Introduction to Computers in Accounting

Computer System- Meaning, Elements and Components

Objectives

After going through this lesson, you shall be able to understand the following concepts.

• Meaning and Elements of Computer System

  • Components of Computer

• Advantages of Computer System

  • Limitations of Computer System

Introduction

In the modern days, computer has gained its own importance in every sphere. It has taken over all the markets, businesses and professions. It has become a major requirement for every business sector today. It is generally regarded as lifeline of modern business- like blood is required for efficient functioning of our body, in the same way computers are required for the smooth running of any type of business. In accounting context too, computers are used to process large amount of data to perform speedy calculations and to generate various accounting reports.

Definition of Computers

International Standard Organisation has defined computers as follows:

"A computer is a data processor that can perform substantial computations, including numerous arithmetic and logic operations, without intervention of human operator during the run."

Meaning and Elements of Computer System

It is an electronic machine that is used to process raw data into meaningful information required by the users. It works on a set of instructions that are programmed into it in the form of software which helps them in processing the data and producing information as per the requirement. A computer system is mainly composed of six elements namely, hardware, software, people, procedures, data and connectivity. The detailed explanation of all these elements is given below.

1. ***Hardware-*** It includes all the physical components of a computer such as keyboard, mouse, monitor, processor, etc. These components can be touched and the user inputs commands using these components.

2. ***Software-*** A set of programs that enables a computer to perform its tasks or commands given by the user. There are following six types of software.

   a. *Operating System*- It is an integrated set of specialised programs that are meant to manage and control the resources of a computer. They make the computer user–interactive, i.e. user-friendly. It means that operating system forms an interactive link between the user and the computer hardware. For example, Windows, Linux, etc.

   b. *Utility Programs*- Utility Programs refer to a set of pre-written computer programs that are designed to perform certain supporting operations. Most of the utility software are highly specialised and are specially designed to perform a single task or a small range of tasks. For example, virus scanners, system profilers, etc.

   c. *Application Software*- These are user-oriented programs that are designed and developed for performing certain specified tasks. For example, Microsoft Word, Flash Player, Skype, etc.

   d. *Language Processors*- These are the software that interpret or translate program language into machine language. For example, COBOL Processor, Fortran Processor, etc.

   e. *System Software*- These are the software that control the internal functions of the system such as reading data from the input devices.

   f. *Connectivity Software*- These are the software that create and control the connection between a computer and a server with the purpose of sharing the data.

3. ***People-*** It constitutes the most important part of a computer system. It basically refers to the individuals or the users who interact with the computer through the use of hardware and software. The following are the people who are involved with a computer system.

   a. *System Analysts*- They are the people who design the data processing system.

   b. *Operators*- They are the people who write programs to implement the data processing system.

   c. *Programmers*- They are the people who participate in operating the computers.

4. ***Procedures-*** A series of operations that are executed in a certain manner in order to achieve the desired set of results are known as 'Procedures'. There are mainly three types of procedures, which are as follows:

