

LESSON-38 DATABASE MANAGEMENT SYSTEM


SUMMARY

A database is a collection of data for generating useful and decision worthy information. It consists of an organized collection of interrelated data for one or more users, in a digital form. We find several examples of databases in our daily life like a database for school or a bank, library, bus/railway reservation system etc. Database Management System offers a logical way of storing data in a systematic manner which overcomes the several limitations such as data redundancy and inconsistency, data duplicity, difficulty in accessing data, data isolation, and data security problems. These difficulties, among others, prompted the development of database systems which represents data into the relational tables for the logical view of the database.

DEFINING DATABASE

In order to understand how data is stored in a database to produce reliable and meaningful information, let us take an hypothetical case of an accounting database for maintaining data relating to accounting transactions of a business firm named Unique Electronics. The process of structuring a database comprises following elements:


Requirement Analysis

The data requirements are used as a source for database design such as 


- Data to be stored in the database.

- Frequency of the data to be modified.
- Users types of database.
- Level of hardware and operating system available.
- Will the database (back end) be used by any other front end application?

IDENTIFICATION OF DATA TO BE STORED INTABLES

- Recall the journal entries recorded in case of manual system.
- The individual accounts affected by these transactions are grouped under five categories: 
 - Capital....5
 - Liabilities....4
 - Assets.....3
 - Revenue 2
 - Expenditure...1
- Based upon these account groups, the transactions are to be analysed.

MICROSOFT ACCESS -INTRODUCTION

MSAccess is one of the popularly used Data Base Management System to create,store and manage database. Access has certain capabilities, which bring it closer to anideal Data Base Management System (DBMS). Before we take up the task of database design using Access, we will have to first start up the Microsoft Access Application: 

Start > All Programs > Microsoft Office > Microsoft Access 2007

Tables, Queries, Forms and Reports are main components of MS Access. Others being Pages, Macros and Modules. The *Table object* enables the designer to create data tables with their respective fieldnames, data types and properties. *Queries* are meant to create the SQL compatible query statement, store data and retrieve both data and information. *Forms object* creates an appropriate user interface to formally interact with the back end database, defined by tables and queries. *Report object* is used to create various reports as per the requirement of the end user.

referred to as 'back-end' while the interactive program, that includes user interface, is termed as 'front-end' of a database application.

- MS-Access is an example of 'desktop database'. Oracle, SQL Server, IBM-DB2 is examples of 'server databases', Desktop databases may be satisfactory for SOHO (Small Office Home Office) organisations as they offer inexpensive and simple solutions to many of business data storage and processing requirements.

CREATING TABLES IN ACCESS

Follow the following steps to create Tables in Access

Click at *Tables* object of Access followed by double click at create *table by design view*. A table window appears which has three columns: Field Name (*refers to the column name of the table being created.*), Data Type (*attribute of each defined column, refer figure 2*) and Description (*It is optional and the designer can provide description of the column for clarity.*).

- In order to provide security and consistency of data, database is not directly accessible to users. Any addition or retrieval of information from database is done by user-friendly programs. Database is thus rightly