Management Information System

by SWAPNIL

Unit 1 and 2

INFORMATION SYSTEM

An information system is a set of computer-based tools for collecting, storing and processing of data in our world.

Businesses and other organizations rely on Information System to:

1. Carry out and manage other operations.
2. Interact with their customers and suppliers.
3. Compete in the market place.

For example:

1. Corporation use Information systems to:
   (a) reach-out to their potential customers through targeted advertisements, messages over the web.
   (b) process financial accounts.
   (c) manage their workforce and inventory.
2. Government use Information systems to:
   (a) provide services to their citizens.
   (b) manage the economy.
   (c) to collect taxes.

Digital goods such as electronic books and software and online services such as e-businesses, e-commerce, and social media are all provided and operated by an information system. A typical information system uses a database to store its data and often these proves have an user interface, where we the users issue commands and can see the results.

Information systems plays a huge rule in all the aspects of our life in our constantly connected digital world.

Types of information systems

Transaction Processing Systems (TPS)

These systems are used to process and record business transactions, such as sales and purchases. They are used to capture and store data, such as financial transactions, customer information, and inventory data.

Management Information Systems (MIS)

These systems provide managers with the information they need to make decisions. They are used to generate reports and analyze data, such as sales figures, customer demographics, and financial performance.

Decision support systems (DSS)

These systems are used to help managers make decisions. They are used to analyze data, such as sales figures, customer demographics, and financial performance, to identify trends and patterns.

Some important characteristics of DSS are:

1. Adaptability and flexibility.
2. High level of interactivity.
3. Ease of use.
4. Efficiency and effectiveness.

5. Complete control by decision-makers.

6. Ease of development.

Expert System

These systems are used to provide expert advice in a specific area. They are used to analyze data and make decisions based on that data, such as diagnosing medical conditions or identifying potential fraud.

How information systems help grow businesses?

Organizations use information systems to run most of their operations from sales and management to manufacturing and inventory management to human resource management and finance.

Information systems are engineers to handle all the data and interactions necessary to keep a business going.

Many of the application and services made possible within the internet can be offered to an organization's users establishing an intranet.

An intranet is a network within an organization that uses network technology to collect, store and share useful information within a business. An extranet connects intranets of business partners so communication between organisations can be possible. Some of these systems such as an electronic fund transfer and emails have been used in traditional businesses as well as e-commerce.

Overall, in current age of ever growing demand and competition in between different businesses, information systems plays a huge role in defining new standards and good customer experiences. Without a well developed information system, managing a business is quite difficult.

BALANCED MIS

A balanced Management Information System (MIS) is a system that provides managers with the right information, in the right format, at the right time, to make informed decisions. It is a system that is designed to balance the needs of different users, such as top management, middle management, and operational staff, by providing them with the information they need to perform their specific tasks.

A balanced MIS includes a combination of both internal and external information sources, such as financial data, operational data, market data, and customer data. It also includes a variety of different reporting and analytical tools, such as dashboards, reports, and scorecards, to help managers make sense of the data and identify trends and patterns.

One of the key features of a balanced MIS is that it is flexible and adaptable. It is designed to be able to grow and change as the needs of the business change. It is also designed to be easy to use, so that managers can quickly and easily access the information they need.

Overall, a balanced MIS is an essential tool for managers to make informed decisions, monitor performance, and achieve strategic goals. It provides a comprehensive view of the business and helps managers to identify and respond to opportunities and challenges in a timely manner.

MIS OF SCHOOL/COLLEGE MANAGEMENT

A Management Information System (MIS) plays a critical role in the management of schools and colleges. It is a computerized system that helps administrators and teachers to collect, store, and analyze data to make informed decisions.

Here are a few ways in which an MIS can benefit school/college management:

1. **Student Information Management:** An MIS can help administrators to manage student information, such as enrollment, attendance, grades, and disciplinary records. This information can be easily accessed and updated, which can help to streamline administrative tasks.
2. **Curriculum Management:** An MIS can help teachers to manage the curriculum, such as creating lesson plans and tracking student progress. This can help to ensure that students are receiving the education they need to succeed.
3. **Financial Management:** An MIS can help to manage the financial aspects of a school or college, such as budgeting, accounting, and reporting. This can help to ensure that resources are being used effectively and efficiently.
4. **Reporting and Analytics:** An MIS can provide teachers and administrators with detailed reports and analytics on student performance, attendance, and other key metrics. This information can be used to identify areas of improvement and to make data-driven decisions.
5. **Communication and Collaboration:** An MIS can facilitate communication and collaboration among teachers, administrators, and students. For example, teachers can use the system to communicate with parents, administrators can use it to communicate with teachers, and students can use it to communicate with teachers.

