2nd Term Computer Studies year 10 Scheme of Work 2019/2020 session

WEEK	TOPIC
1	Revision of 1 st term work
2	C computer system Software: Definition
3	Computer system Software: Examples of Computer Operating System
4	Computer Application Software
5	Programming Language
6	Translator
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Computer Operating System

A **computer operating system** or **OS** is a software program that enables the computer hardware to communicate and operate with the computer software. Without a computer operating system, a computer and software programs would be useless.

When computers were first introduced, the user interacted with them using a command line interface, which required commands. Today, almost every computer is using a GUI (Graphical User Interface) operating system that is much easier to use and operate.

Examples of computer operating systems

1. **Microsoft Windows 10 -** PC and IBM compatible operating system. Microsoft Windows is the most common and used operating system.
2. **Apple macOS -** Apple Mac operating system. Today, the only Apple computer operating system is macOS.
3. **Linux OS -** A popular variant of Linux used with PC and IBM compatible computers.
4. **Google Android -** Operating system used with Android compatible phones and tablets.
5. **iOS -** Operating system used with the Apple iPhone and iPads.
6. **Chromium -** Google operating system used with Chromebooks.
7. **OxygenOS -** OnePlus' proprietary operating system.

Computer Application Software

Application software is a term which is used for software created for a specific purpose. It is generally a program or collection of programs used by end users. It can be called an **application** or simply an **app**.

CATHEGORIES OF APPLICATION

1. WORD PROCESSOR : A **word processor** is a program designed for creating and editing business and personal documents that are primarily text-based.
   Examples of word processor packages: MS word, Word Art, Word pad, Word Perfect, Kingsoft Writer, Scrivener.StarOffice Writer etc

1. SPREAD SHEET: It is an electronic document in which data is arranged in the rows and columns of a grid and can be manipulated and used in calculations. Examples of spread sheet Apps: 1. Microsoft Excel
2. . Google Sheets - (online and free).
3. iWork Numbers - Apple Office Suite.
4. LibreOffice -> Calc (free).
5. Lotus 1-2-3 (discontinued).
6. Lotus Symphony

3. Graphics: Computer graphics is the discipline of generating images with the aid of computers

Examples of graphic packages: Corel Draw, Autor Card, Paint Artist, Pixel base Image Editor etc.

4. : **Database**: It is also called electronic **database**: It is a structured data saved on the computer which can be access and retrieve at any period of time.
   Examples of data base Packages: MS Access, Fortran, Oracle, cobolt, MS SQL Sever, ADABAS, QUICK BASE etc.
5. BROWSERS: Moliza Firefox, Opara Mini, Internet Explorer, Google Chrome.
6. Games : Examples of games are Puzzles, shooter.

COMPUTER PROGRAMMING LANGUAGE

A computer programming language is a formal language which comprises set of instruction given to the computer to produce various kind of output.

Types of Programming Language:

I. **Procedural Programming Language**: It is used to execute a sequence of statements which lead to result.
II. **Functional Programming Language**: It uses stored data that is frequently avoiding loops.
III. **Object oriented programming Language**: It is used to access the internal and the external parts of data.
IV. **Scripting Programming Language**: It is a language for developing of large system.
V. **Logic Programming Language**: This is the language that is used for making declarative statement and allows the computer to reason about the consequences of those statement.
VI. **C Language:** It is used for programming games
VII. **C + + Programming Language**: It has an object oriented structure which permits code to be reused many times. It is used in projects.
VIII. **Pascal Programming Language**: It uses keywords instead of symbol to write a program.
IX. **Fortran Language**: It is used by scientist and engineer for calculation.
X. **Java Language**: it is used to design a platform of a program

XI. **Perl Language**: This is a language written to instruct server to perform or allow additional capabilities of web pages.

XII. **PHP (Hypertext Preprocessor) Language**: It is used to design web pages to generate HTTP header and link to database.

ABBRAVIATION
HTML-Hypertext Make up Language.
HTTP-Hypertext Transmission Protocol
URL-Uniform Resource Locator

TRANSLATOR

A translator is refers to a compiler, assembler or interpreter.

PURPOSE OF A TRANSLATOR:

It translates high level language into a machine language to low level programming language. It convert a program in one session and report errors detected after the conversion.

TYPES OF TRANSLATOR:

1. Compiler: It is a translator that converts high level programming language to low level programming language.
2. Interpreter: It is a translator that converts high level programming language to low level programming. It is used as a debugging tool for software development.

3. Assembler: It is used to translate assembly language to machine language.

ADVANTAGES OF A TRANSLATOR

1. It reduces turnaround time
2. It is used to do our various project.
3. It handles variety of source file
4. It reduces cost.
5. It ensure consistency across all translation

DISADVANTAGES OF A TRANSLATOR

1. **Contextual errors** – A machine cannot yet be programmed to fully understand the context of how a certain word or phrase is being used.
2. **Struggles with literary texts** –The translator needs to be allowed some creativity in order to match it. A computer isn't yet capable of doing this.

