CHAPTER ONE
APPLICATION SOFTWARE

Software is a collection of programs that tell the computer how to work.

Types of software

1. **System software/Operating system.** System software is a program used to run a computer hardware and application programs. For examples: Windows, Android, Linux, Unix, Mac OS.
2. **Application software.** Application software is software that is used to perform specific task in the computer. Word, Excel, PowerPoint, Facebook, WhatsApp.

Microsoft Office Applications

Microsoft Office is a collection of office-related applications. The most common Microsoft Office Applications include: MS Word, MS Excel, MS PowerPoint, MS Access

Uses of Microsoft office

1. **MS Word** is to create documents, flyers, publications.
2. **MS PowerPoint** – to organize and manipulate data including formulas, graphing tools, and more.
3. **MS Excel** – to store, organize, and manipulate data.
4. **MS Access** – to compile and organize large amounts of data.

Word processor (MS Word)

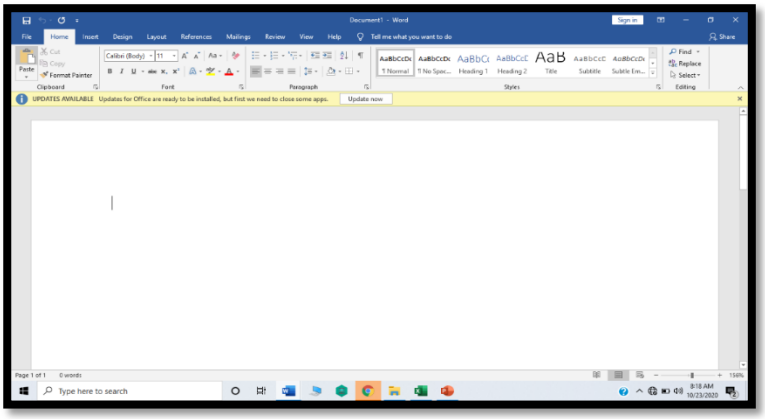
- **Word processor** is a software program capable of creating, storing, and printing documents.
- Unlike the standard typewriter, users using word processors have the ability of creating a document and making any changes anywhere in the document.

Document types

1. Doc
2. Docx
3. RTF
4. PDF

Practical

- Insert, select, delete, cut, copy and paste
- Page size and margins
- Find, select and replace
- Font size, font colour, font style
- Insert picture, shape, art or charts
- Save and print



Examples

- Microsoft Word
- WordPro
- Apple iWorks

Microsoft Excel

- MS Excel is a software that is used to calculate and store data.
- What makes a spreadsheet software program most unique is its ability to calculate values using mathematical formulas and the data in the cells.

Definition of Terms

1. **Workbook**: It is made up of many worksheets.
2. **Worksheet**: It is made up of rows and columns.
3. **Row**: It is the horizontal line of worksheet assigned with numbers.
4. **Column**: It is the vertical lines of worksheet assigned with letters.
5. **Cell**: It is the intersection of rows and columns in a worksheet.

Microsoft Excel Arithmetic Operations

The operation is complete, press Enter and the result of the operation will be placed in the cell.

Example

The following table shows the result of some four students in five subjects. The information is stored in Microsoft excel program. Use the table to answer the following questions.

	A	B	C	D	E	F	G	H	I	J	K
1	**ID**	**Name**	**ICT**	**MATH**	**ENG**	**PHY**	**BIO**	**Total**	**Average**	**Highest**	**Lowest**
2	1	Asha Abdi	100	88	97	95	62	**442**	**88%**	**100**	**62**
3	5	Halima Adan	90	80	76	92	29	**367**	**73%**	**92**	**29**
4	7	Abdi Farah	69	90	84	79	100	**422**	**84%**	**100**	**69**
5	10	Feysal Ali	77	35	30	20	90	**252**	**50%**	**90**	**20**

1. Write the formula used to calculate the TOTAL marks of Halima Adan.
   = SUM(C3:G3)
2. Write the formula used to calculate the MEAN marks of Halima Adan.
   = AVG(C3:G3)
3. Write the formula used to calculate the HIGHEST marks of Abdi Farah.
   = MAX(C4:G4)
4. Write the formula used to calculate the LOWEST marks of Feysal Ali.
   = MIN(C5:G5)

Microsoft PowerPoint

- Microsoft PowerPoint is a software program that helps to create a slideshow that addresses a topic for presentation.