Overall, an MIS is a powerful tool that can help schools and colleges to manage their operations more efficiently and effectively. It can help to improve student performance, streamline administrative tasks, and ensure that resources are being used effectively.

Hardware and Software requirements

Hardware Interface

Following are the basic requirements to run a Management Information System for a school or a college:

- **A LAN connection** for interacting with the database and local computers.
- TCP/IP protocol for communicating with local hosts.
- A system with a
  - P4 processor
  - 1 Gigabyte of RAM for database memory.

Software Interfaces

- An operating system.
- An IDE for writing programs.
- Programming languages like
  - Microsoft .Net 3.5 and C# .Net 3.5 for writing the code for the project
  - ASP.Net 3.5 for creating the web pages
  - Oracle SQl, mysql, and Microsoft access and other query languages for local and global databases

  are used in schools and colleges along with various Graphical User Interface for login screens and interacting with the database.
- An IDE for writing programs.

E-BUSINESS

Any kind of business or commercial transaction that includes sharing information accross the internet. It constitutes the exchange of products & services between businesses, groups, and individuals and can be seen as one of the essential activities of any business.

E-COMMERCE

E-commerce, short for electronic commerce, is the buying and selling of goods and services over the internet. It refers to any commercial transaction that is conducted online, whether it is the sale of physical products, digital products, or services. E-commerce includes a wide range of activities such as online shopping, online banking, online ticketing, and online reservations.

E-commerce has revolutionized the way people shop and conduct business. It has made it possible for businesses to reach a global customer base, and for consumers to shop from the comfort of their own homes. E-commerce has also made it easier for businesses to track sales, customer behavior, and inventory, which has allowed them to make better decisions and improve their overall operations.

There are different types of e-commerce: B2B (business-to-business), B2C (business-to-consumer), C2B (consumer-to-business) and C2C (consumer-to-consumer).

E-commerce has grown rapidly in recent years due to the increasing popularity of online shopping and the widespread use of mobile devices. This growth has been driven by several factors such as the availability of high-speed internet, the increasing use of mobile devices, and the growing trend of online shopping.

Overall, e-commerce has changed the way businesses operate and has made it easier for consumers to shop, pay and access services online.

Different Types of E-commerce

There are four main types of e-commerce:

1. **B2B (Business-to-Business):** This type of e-commerce involves transactions between businesses, such as a supplier selling products to a retailer.
2. **B2C (Business-to-Consumer):** This type of e-commerce involves transactions between businesses and consumers, such as a retailer selling products to a customer. This is the most common type of e-commerce and includes online shopping sites, such as Amazon or Walmart.
3. **C2B (Consumer-to-Business):** This type of e-commerce involves transactions where consumers sell products or services to businesses, such as a freelancer offering services to a company.
4. **C2C (Consumer-to-Consumer):** This type of e-commerce involves transactions between consumers, such as buying and selling items on a marketplace like eBay or Etsy.

It's easy to understand all four types, B2B is business to business, B2C is business to customer, C2B is customer to business and C2C is customer to customer. Each type of e-commerce is designed to serve a specific need or purpose, and businesses can choose the type that best suits their needs.

SITE LICENCE

A site license is a type of software license that allows a certain number of users within a specific location or organization to use a particular software program. Site licenses are usually sold to businesses, schools, and other organizations that have multiple users who need to access the software.

A site license is typically based on a one-time payment, which gives the organization or location the right to use the software on an unlimited number of computers. This is in contrast to individual licenses, which are sold to individual users and typically require a separate payment for each user.

With a site license, the organization or location can install the software on all of its computers, and users can access the software without

having to purchase individual licenses. This can be a cost-effective option for organizations with many users, as it eliminates the need to purchase multiple individual licenses.