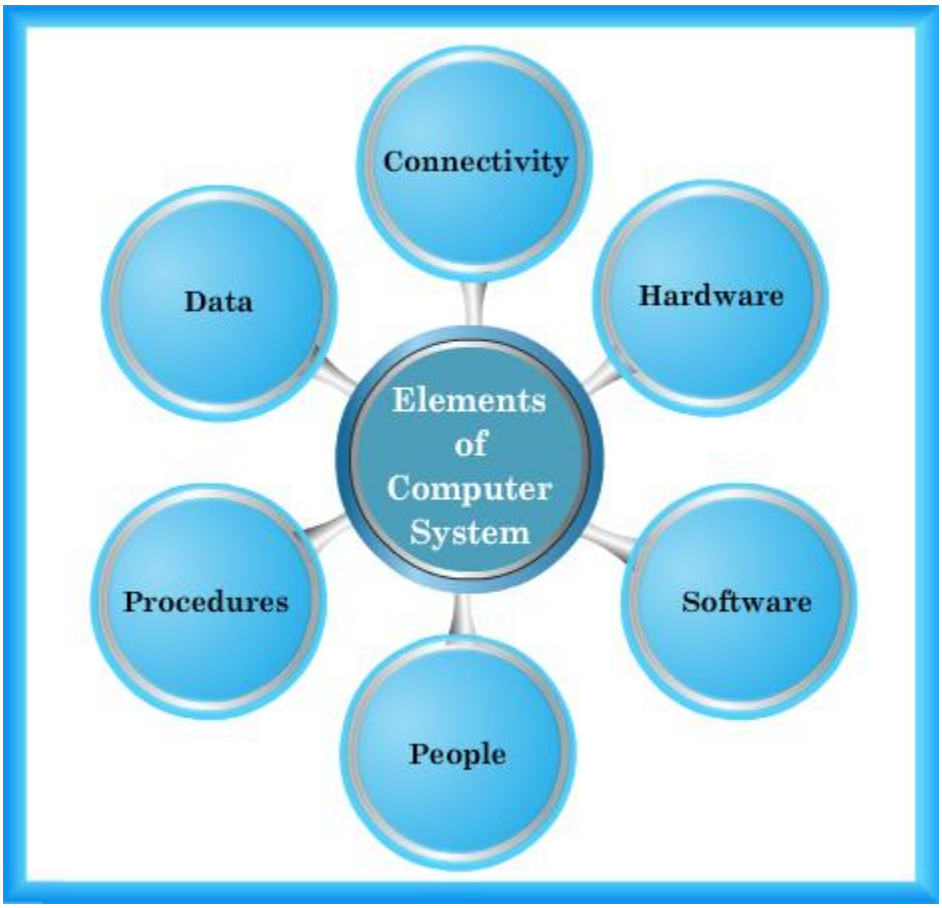
   a. *Hardware-oriented Procedures*- Hardware Oriented Procedures provide details about various components of a computer and their uses.

   b. *Software-oriented Procedures*- Software Oriented Procedures provide detailed set of instructions required for using the software of a computer system.

   c. *Internal Procedures*- These procedures help in sequencing the operation or working of each sub-set of overall computer system.

5. ***Data-*** The facts that are gathered and entered into a computer system is known as 'Data'. It may comprise of numbers, text, graphics, etc.

6. *Connectivity-* This refers to the manner in which a computer system is connected to other electronic devices through telephone lines, microwave transmission, satellite link, etc., is known as 'Connectivity'.



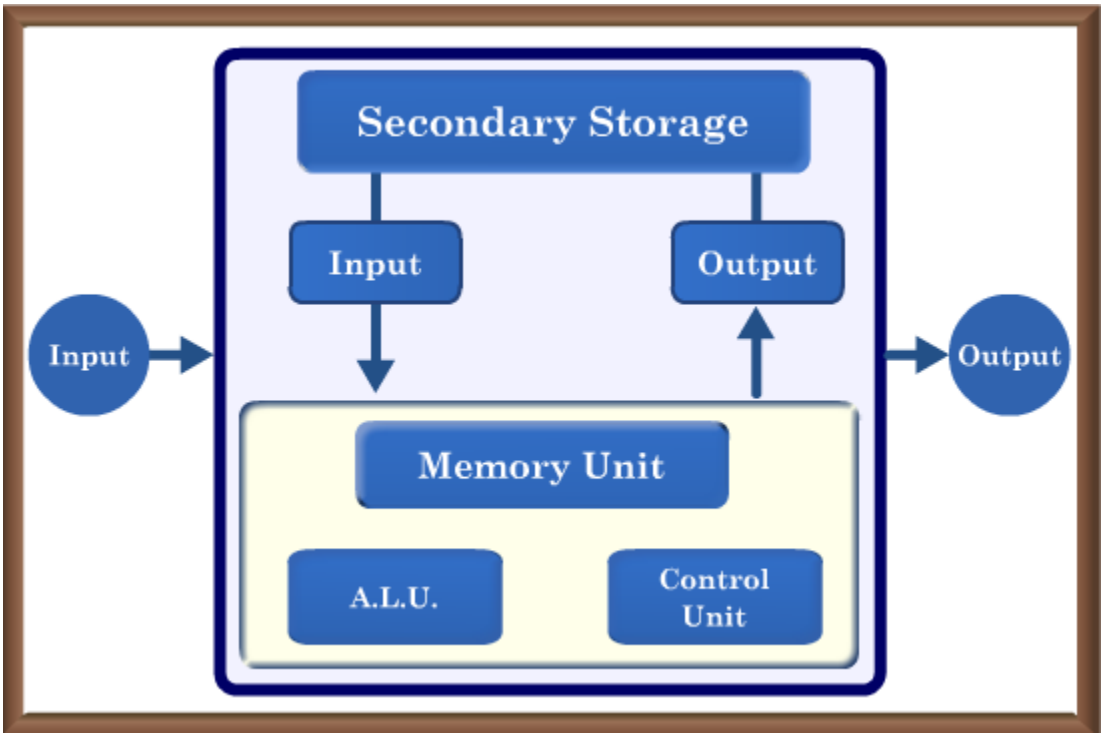
Components of Computer
A computer system has three main components as given below:

