed).
5. In the "Fill" section, select colour you want to fill from arrow down list.
6. In the "Line" section, select outer line of colour, style or etc from down arrow list.
7. Click "OK" button.

Steps of "rotating an object"

1. Click "Select Object" command on the object toolbar.
2. Select the object you want to rotate. (handles are displayed around object).
3. On the "Arrange" menu.
4. Point to "Rotate or Flip".
5. Click one you want to apply to rotate e.g. "Free Rotate", "Rotate Left 90° " or etc.

# Steps of "arrange objects (Bring to Front)"
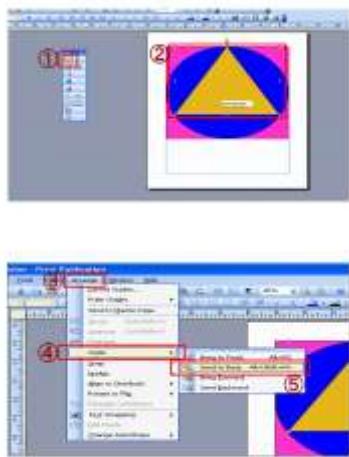
1. Click "Select Object" command on the object toolbar.
2. Select the object you want to bring to the front.
3. On the "Arrange" menu.
4. Point to "Order".
5. Click Bring to Front".

NB: shortcut key of "Bring to Front"
Alt + F6

Steps of "arrange objects (Send to Back)"
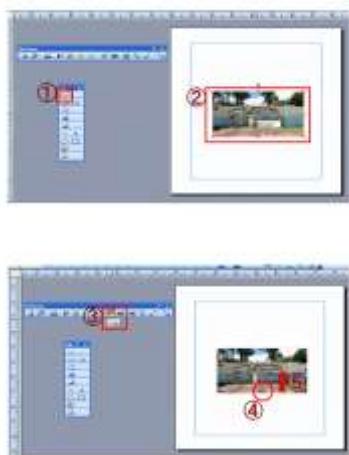
1. Click "Select Object" command on the object toolbar.
2. Select the object you want to bring send to the back.
3. On the "Arrange" menu.
4. Point to "Order".
5. Click "Send to Back".

NB; shortcut key of "Send to Back"
   Alt + Shift + F6

Steps of "crop an object"

1. Click "Select Object" command on the object toolbar.
2. Select the object you want to crop. (Picture toolbar is displayed).
3. Click the "Crop" command on the picture toolbar. (placeholder is displayed around picture.
4. Place the mouse pointer on the placeholder.
5. Drag inward up to you want to crop.

Before and after cropping
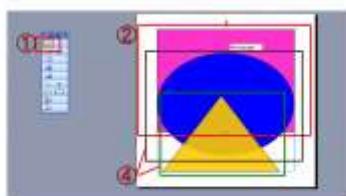
Before cropping

After cropping

Steps of "group objects"

1. Click "Select Object" command on the object toolbar.
2. Select a object to be grouped.
3. Hold down "Ctrl" key.
4. Select other objects to be grouped with you already selected.
5. Release "Ctrl" key.
6. Right click on the picture which you selected. (shortcut menu is displayed).
7. Click "Group".

Steps of "wrapping text"

Format AutoShape dialog box (Layout tab)

1. Click "Select Object" command on the toolbar.
2. Select object placed on the text box.
3. On the "Format" menu.
4. Click "Picture". (Picture dialog box is displayed).
5. Click "Layout" tab.
6. In the "Wrapping Style" section, select one you want to apply e.g. Square, Tight or etc.
7. Set other options if you want.
8. Click "OK" button.

Samples of wrapping style

Square

Top and Bottom

Tight

Through

None

Steps of "printing a publication" 1

Print dialog box

Properties dialog box

1. On the "File" menu.
2. Click "Print" Preview". (Print Preview window is displayed).
3. Click "Print" command on the toolbar. (Print dialog box is displayed).
4. Select printer from down arrow list.
5. Click "Properties" button. (Properties dialog box is displayed).
6. Set print options from each tab e.g. Page size, Orientation or etc.
7. Click "OK" button.
8. In the "Print" dialog box, click "Advanced Print Setting". (Advanced Print Setting dialog box is displayed).

Steps of "printing a publication" 2

Advanced Print Settings dialog box

Print dialog box

9. In the "Separate" tab, select "Separate" from down arrow list of "Output" to process cyan, magenta, yellow and black (CMYK) separately.
10. Click "OK" button.
11. In the "Print dialog box, set other options "Print range" and "Number of copies.
12. Click "OK" button.

NB; shortcut key of "Print"
Ctrl + P

Review questions 1

1. What is desktop publishing?
2. Why is a desktop publisher preferred in designing documents than a word processor.
3. Give three examples of desktop publishing software available in the market today.
4. You have been requested as the patron of journalism club to design for them a 5 page school magazine. The magazine layout should display the school logo at the top of every page. Explain how you would achieve this.
5. What are Master pages?
6. What is layering as used in DTP? Why is it a very useful feature in a desktop publisher.
7. Differentiate between the pasteboard and printable page.
8. Explain the importance of each tool on MS-Publisher's toolbox.
9. What commands are used in place of portrait and landscape page orientation in MS-Publisher?
10. What are the three main purposes of a desktop publishing software?

