Foundation of IS

DATA :

Is a raw fact and can take the form of a number or statement such as a date .

INFORMATION :

Is data that have been processed so that they are meaningful .

SYSTEM :

A collection of components that work together towards a common goal .

INFORNATION SYSTEM :

Is role to provide information to management which 'll enable them to make decisions which ensure that the organization us controlled .

BUSINESS INFORMATION SYSTEM "BIS" :

Is a group interelated components that work collectively to carry out input , processing , output , storage and control actions in order to convert data into information products that can be used to support forecasting , planning , control , coordination , decision making and operational activities in an organization .

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TYEBS OF BIS :

. OPERATION INFORMATION SYSTEM "OIS" :

Are generally concerned with process control , transaction processing and communication .

. MANAGEMENT INFORMATION SYSTEM "MIS" :

Are concerned with providing support to management decision making .

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TYBES OF INFORMATION SYSTEM :

1-Operation support system :

a-Specialized processing system .

b-Transaction processing system :

Process data resulting from business transactions , update operational database and produce business documents like "sales and inventory".

c-Process control system :

Minor and control industrial process like "petroleum refining and power generation" .

d-Enterprise collaboration system :

Support team , work group and enterprise communication like "Email , chat , video" .

2-Management support system :

a-Management information system :

Provide information in the form reports to support business decision making like "Sales analysis , production performance" .

b-Decision support system :

Provide interactive and support for the decision making process of managers like "product pricing".

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HARDWARE :

Physical components of a computer system which can categrorized by :

1-Input device :

Used to enter data or instructions from outside the computer into the computer , choice of input device depend on the quantity of data to be entered like "Mouse , keyboard".

2-Central processing unit :

Processor accepts instructions and data and storing the results in memory , The result of increasing its speed is the computer's speed .

a-Clock speed :

Determines how many instructions the process can do per second .

b-Pus width :

Describe how many pieces of data can be transmitted at one time .

3-Internal & External memory :

a-"Main| Primary |Internal" memory :

Which is data held/saved on the computer .

b-External "Memory | Storage" :

Which is data stored on a separate device where the information 'll be retained even if the machine switched off .

4-Output devices :

Display the results of computer processing .

NOTE :

Computer memory is used to store data which wait processing and instructions loaded from software which are used to process data or control the computer system and data or information that has been processed .

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MAINFRAME COMPUTER :

Large , powerful machine designed for large data processing activities .

MINI COMPUTER :

It combines some of characteristics of mainframe computers and micro ones , Different types of server may have many functions such as managing a network or hosting database .

MICRO COMPUTER :

It makes use of modern technology to provide relatively powerful computing facilities at low cost , Some of major characteristics of micro , small computer that inexpensive .

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SOFTWARE :

It's a series of detailed instructions that control operation of a computer system and exists as programs .

SYSTEM SOFTWARE :

Manage and control the operation of computer system as it performs tasks .

TYPES OF SOFTWARE :

1-Operation system like "Windows , Linux" .

2-Software development programs like "C , C++".

3-Utility programs like "Antivirus".

APPLICATION SOFTWARE :

It's a set of programs enable users to perform specific information processing activities , It has 2 categories :

a-General purpose applications like "MS word".

b-Application specific software like "Payroll sotware".

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DATABASE "DB" :

Collection of related data , An electronic one provides facilities for users to add , update or delete records as required .

DB OBJECTS :

" Tables – Forms – Reports – Query – Index – View ".

INDEX FEATURES :

It's the same basic information can be stored under a number of different categories , It provides flexibility and allows users to locate and organize information as needed .

DATABASE TYPES :

1-Field :

Is a single item of information .

2-Records :

Is a collection of related field and a table is collection of related records .

ALL RECORDS :

Must contain a unique identifier , normally called the key field or records .

KEY FIELD :

Usually takes the form of number or code and 'll be different for each record in database .

MAJORITY OF DB PROGRAMS :

Support the creation of relational database containing linked tables .

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TYPES OF DB USERS :

1-DB administration :

= They create users access and apply limitation to maintain isolation and force security .

= Administration also look after DBMS recourse like " system license , software application , tool required and other hardware .

2-DB designers :

= This is the group of people who actually works on designing part of database .

= They identify and design the whole set of entities , relations , constraints and views .

3-End users :

This group contains the persons who actually take advantage of database system .

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DATABASE MANAGEMENT SYSTEM "DBMS" :

Is a computer software application that interacts with the user .

General purpose DBMS :

Designed to allow :

1-Data .

2-Manipulation .

3-Data control .

Examples :

" Microsoft access , Oracle , My sql ".

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MICROSOFT ACCESS :

Provides ability to link tables together to create any required relationships .