1. Input Unit

2. Processing Unit or Central Processing Unit (CPU)

3. Output Unit

The given below is a diagrammatic presentation of these components.



1. ***Input Unit-*** This unit controls those devices which are used to transfer inputs in a computer system such as Keyboard, Mouse, CD ROM, Magnetic Ink Character Recognition (MICR), Barcode Reader, Smart Card Reader and Touch Screen Feature.

2. ***Processing Unit or Central Processing Unit (CPU) -*** It is generally referred to as the brain of a computer system, which performs all the tasks related to processing of data, storage and retrieval of information. It is also known as Central Processing Unit. It is sub-divided into three parts:

a. *Arithmetic and Logic Unit (ALU)*- It does all the mathematical (or arithmetical) calculations in a computer system. For example, multiplication, addition, subtraction, division and logical operations.

b. *Memory Unit*- It helps in storing data that is not processed immediately.

c. *Control Unit*- It helps in control and coordination of all the other units of a computer system.

3. ***Output Unit***- The data when processed by a computer becomes information but to display this information to the users in a readable form certain devices are required which are known as output devices. This unit plays an important role in making information available to its users in an understandable form.

Some other important Components of the Computer Hardware

We have different body parts performing various functions for us similarly a computer has a number of components that together form a system. These are as follows:

1) Motherboard: It is one of the most vital components of the computer system. Also known as the mainboard or logic board, it connects a whole gamut of computer devices like Central Processing Unit (CPU), RAM, etc. Hence, it has a whole lot of slots like slot for USBs (pendrive), RAM expansion slots, etc. Like the wiring in our brain, motherboard has many circuits take make a computer work and enables it to perform various functions.

2) Random Access Memory (RAM): It is the primary memory of a computer which stores information in binary language i.e. in zeros or ones. But is volatile in nature because it can be accessed only till the time the system is on. RAM is normally in the form of small chips in the motherboard which are used to trace the location of a particular data and access it within certain milliseconds. However, it can store only limited amount of data at any point in time like MS Office application, etc. Due to its volatile nature, it can easily get erased when a device is rebooted.

3) Keyboard: We already know by now, that a computer has certain input devices that are used to feed instructions into a computer and certain output devices that show the results. Keyboard is one such input device that has all the 26 alphabets of English language arranged in a way as commonly referred to as the QWERTY keyboard. Hence, it is used to enter text or numbers into the system.

4) Sound card and Speakers: When you play a song in your computer, a voice magically appears. This is because every device has a sound card and a speaker which performs the function of converting the digital data stored in the form of music into analog data of sound waves.

5) Computer Screen: Also commonly called as Monitor, this component helps us in

interacting with the system by displaying the required content on the screen.
6) Printers: This device enables us to convert the soft copy of our data stored in the system into a hard copy or printed format.

Benefits of Computer System
The given below are the various advantages of computer system-

1. ***Accuracy-*** Output or information produced by a computer system assures a high degree of accuracy, provided the input is correct. The computations and operations performed by a computer are highly accurate and correct. As computer works on the basis of a set of instructions given to it in the form of programming software, so if the software is error free then definitely output will be highly accurate.

2. ***Speed-*** Computer systems perform the operations at a much faster speed as compared to human beings. It takes far less time than the manual systems in performing a task. Modern computers can perform 100 million calculations per second.

3. ***Reliability-*** A computer's efficiency is not affected by huge quantity of work pressure, long working hours or monotony. Often people get tired, lack concentration and feel stressed while working on huge volume of data that involves tedious calculations. Computer systems help overcome these limitations easily. A computer can perform multiple tasks with great precision and accuracy, thereby making the results highly reliable.