3. **Security can be an issue** – Web-based Computer Assisted Translation tools need special scrutiny to ensure information security is not compromised.

COMUNICATION SYSTEM

A **communications system** is an integrated **system** of **communications** hardware. This can include transmissions equipment, relay stations, tributary stations and other data terminal equipment.

INTERNET

Internet is an electronic communications network that connects computer networks and organizational computer facilities around the world.

How big is the internet?

One measure is the amount of information that courses through it: about five exabytes a day. That's equivalent to 40,000 two-hour standard definition movies per second.

Computer Data and Information

DATA refers to facts or raw materials used to produce information.

Types of data

Quantitative data: Quantitative data is defined as the value of data in the form of counts or numbers where each data-set has an unique numerical value associated with it.

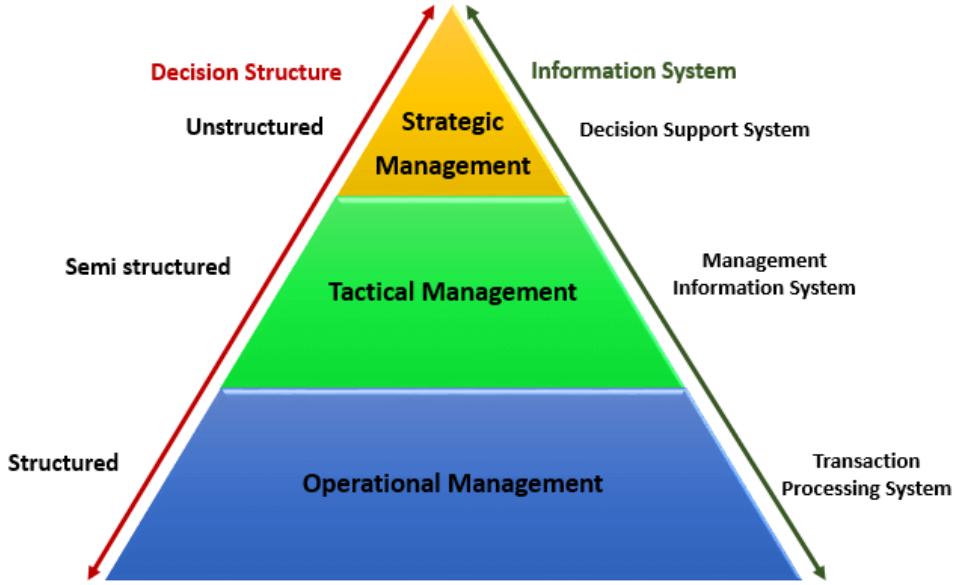
Examples of quantitative date. Scores of students in an examination, number of sales made per day, age of a particular group

INFORMATION

Information is defined as a process data.

Pyramid Diagram of Organizational levels and information requirements

Understanding the various levels of an organization is essential to understand the information required by the users who operate at their respective levels.



Transaction Processing System (TPS)

Transaction processing systems are used to record day to day business transactions of the organization.

Decision Support System (DSS)

Decision support systems are used by senior management to make non-routine decisions. Decision support systems use input from internal systems (transaction processing systems and management information systems) and external systems.

Online Analytical Processing (OLAP)

Online analytical processing (OLAP) is used to query and analyze multi-dimensional data and produce information that can be viewed in different ways using multiple dimensions.

What are the characteristics of good information?

The characteristics of good information include accuracy, reliability and accessibility to name a few. Below we'll discuss more characteristics of good information in detail…

Valid

Valid information is information that is accurate and reliable so that no mistakes or errors can be made.

Reliable

Reliable information is information that is gathered from a valid and trusted source and can be relied upon to be correct.

Timely

Timely information is information that is given for a correct time period. Profit and loss analysed by a company would need to access current sales figures and not access past sales figures from several years ago.

Fit for purpose

Fit for purpose information is information that is relevant only for the task at hand. If a business was opening in Birmingham.

Accessible

Much like a ramp for the disabled which ensures easy access, accessible information should be stored in a way the makes it easily accessible at the time it's needed.

Cost effective

Information that is worth investing time and money in to get help with your business would be cost effective information.

Accurate

Correct decision making relies upon accurate information. If your car showed that you were

going 20 mph less than you were actually going then this may result in you breaking the law.

Relevant

Information that directly relates to the business need. If a bakery was looking at the price of sand, this wouldn't be relevant information (unless they were somehow incorporating sand in to their products).

Level of Detail

The requested information must have enough detail to provide an acceptable answer. For example if the manager wants to see a summary of the sales figures for the last six months, the information with the right level of detail would show overall figures for each month plus a

Reliable Source

Information that is obtained for a business purpose should be gathered from a reliable and trustworthy source.

Understandable by user

Information given or used for a business purpose has to be understood by the end user. If a person with very limited IT skills calls a help-desk to try and solve a printing problem