Practical

- Inserting or deleting slides
- Inserting picture, audio, video
- Animation and transitions
- Designing slides

Database Management System (DBMS) Software

- A program that controls the organization, storage, management, and retrieval of data in a database.
- Users can create tables, queries, forms and reports.

Data Processing cycle

Terms

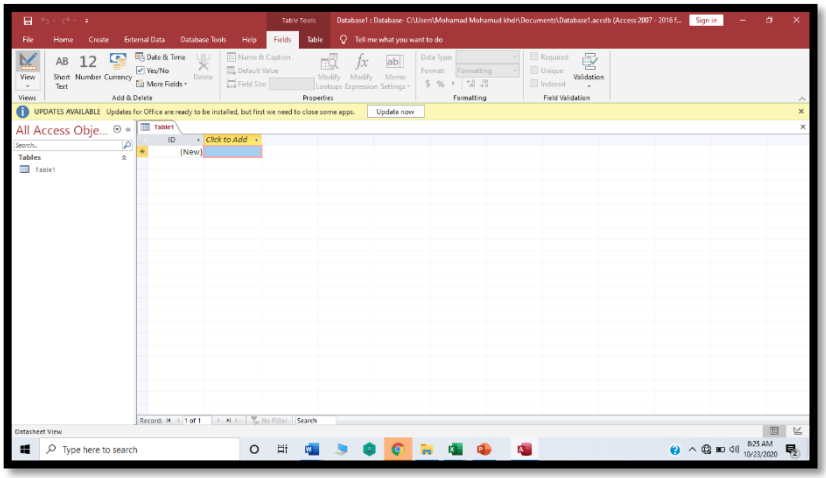
- **Data** is a collection of row information that has no meaning to human.
- **Information** is a processed data that has meaning to human.
- **Table** is a collection of related data held in rows and columns.
- **Field** is a piece of information related to a single person.
- **Record** is a group of fields within a table.

Data processing cycle

1. Collection
2. Preparation
3. Input
4. Processing
5. Output
6. storage

Example:

- Microsoft Access
- Oracle Database
- MySQL
- FoxPro



CHAPTER TWO
COMPUTER PROTECTION

Computer protection involves the protection of hardware, software, and data from threats or damage. Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. It's also known as information technology security or electronic information security.

Offline and Online identity

- Your **offline identity** is the person who your friends and family interact with on a daily basis at home, at school, or work. They know your personal information, such as your name, age, or where you live.
- Your **online identity** is the information on the Internet about an individual. Your online identity is how you present yourself to others online.

Ways to minimize online identity theft

- Pay with cash when feasible.
- Limit the information you share on social media, and keep your friends list selective.
- Use **unique, strong passwords** for each online account/website.
- Protect online transactions with data encryption software.
- Install antivirus and anti-spyware programs on your computers and other devices.
- Update your mobile apps and computer software regularly.
- Shield the keypad when you enter PINs.
- Do not connect to public Wi-Fi networks.
- Turn off location tracking on your devices.

Malware

Malware means malicious software that is used to perform malicious attack. One of the most common cyber threats, malware is software that a cybercriminal or hacker has created to damage a legitimate user's compute

Types of malware

1. Virus
2. Trojans
3. Spyware
4. Ransomware
5. Adware
6. Botnets
7. Phishing
8. Man-in-the-middle attack
9. Denial-of-service attack

Measures to protect your computer

1. Update your software and operating system
2. Use anti-virus software
3. Do not open email attachments from unknown senders
4. Do not click on links in emails from unknown senders or unfamiliar websites
5. Avoid using unsecure Wi-Fi networks in public places

Core Principles of Cyber Security (CIA)

- **Confidentiality**: Information that is confidential must remain private, and should be accessible to authorised users only.
- **Integrity**: For information to retain its integrity, it must not be altered or changed from its original state.
- **Availability**: Information and systems must always be available to authorised users when needed.

