Introducing Databases

- A database refers to a collection of related data and a database system is basically a computer based record keeping system.

BASE - the dbMS of openoffice.org

- Database Functioning

Database Management System (DBMS) resolves following issues:

(i) data inconsistency

(ii) data redundancy

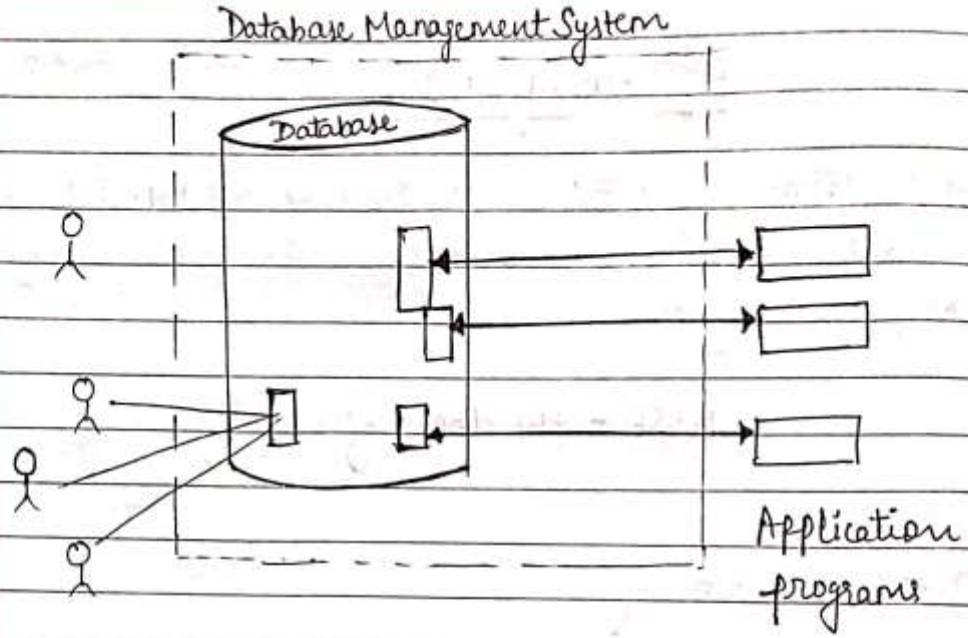
(iii) Unshareable data

(iv) Unstandardized data - Not in proper format

(v) insecure data

- How Database works?

In Database Management system (DBMS) all data is kept at one place and all applications that require that data refer to centrally maintained Database.



- Centrally Controlled Database System

→ Changes will be made to data at one place and changed information will be available to the Applications that are referring to it.

- Advantages of Databases

(1) Databases Reduce the data Redundancy (Duplication) to a large extent.

(2) Databases can control data inconsistency to a large extent.

Multiple mismatching copies of same data is known as Data inconsistency.

(3) Storing of large amount of data

(4) Data standards as per the guidelines of certain company can be maintained using Database

(5) Databases can ensure data Security

Flat vs. Relational Databases

• When data is stored in one file, it is called Flat database. eg Spreadsheet	• When data is stored in multiple tables that are linked via common fields, it is called Relational Database. • (RDBMS) - Relational Database Management System is the software for handling such database. eg: Microsoft Access, BASE, Oracle, MySQL etc.

BASE - DBMS of openoffice.org

- File extension of a BASE database is .odb

⊙ BASE offers following features for managing data :

(i) Tables
(ii) Queries
(iii) Forms
(iv) Reports

(i) Table in a Relational Database is called Relation

Components of Table

Fields | Records

(Primary Key) Fields / Attributes

Salesman No.	First Name	Sales	Target
EA-01	Rohan	2200	2000
SO-02	Rishi	2300	1800
EA-23	Rohan	2800	2600

Records

Types of Keys in table

(1) **Primary Key** - identifies Records uniquely

(2) **Composite Primary key** - when two field values in a table make a unique key or identifies records uniquely

(3) **Alternate key** - A Key apart from primary key, that identifies record uniquely

(4) **Candidate key** - Primary keys + Alternate keys

(5) **Foreign key** - when a particular key is Primary key in other table, it is called foreign key.