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Review questions 2

1. What are non-printing guides?
2. Give three nonprinting guides used in MS-Publisher.
3. Explain how you would create different columns on the same page.
4. What does the term gutter mean in relation to column setting?
5. Differentiate between margin guides and column guides.
6. Explain how you would lock column guides to avoid accidental moving from the current position.

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Review questions 3

1. Explain how you would create text using
   A) Text tool;
   B) Text frame;
2. Explain how you would draw a hexagon.
3. What is a text frame? How would you convert a rectangular shape into a text frame so that you can place text in it.
4. What is a Control Palette?
5. Explain how you would use a Control Palette to format;
   A) Characters in a text;
   B) Paragraphs;
6. Differentiate between the following:
   A) Kerning and tracking;
   B) Change case and drop cap;
   C) Fill and stroke.

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Review questions 4

1. Give three methods that are used to transform an object.
2. Explain how you would rotate an object.
3. How would you lock an object din order to preserve your publication design?
4. Explain how you would import an object from another file using the Place command.
5. How would you group objects so that you can manipulate them as a unit?
6. What is text wrap? Give three ways you can wrap text on an object.
7. Define the term cropping.
8. Explain how you can rotate a triangle by 30 degrees.
9. What is object grouping.
10. Explain the concept of wrapping text around objects. 622

Revision questions 1

1. Define the term artwork.
2. What is publishing? How is desktop publishing unique compared to word processing?
3. List any four application window layout components found in a typical desktop publisher.
4. Explain the function of each of the following tools;
   A) Pointer
   B) Text
   C) Rectangle tool
   D) Rotate
5. Explain the importance of master pages.
6. Differentiate between margins and column guides.
7. How can you calibrate rules to measure in millimetres?
8. Explain how you can draw a triangle of height 5 cm and base 6 cm.
9. Why do you need to lock margins or objects in a publication?
10. Explain terms font style and line stroke.

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Answer of revision questions 1-1

1. It is a publication that is ready for printing.
2. The design and production of text and graphics layouts in mass.
3. Printable area, paste board, rulers and menu bar.
4. A). Selects text and graphic objects.
   B). Inserts and selects text in the application.
   C). Drawing rectangles.
   D). Moves objects around a fixed focal point
5. Helps user set general layout options that apply to all pages in the publication.
6. Margins mark text areas on the page along the edges while column guides divide the page into several fields.

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Answer of revision questions 1-2

7. Right click a ruler then select millimetres.
8. Drag ruler guides on the screen to mark a rectangle area of 5cm x 6 cm on the screen. Draw a rectangle in the guides. Select the rectangle and then click element followed by polygon setting dialog box, select 3 sides then click OK.
9. To hold them in place in order to avoid losing the format.
10. Font style – the size, boldface, italics of font etc.
    Line stroke – thickness of a line.

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Revision questions 2

1. Explain how you can import a graphic into a publication.
2. To change the page orientation to wide, click (   ) then (   ) and select (   ) from the dialog box.
3. To fill a polygon, click (   ) then select (   ) and (   ) from the (   ) dialog box.
4. Rotating means changing the (   ) of an object.
5. The (   ) tool is used to change the zoom settings of the application window.
6. (   ) means cutting off the unwanted edges of a graphic object.
7. The small black objects that appear around a selected graphic are called (   ).
8. Expert tracking means (   ) while kerning means (   ).
9. How can you change the bold face and font size of selected text at once?

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Answer of revision questions 2

1. Click File then Place command. Browse for the file. Double click its icon. The mouse pointer changes to become a loaded icon. Click anywhere on the pasteboard to place the graphic.
2. File – Document setup – Wide – Document setup.
3. Element – Fill and colour type – Fill and stroke dialog box.
4. Angular placement.
5. Zoom.
6. Cropping.
7. Place holders/handles.
8. Changing visual denseness by fixing space between a pair of characters.
   Fixing particular pairs of letters that are too close or too far apart from each other.
9. Using available style.

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Practical activity 1

- Complete the school magazine so that it will be a multiple page document with the following sections:
  1. School History.
  2. Administrative structure.
  3. What is offered in every academic department.
  4. School performance in national examinations for the last two years.
  5. Games and clubs.
  6. Jokes and entertainment.

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Practical activity 2

1. Draw the following basic shapes:
   A) 5 cm by 7 cm rectangle;
   B) A circle with 6 cm radius;
   C) A hexagon.
2. Draw a circular text frame and fill it with the following text:
   1. *"Computer Studies is relatively a new area of study, which is very dynamic. Due to this reason, every one of us is expected to keep abreast with changing trends in Information Communication and Technology (ICT)".*
3. Format the character in bold into superscript or subscript:
   A) H_2O
   B) CM^2
   C) NH_4OH
   D) 1×10^3
   E) Fe_3O

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Practical activity 3

1. Draw the following basic shapes:
   A) An 8 cm square and rotate it to 45 degrees;
   B) Draw a triangle with rounded corners and apply fill and stroke.
   C) A Star with 74 degrees inset and ten sides.
2. Insert a clipart from Microsoft clipart gallery into a publication and crop it to fit in a 2 cm * 2 cm marked area of the screen bounded by ruler guides.

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Practical activity 4

1. Print a copy of your school magazine that you have developed.

2. Using a logo provided by the teacher, measure and design it in a desktop publishing software and then print it.

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END

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