Importance of Computer Security

- To preserve company assets – Company assets include information kept in the computer networks, which are every bit as vital and useful as the physical assets of the company.
- To conform with governing requirements and moral responsibilities – Each organization creates policies and procedures which deal with the security requirements of the organization in question.
- For competitive benefit – Financial services and e-commerce considers network security to be of prime importance.
- To help curb the increasing volume and sophistication of cyber security threats – Threats of this nature include targeting phishing scams, data theft, and the exploitation of other vulnerabilities in the network.

Anti-virus Software

Antivirus software is software that is installed on a computer system to protect it from malicious software. It protects threats like viruses, spyware, malware, Trojans, phishing attacks, rootkits and spam attacks, bug as well as any other cyber threats.

Importance of anti-virus

1. Antivirus software offers comprehensive computer threat protection.
2. Antivirus software can increase your computer's lifetime.
3. Antivirus software can help protect your reputation. There are many viruses that attempt to hijack your desktop email program in order to send out unsolicited email to your contacts.
4. Antivirus apps can help you address malware attacks even before they can cause harm to your system. Most of these tools allow you to scan infected files that can cause a major security incident.
5. protect your shared networks against malicious attacks like Trojan Horses and ransomware.
6. Antivirus tools can help you speed up the performance of your computer as they can declutter cached threats.
7. Antivirus apps can help you keep your data secure and protected so you won't lose them. Also, they can keep your files and documents protected from being corrupted

Kaspersky Anti-virus

Kaspersky Anti-Virus provides comprehensive computer protection against known and new threats, network and phishing attacks. Various functions and protection components are available as part of Kaspersky Anti-Virus to deliver comprehensive protection. Kaspersky has several protection components such as: File Anti-Virus, Mail Anti-Virus, Web Anti-Virus, IM Anti-Virus, Network Monitor, System Watcher, Anti-Phishing, On-Screen Keyboard.

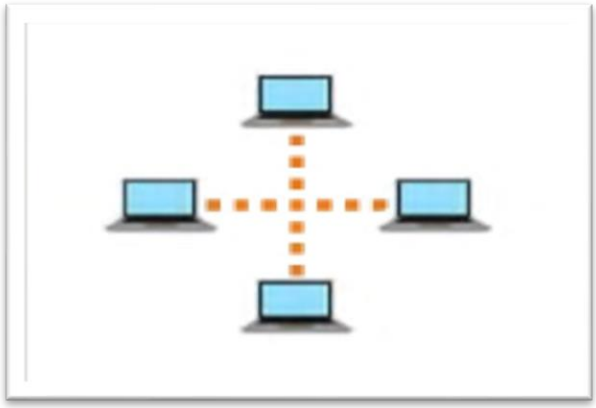
CHAPTER THREE
USING THE INTERNET

What is internet?

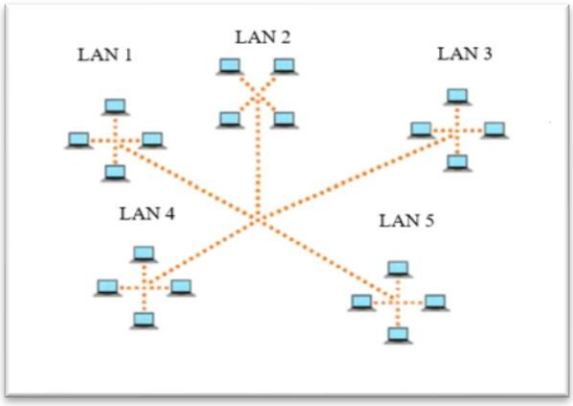
The internet is the largest computer network in the world that connect millions of computers. A network is a group of two or more computer systems linked together.

Two main types of networks

1. **Local Area Network (LAN):** A LAN is two or more connected computers.



2. **Wide Area Network (WAN):** A WAN typically consists of two or more LANs.



Uses of Internet

1. Online Booking & Orders
2. Education
3. Online Banking
4. Research
5. Electronic Mail
6. Social Networking
7. Entertainment
8. E-Commerce
9. Advertising

Importance of the Internet

1. The Internet is a great platform for students to learn throughout their lifetime.
2. Source of study materials.
3. Online discussion forums.
4. The internet facilitates internet banking, mobile banking, online banking and e-wallets.
5. The internet plays a vital role in ensuring that people stay in contact regardless of the physical barriers like distance.
6. Governments now have websites where the public can acquire services and perform transactions like tax payment.
7. E-Commerce. With the help of the internet, anybody can order products online.