Table can have Multiple Foreign keys

But only Single Primary key.

(1) Primary Key

Primary key

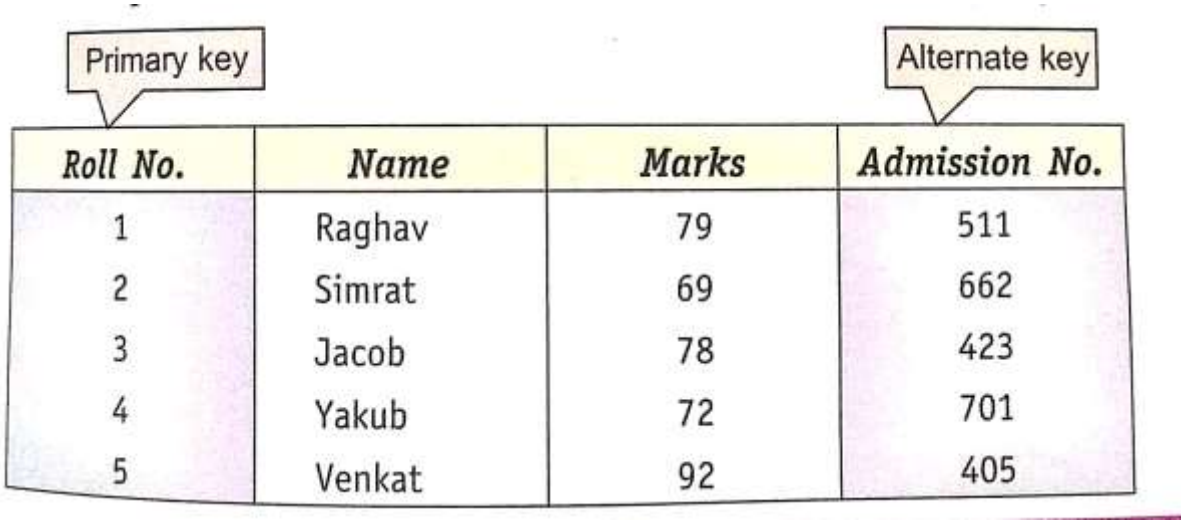
Roll No.	Name	Marks	Admission No.
1	Raghav	79	511
2	Simrat	69	662
3	Jacob	78	423
4	Yakub	72	701
5	Venkat	92	405

(2) Composite Primary Key

Composite Primary key

Roll No.	Project	Name	Grade	Teacher No.
1	S. St.	Raghav	A	SS01
1	SUPW	Raghav	B	SU05
2	S. St.	Simrat	A	SS04
2	SUPW	Simrat	A	SU05
3	S. St.	Jacob	B	SS01
3	SUPW	Jacob	B	SU02