4. ***Versatility-*** Computers are specialised in doing various tasks simultaneously and with the same efficiency no matter how complex the tasks are. Now-a-days, computers are used in different areas to perform variety of functions such as telecommunications, hotels, retail stores, scientific laboratories, statistical purposes, cinema halls, etc. As it is catering to the different needs of each sector so this shows its versatile advantage.

5. ***Storage***- Computers have a huge storage capacity and can store safely a huge volume of data in a very small physical space. For example, a typical main frame computer can store billions of characters and thousands of graphic images.

Limitations of Computer System

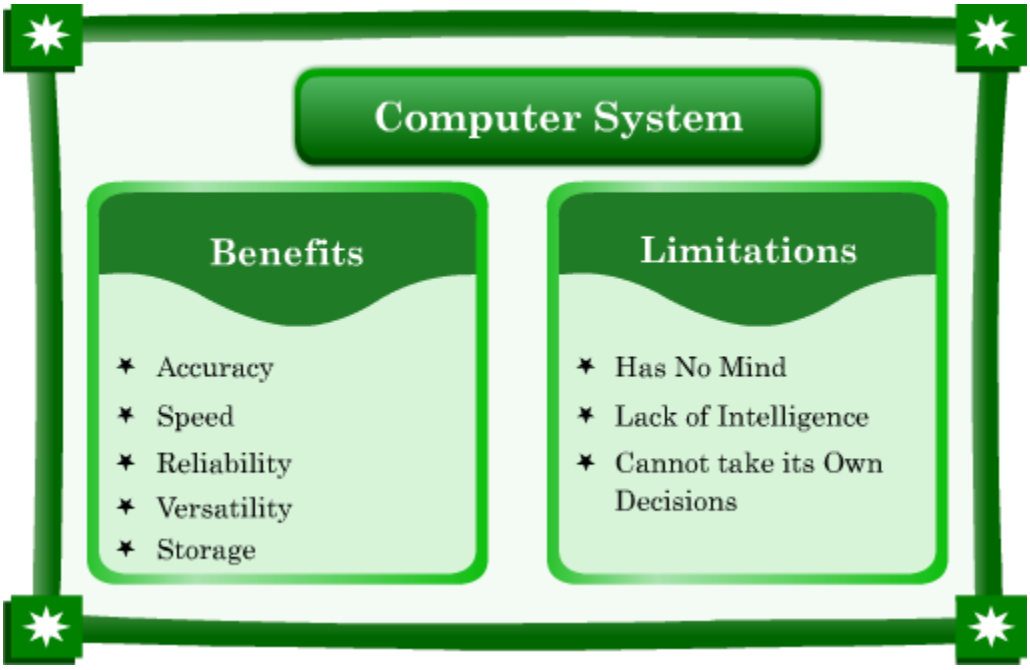
Although a computer system has various advantages, yet it suffers from certain limitations, which are listed below:

1. ***Has no mind-*** Computer system works as per the set instructions or commands given to it. Unlike Human Beings, it does not have any common sense. So, if

wrong instructions are given to it by human beings, it will work accordingly without applying its mind.

2. ***Lack of Intelligence-*** A computer system cannot perform a task on its own. It has to be programmed with a set of instructions to perform a particular function. Also, in case of any unforeseen condition, it cannot decide what exactly is to be done unless they are instructed to handle such situation.

3. ***Cannot take its own decisions-*** As decision making involves analysing data, comparison with already available data and analysis of present environment, it therefore requires intellectual mind, alertness, common sense and intelligence. Since computers work on a set of instructions given, thus it lacks all the above features that are required for quality decision making.



Computerised Accounting- Concept, Characteristics, TPS, MIS and Accounting Reports

Objectives

After going through this lesson, you shall be able to understand the following concepts.

- Computerised Accounting System
- Transaction Processing System
- Management Information System

- Accounting Information System
    - Accounting Reports
- Data Interface between Information Systems

Computerised Accounting System
We know that accounting in normal sense is a process of identifying, analysing and recording of business transactions. Traditionally, this process of accounting was carried manually i.e. by maintaining proper books of accounts such as journal, ledgers, etc. But with the passage of time as technology advanced and business transactions increased, it became difficult to maintain the accounts manually.

