SNS COLLEGE OF TECHNOLOGY, COIMBATORE-35

(AN AUTONOMOUS INSTITUTION)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

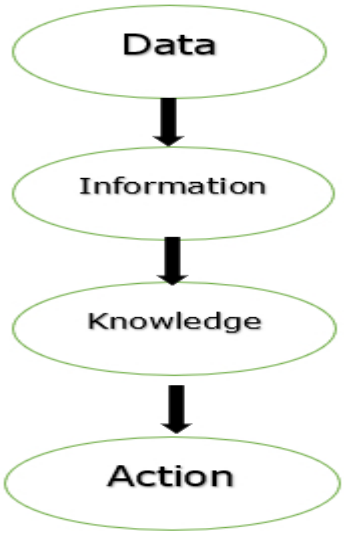
19CST202-DATABASE MANAGEMENT SYSTEM

UNIT-I

Introduction

Purpose of Database System:

- Data into information.
- Information into knowledge.
- Knowledge to the action.



Drawback:

- Data redundancy and inconsistency: Different file formats, duplication of information in different files.
- Difficulty in accessing data: To carry out new task we need to write a new program.
- Data Isolation − Different files and formats.

Uses:

- Data independence and efficient access of data.
- Application Development time reduces.
- Security and data integrity.
- Uniform data administration.
- Concurrent access and recovery from crashes.

Application:

- Railway Reservation System
- Library Management System
- Banking
- Educational Institutions
- Social Media Websites

Views of data:

- The data is visualized at each level of data abstraction? **Data abstraction** allow developers to keep complex data structures away from the users.
- The developers achieve this by hiding the complex data structures through **levels of abstraction**.
- The **data independence**. While changing the data schema at one level of the database must not modify the data schema at the next level.

1. Data Abstraction
2. Data Independence
3. Instance and Schema
4. Key Takeaways

Data abstraction:

- Data abstraction is **hiding the complex data structure** in order to **simplify the user's interface** of the system.
- It is done because many of the users interacting with the database system

Data Independence:

Data independence defines the extent to which the data schema can be changed at one level without modifying the data schema at the next level.

Instance and schema:

- The information stored in the database at a particular point of time.
- Whenever we talk about the database the developers have to deal with the definition of database and the data in the database.
- The definition of a database comprises of the description of what data it would contain what would be the relationship between the data. This definition is the database schema.