(3) Alternate Key



Roll No.	Name	Marks	Admission No.
1	Raghav	79	511
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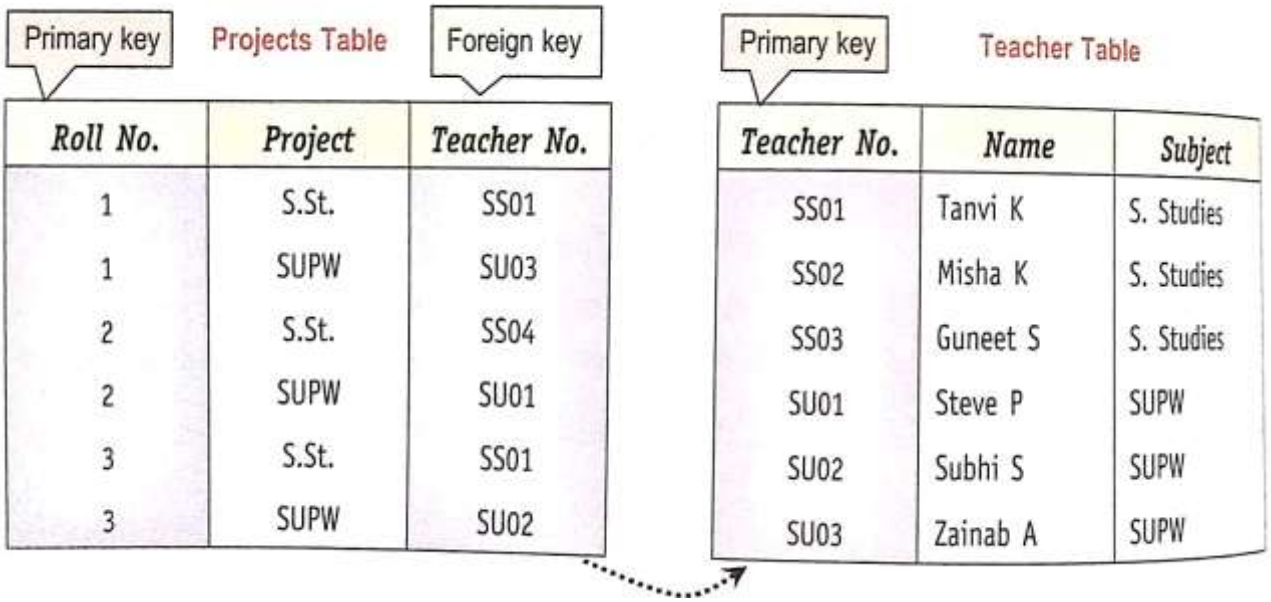
(4) Candidate Key = Primary Key + Alternate Key

(5) Foreign Key



Roll No.	Project	Teacher No.
1	S.St.	SS01
1	SUPW	SU03
2	S.St.	SS04
2	SUPW	SU01
3	S.St.	SS01
3	SUPW	SU02

Teacher No.	Name	Subject
SS01	Tanvi K	S. Studies
SS02	Misha K	S. Studies
SS03	Guneet S	S. Studies
SU01	Steve P	SUPW
SU02	Subhi S	SUPW
SU03	Zainab A	SUPW

(ii) Query is a statement that provides a particular data as per the conditions and specifications.

(iii) Form is an interface in user specified layout.

Users can view, enter and change data directly in the table using a form.

(iv) Report is data in printed format.

It is a formal, presentable printed document in a formatted manner.

Ques. How to design a database?

Ans. Designing of database should be done effectively, accurately and efficiently.

Steps in designing database are as under :-

(1) Determine the purpose of your database

(2) Determine the tables you need

(3) Determine the fields you need

(4) Identify the field or fields with unique values in each records

(5) Determine the relationship b/w tables

(6) Refine your design

(7) Enter data and create other database Objects

Creating Database and Tables

- Starting OOo Base
- BASE window components -
  - (i) Title Bar
  - (ii) Menu Bar
  - (iii) Toolbar
  - (iv) Database window
  - (v) Object Buttons — Tables, Queries, Forms, Reports etc.
  - (vi) Status Bar

• Creating Base Database

(i) Creating New Database

(ii) opening an Existing Database

(i) Creating New Database

(i) Click on create new database

(ii) Click Next

(iii) Click on ☑ open the database for editing

☑ Create tables using the table wizard

(iv) Click Finish and give name to your database

(ii) opening an Existing Database

(i) Select open an existing database file

(ii) Select from Recently used

or

Browse from the folders

(iii) Click Finish

- Creating Tables with Table Wizard

(i) Click on the table

(ii) Click on use wizard to create table

(iii) Select category
- Business
- Personal

(iv) Specify fields for table

(v) Set Field Types and Formats

(vi) Set Primary key

(vii) Specify name for the table

(viii) Click Finish

(ix) Enter Data and Save it.