Therefore, the process of accounting is now carried through a computerised system i.e. computers with the help of various accounting software. This process of accounting, with the help of computers, is termed as Computerised Accounting System. Records maintained in the computerised accounting system are exactly the same as maintained in the manual system i.e.

Journal, Ledgers, Trial Balance, Trading Account, Profit and Loss Account and Balance Sheet. The only difference being that, in case of computerised accounting system, all these records are maintained electronically with the help of accounting software.

Features of Computerised Accounting System
The various distinctive features of computerised accounting system are as listed below:

1. It helps in online recording and storing of accounting data.
2. It helps in generating computerised purchase and sale invoices.
3. All accounts and transactions are codified logically which means each transaction or account contains a specific code.
4. It helps in grouping of accounts from the very beginning.
5. It provides reports quickly and instantly such as Stock Summary, Trial Balance, Trading and Profit and Loss Account, Balance Sheet, VAT Returns, etc.

Transaction Processing System
Transaction Processing System (TPS) refers to a computerised system that records, processes, validates and stores routine transactions that occur in various functional areas of a business on daily basis. This system facilitates decision making in a business organisation through the following processes.

1. *Data Collection*- The TPS collects all the required data to complete one or more transactions. The data can be collected either manually or through other devices such as scanners and point of sale equipments.

2. *Data Editing*- The system checks the data for its accuracy, correctness and completeness.

3. *Data Validation*- It refers to a process, where TPS verifies the data for its correctness and rectifies the errors, if detected.

4. *Data Manipulation*- TPS performs the process of calculation, then processes and analyses the inputted data on a pre-set design.

5. *Data Storage*- It places or stores the data in one or more databases.

6. *Output Generation*- TPS helps in creating and generating reports and also presents the reports generated in a pre-designed format either as hardcopy or softcopy.

7. *Query Support*- TPS provides a mechanism enabling its users to raise a query upon the stored data and extract the required information in prescribed format as and when the need arises.

Components of Transaction Processing System

The following are the three main components of a Transaction Processing System (TPS).

1. ***Input-*** A computerised accounting system accepts the complete transaction data as input through the process of data collection, data editing, data validation and data manipulation.

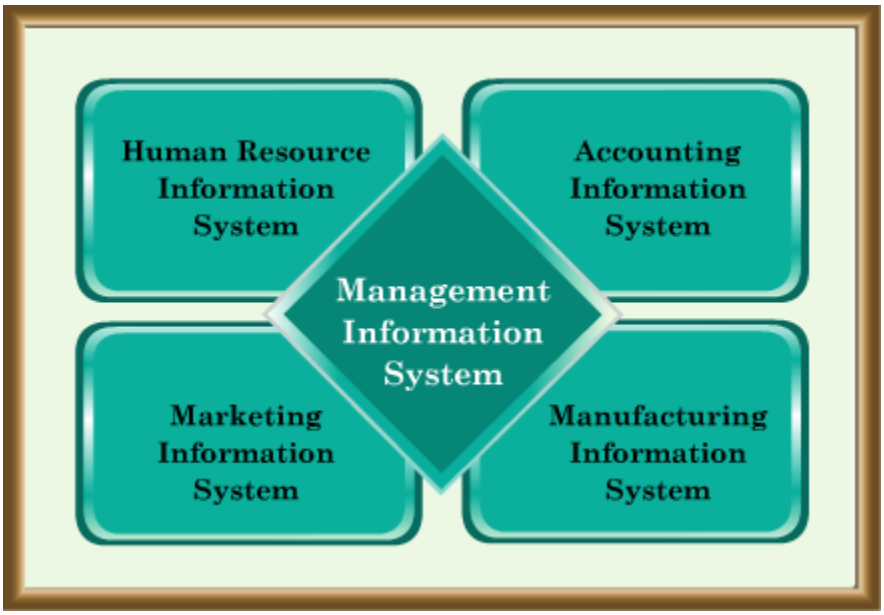
2. ***Storage-*** The system stores the inputted data in computer storage media such as hard disk.