Impacts of the Internet

1. The Internet and Education. The Internet has clearly impacted all levels of education by providing unbounded possibilities for learning.
2. The Internet and Culture. The internet facilitates people to interact and adopt different cultures.
3. The Internet and Personal Relationships. The Internet has also changed the way we interact with our family, friends, and life partners.
4. The Internet and Social and Political. The Internet has proved to be a decisive communication tool in the latest election campaigns.

5. The Internet and Consumer Trends. New technologies increase the speed of information transfer, and this opens up the possibility of "bespoke" shopping.
6. The internet and the economy. The Internet is one of the key factors driving today's economy. No one can afford to be left behind.
7. The Internet and Security. The security of a place can be improved by connecting CCTV.

World Wide Web

- The World Wide Web usually called the Web for short is a ***collection of different websites you can access through the Internet.***
- A website is made up of text, images, videos, audios and other resources. The purpose of a website can be almost anything: a news platform, an advertisement, an online library, a forum for sharing recipes, or an educational site.
- To get to a web page, you can type the URL (Uniform Resource Locator) in a browser. The URL, also known as the web address, tells the browser exactly where to find the page.

Web Browsers

- A web browser is the tool that you use to access the World Wide Web. The browser's main job is to display web pages.
- **Examples of web browsers are**: Firefox, Google Chrome, Safari, Internet Explorer, or Opera mini. All of these browsers are free.

What Is a Domain?

A domain is a unique name that identifies a certain computer in the internet. A domain name can be any combination of letters and numbers, and it can be used in combination of the various domain name extensions, such as .com, .net, .org, .edu and more.

Types of Domain Name

1. Top-Level Domain (TLD)
2. Second-Level Domain (SLD)
3. Third-Level Domain

Top-Level Domain (TLD)

A TLD, short for top-level domain, is the last segment of a domain name. **com** is the second-level domain of the domain https://www.Google.**com**

Types of TLDs:

a. gTLD – Generic Top-Level Domains. They can be used for general purpose for example; .com, .net, .info, .org.
b. sTLD – Sponsored Top-Level Domains. They can be used for specific purpose for example; .edu, .gov, .mil, .jobs.
c. ccTLD – Country Code Top-Level Domains. They can be used by specific country

For example;

- ✓ ccTLD of Somalia is .so
- ✓ ccTLD of United Kingdom is .uk,
- ✓ ccTLD of United State is .us,
- ✓ ccTLD of Kenya is .ke.

Common Examples of TLD

- **.net. Net**work entities
- **.org**. Non-profit **org**anizations.
- **.com**. **Com**mercial
- **.edu**. **Edu**cation
- **.mil. Mil**itary
- **.gov. Gov**ernment

Second Level Domain

Domains of the second level are domains that follow top levels within the DNS hierarchy. Google is the second-level domain of the domain https://www.Google.com.

Third Level Domain

Domains in the third stage are obviously secondary domains within the DNS hierarchy. It is to the left of the SLD and is often known as the subdomain. www is the third-level domain of the domain https://www.Google.com.

Search Engines

- A search engine is a software system that is designed to carry out web searches in a systematic way for particular information specified in a textual web search query.
- A search engine is used to locate a certain information on the internet.
- **Examples of search engine are:**
  - ✓ Google search engine
  - ✓ Bing search engine
  - ✓ Yahoo search engine
  - ✓ DuckDuckGo search engine.

How Search Engine work

Search engines are answer machines. They exist to discover, understand, and organize the internet's content in order to offer the most relevant results to the questions searchers are asking. Search engines work through three primary functions:

1. **Crawling the question:** Scour the Internet for content, looking over the code/content for each URL they find.
2. **Indexing:** Store and organize the content found during the crawling process.
3. **Ranking the result:** Provide the pieces of content that will best answer a searcher's question.

Research on the Web

- **Research** is the collection, organization, analysis and drawing new conclusion of information to increase the understanding of a given topic.
- **Internet research** is the practice of using Internet information, especially free information on the World Wide Web, or Internet-based resources (like Internet discussion forum) in research.

Methods of evaluating information sources

1. Credibility
2. Accuracy
3. Relevance
4. Authority
5. Objectivity
6. Currency

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