When using database software , data is retrieved from a database using a query .

QUERY :

Enables a user to locate , sort , update or extract records from database .

USERS :

Design a query by specifying conditions that must be met in order for a record to be selected .

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TYBES OF QUERY :

1-Selection query :

Can be used to locate and display any records meeting a set of specified conditions .

2-Update query :

Can be used to modify records in a variety of ways according to a set of conditions specified by user , Such as :

1-Updating values held in fields .

2-Deleting records no longer required .

3-Appending new records to the database .

4-Generating new tables containing selected records or summary information .

SQL :

Structured query language that provides a standardized method for retrieving information from database .

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E-BUSINESS & E-COMMERCE :

E-Business :

Means business transactions that take place online with the help of the internet .

Difference between e-business & e-commerce :

E-commerce refers to buying and selling online, while e-business encompasses all business conducted online. E-commerce can be viewed as a subset of e-business .

Types of e-commerce :

(B2C) business-to-consumer
(B2B) business-to-business
(C2B) consumer-to-business
(C2C) consumer-to-consumer

Types of e-business :

(B2C) business-to-consumer
(B2B) business-to-business
(A2B) administration-to-business

Advantages of e-business :

1- Freedom .

2- A Feeling of Achievement .

3- You Can Start on a Small Budget .

4- Outsourcing at Your Fingertips .

5- Tap Into a Global Market .

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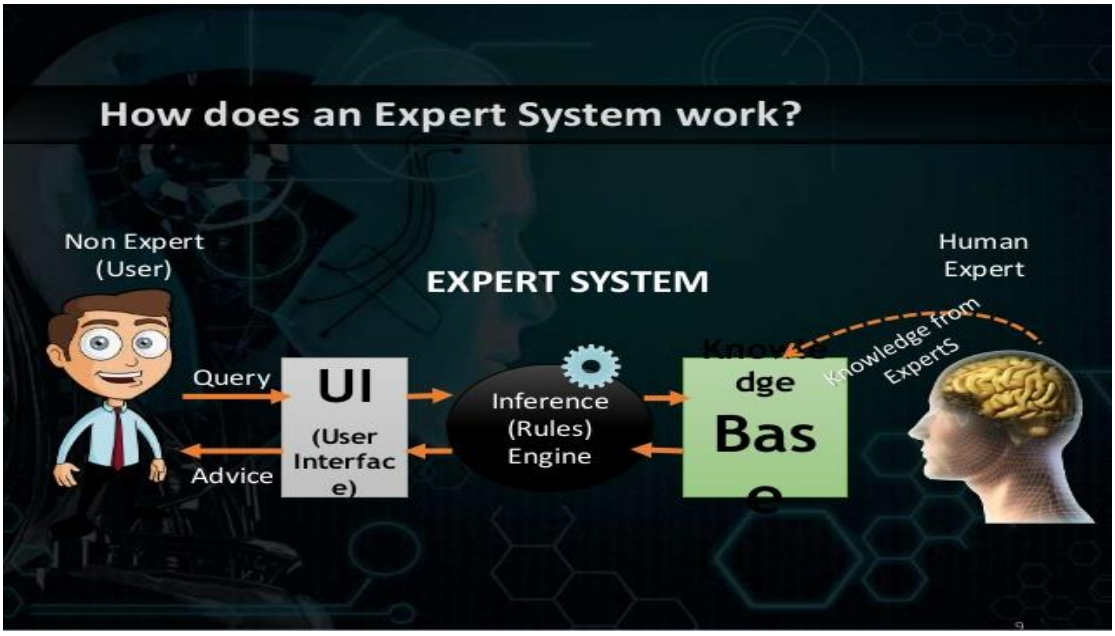
THE EXPERT SYSTEM :

Any software which behaves , advice or help you like an expert is called an Expert system .

Expert system contains , accumulated experience and set of rules to apply the knowledge to each particular situation that is given by user as a query .



Advantages of expert system :

1- Fast response .
2- Unemotional and response at all times .
3- Availability .
4- Cheaper .
5- Reduced danger .
6- Permanence .
7- Multiple expertise .

Transaction Processing System :

Is a type of information processing system, software and hardware combination, which supports Transaction processing. Transaction processing is a type of computer processing in which each individual indivisible task, called a transaction, is worked upon and executed as and when it comes .

Decision support system :

A set of related computer programs and the data required to assist with analysis and decision-making within an organization .

Supervised learning :

Is the machine learning task of learning a function that maps an input to an output based on example input-output pairs .

Unsupervised learning :

Is a type of machine learning algorithm used to draw inferences from datasets consisting of input data without labeled responses .