3. ***Output-*** The stored data, through the process of report generation and query support can be retrieved and processed as and when required for generating an accounting report as output.

Management Information System

MIS is a planned system of collecting, processing, storing and disseminating data in the form of information to perform the task of decision making and management of an organisation. An organisation basically operates in an environment, which is surrounded by its suppliers and customers. The informational needs of the organisation emerge from the business processes stratified into its various functional areas.

Thus, in this sense, MIS has functional relationship with other functional management information systems namely Manufacturing Information System, Human Resource Information System, Accounting Information System and Marketing Information System. MIS receives information from these functional information systems and uses the received information to take appropriate decisions.



Accounting Information System
Accounting Information System (AIS) is a system that identifies, collects, processes, summarises, generates and presents information about a business organisation to a wide variety of users. It provides relevant information by processing voluminous accounting data, which is beyond human capabilities.

It provides a glimpse of various organisational activities and maintains a detailed financial record. It acts as a common pool of information from which different departments such as, Production Department, Sales and Marketing Department, HR Department, etc. can fetch useful and relevant information.

The information thus provided, helps the users to take their decisions rationally and accordingly formulate their plans and policies. Thus, it can be said that an efficient AIS enhances the effectiveness and efficiency of an organisation as a whole.

The below mentioned points highlight the important characteristics of AIS:

1. It helps in handling huge volume of accounting and financial transactions of an organisation.

2. It helps in drafting future plans and accordingly setting the future objectives.

3. It acts as a common pool for providing information to different departments besides Accounts and Finance Department.

4. It helps in maintaining the accounting information as per the guidelines laid down by the Law.

5. It helps in meeting the informational needs by generating reports for both external accounting users (investors, creditors, etc.) as well as for the internal accounting users (management, shareholders, etc.).

Role of AIS as a data interface
AIS provides all the useful information to other functional MIS like regarding budget allocated for hiring new employees to HR, etc. It thus serves as an important data point for all other functional departments.

Accounting Reports
When the collected data is processed and manipulated in a useful sense that can be understood by the users without any ambiguity, then it becomes information. When this relevant information is further summarised to meet a particular aim, it is called a report. The contents and the design of the report depends upon the level of management to which it is to be submitted. Various decisions are to be made on the basis of this report. Irrespective of the contents and design, every accounting report must fulfil the following criteria.

(1) Relevance

(2) Timeliness

(3) Accuracy

(4) Completeness

(5) Summarisation

Kinds of Accounting Reports
The various types of reports used in MIS can be broadly categorised as follows.

1. ***Summary Reports*-** These are the reports that summarise all the activities of an organisation. For example, Trading and Profit and Loss Account and Balance Sheet.

2. ***Demand Reports*-** These are the reports that are prepared on the request and need of the management. For example, Bad-Debts report.

3. ***Customer/Supplier Reports-*** These are the reports that are prepared as per the specifications of the management showing various aspects of the suppliers/customers. For example, Report of Top 10 customers.

4. ***Exception Reports-*** These are the reports that are prepared in accordance with some specific conditions or exceptions. For example, Inventory Status Report.

5. ***Responsibility Reports-*** These reports are prepared by the managers who are responsible for their respective departments. For example, Purchase Manager submits a report regarding different aspects of purchase.

Designing of Accounting Reports

Accounting reports should be designed keeping in mind the following points.

1. Clearly specify the objective of particular report.

2. Its presentation and data contained therein is to be designed in such a manner that it fulfils the exact requirements of users.

3. It must contain a query list that defines database manipulation and also help user to do their independent manipulations.