However, it is important to note that site licenses usually come with specific terms and conditions, such as the number of users allowed and the specific location or organization that the license applies to. It's also important to note that Site licenses are usually non-transferable, meaning that the license can't be used by different organization or location.

In summary, a site license is a type of software license that allows a certain number of users within a specific location or organization to use a particular software program, it's cost-effective and can be used by an unlimited number of users.

Network multi-license mean

A network multi-license is a type of software license that allows multiple users within a network or organization to access and use a particular software program. It's based on a one-time payment, which gives the organization the right to use the software on a certain number of computers within the network, it's cost-effective and eliminates the need to purchase multiple individual licenses. However, it usually comes with specific terms and conditions, such as the number of users allowed and the specific network or organization that the license applies to.

What Does Public Domain Software Mean?

Public domain software refers to software that is not protected by copyright and is available for free use, modification, and distribution. This means that anyone can use, copy, modify, and distribute the software without any legal or financial constraints. Public domain software is often created and released by individuals, organizations, or government agencies, who choose to relinquish their rights to the software and make it freely available to the public.

Some examples of public domain software include:

1. Linux: a popular open-source operating system that is freely available to use, modify, and distribute.
2. Apache: an open-source web server that is widely used to host websites and web applications.
3. Python: a popular open-source programming language that is widely used for a variety of applications.
4. Gnu: a collection of open-source software tools that are widely used for a variety of applications.

Public domain software can be an attractive option for businesses, organizations, and individuals who want to use or modify software without incurring any licensing costs. However, it's important to note that public domain software is not always supported and may not have the same level of security and reliability as commercial software.

DBMS

In mainframe and mid-range computer systems, a DBMS is considered an important system software package that controls the development, use and maintenance of the database of computer using organisations. A DBMS programs helps organisation use their integrated collection of data records and files known as databases.

A DBMS also simplifies the process of retrieving information from databases in the form of displays and reports. Instead of having to write

computer products to extract information encloser can ask simple questions in a query language. Thus many DBMS packages provide fourth generation language and other application development feature.

Feature, Advantages of DBMS.

DBMS is a set of program that allows access, retrieval and use of that data by considering appropriate security measures. The DBMS is really useful for better data integration an its security.

Advantages of DBMS:

1. **Data Integrity**: A DBMS ensures data integrity by enforcing rules and constraints to prevent data inconsistencies and errors.
2. **Data Security**: DBMS provides security features such as user authentication and access control to protect data from unauthorized access and manipulation.
3. **Data Backup and Recovery**: DBMS provides the capability to backup and recover data in case of system failure or data loss.
4. **Data Consistency**: DBMS ensures data consistency by ensuring that data is accurate and up-to-date across different applications and users.
5. **Data sharing**: DBMS allows multiple users to access and manipulate data simultaneously, which improves collaboration and data sharing.
6. **Data Scalability**: DBMS can handle large amounts of data and can be easily scaled to accommodate growth and changing needs.
7. **Improved Data Access**: DBMS provides powerful query and data retrieval capabilities, which allows users to easily access and analyze data.
8. **Data independence**: DBMS allows users to access data in a consistent way regardless of the underlying physical structure of the data.
9. **Reduced data redundancy**: DBMS helps to reduce data redundancy by storing data only once and providing access to it as needed.
10. **Data validation**: DBMS checks the data before storing it in the database, which ensures that the data is accurate and complete.

Application of DBMS

Customer Relationship Management

CRM database can help small business manage its customers. A CRM database organizes all the information a company has about its accounts, contacts, leads and opportunities.

Inventory Tracking Database

It helps a retail business manage how much inventory is in a warehouse, in a storage room and on store shelves.

Payroll and Scheduling Database

It simplifies scheduling and help prevent payroll errors. An employee database contains such fields as hourly wage, salary or commission, tax withholding rates, year-to-date income and accrued vacation time.

Business Data Analysis

Databases make the process of analyzing data and predicting future trends easier.

Difference between TPS and MIS

	TPS	MIS
Input	Transaction/events	Output from TPS
Output	Data entry, listing, sorting, merging and updating.	Routine reports, simple models, low level analysis.
Users	Operational personals, lower-level managers, supervisors.	Middle-level manager
Goal	Records and processes transactions.	Production of summary and exception reports.
Decision & support	Provides decision support to lower-level managers	Provide decision supports to tactical-level managers