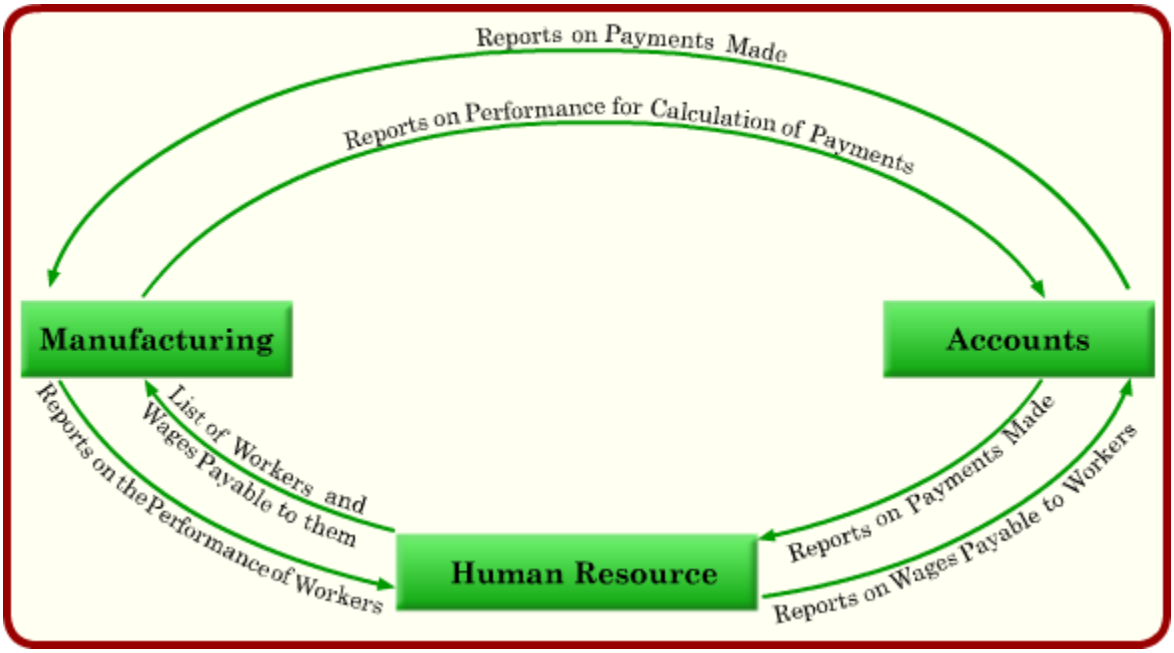
4. The report must contain analysis, conclusions and suggestions at the end.

Data Interface between Information Systems

Accounting Information System is a very crucial element in every business having MIS organisational structure. It involves receiving information from one system and providing information to the other functional MIS. Given below is the relationship and data interface between different sub-components of MIS.

I. ***Relationship between AIS, Manufacturing Information System and Human Resource Information System***

The diagram given below shows the relationship between Accounting Information System, Manufacturing Information System and Human Resource Information System.



Human Resource Information System (HRIS) maintains the records of the employees and calculates the amount of salaries and wages payable to them. It sends a list of workers to the Manufacturing Department. The Manufacturing Department on the basis of this information prepares a report on the performance of each worker and deductions to be made from their wages, if any. Thereafter, this report is sent to both Accounts Department as well as to Human Resource Department. After this, the Human Resource Department sends the report to the Accounts Department to pay the wages.

The Accounts Department with the help of these reports calculates the amount payable and statutory dues and subsequently, makes the final payments to the workers. The report of the final payments is sent to the HR Department and the Manufacturing Department by the Accounts Department.

II. *Relationship between MIS and HRIS*

HRIS provides MIS with the information such as, the qualifications, skills, experiences and past performances of an individual employee. MIS in turn uses this information to take appropriate decisions. This helps in placing the right person with right qualities at right job positions. This also helps in taking decisions regarding promotions and increments of the employees.

III. *Relationship between AIS and Manufacturing Information System*

Business processes in the Manufacturing Department include the following activities.

(a) Preparation of Plans and Schedules

(b) Issue of Material Requisition Form and Job Cards

(c) Issue of Stock and Inventory

(d) Issue of Raw Material Procurement Orders

(e) Handling Supplier Invoices

(f) Payments to Suppliers

The AIS would accordingly include the process of

(a) Purchasing Orders

(b) Payments to Suppliers

(c) Preparing Inventory Status Reports

(d) Preparing Reports of Accounts Payable

IV. *Relationship between AIS and Marketing Information System*

Business processes in the Marketing and Sales Department involve the following activities.

(a) Inquiry Process

(b) Creation of Contacts

(c) Entry of Orders

(d) Dispatching Goods

(e) Generation of Bills to Customers

The AIS would accordingly include the following activities.

(a) Processing of Sales Orders

(b) Authorisation of Credit

(c) Keeping Custody of the Goods

(d) Inventory Status

(e) Shipping Details