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***Subject*** ***DataBase***
***Dept*** ***BS(SE)***
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**Question:**
(1)
**Answer:** A candidate key is a simple or composite key that is unique and minimal. It is unique because no two rows in a table may have the same value at any time. It is minimal because every column is necessary in order to attain uniqueness. Every table must have at least a single candidate key.
A table can have multiple candidate keys but only a single primary key.

**Example:** In the given table stud ID cell are candidate keys which help us to identify the student record in the table.

**Candidate key**

| ID | Name | Semester | Department | Cell |
|---|---|---|---|---|
| 1 | Sania | 1 | CS | 03334324234 |
| 2 | Romaisa | 1 | CS | 03335399123 |
| 3 | Alina | 1 | CS | 03150034224 |

| | | | | |
|---|---|---|---|---|
| 4 | Ayeza | 3 | CS | 03455559822 |

**(2)**

**Answer: Data Redundancy**: Exists when unnecessarily duplicated data are found in the database.

- For example a customer's telephone number may be found in Customer file in the sales agent file and in the invoice file.
- Data redundancy is symptomatic of a computer file system given its inability to represent and manage data relationships.
- Data redundancy also result of poorly designed database that allow the same data to be kept in different locations.

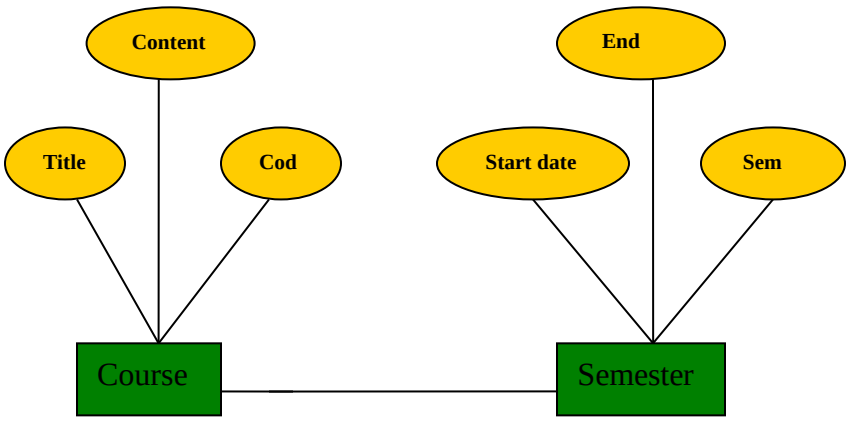
**Data Integrity:** he fundamentals set of rules implemented for the purpose of maintaining accuracy reliability and consistency in data.

- Helps to avoid accidental deletion of data.
- Prevents the entry of invalid data in database.

(3)

**Answer: Multivalued Attributes:** A multivalued attribute can have more than one value at a time for an attribute.

**For example:** The skills of a Semester in which there is a number of semester And start of semester and end of semester means duration of semester. In semester there is number of courses and the name of courses and there names and content and the code of course.



**(4)**

**Answer: Database Approach:** A person a place an object an event or a concept in the users environment about which the organization wishes to maintain data. Relational database that represent data as a collection of tables in which all data relationships are represented by common values in related tables.

A well structured database established the relationships between entities that exist in organization data so that desired information can be retrieved.

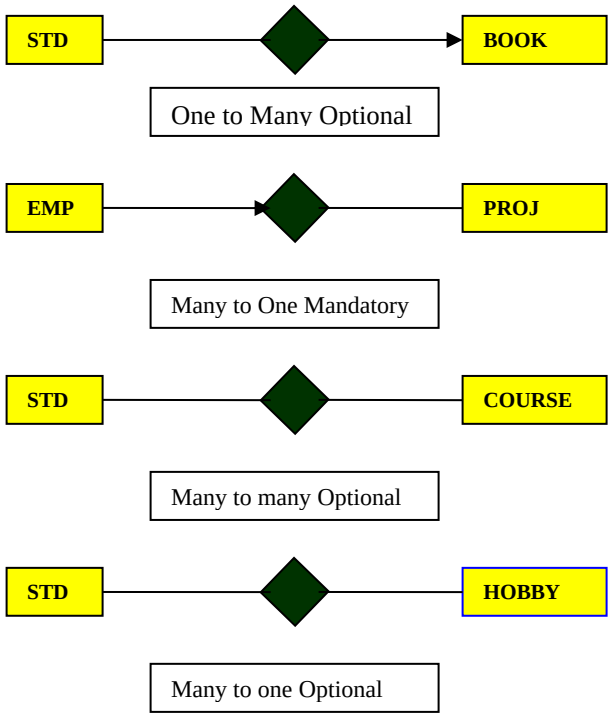
**(5)**

**Answer:** A Mandatory relationships is shown with a vertical line next to the cardinality Must be at least on entity.

An Optional relation is shown with a hollow circle next to the cardinality Maybe 0 to many of entity B.

Many to many will cause problems with data as we can't pinpoint the link.

**Example:**




**( ER Diagram)**

**(6)**

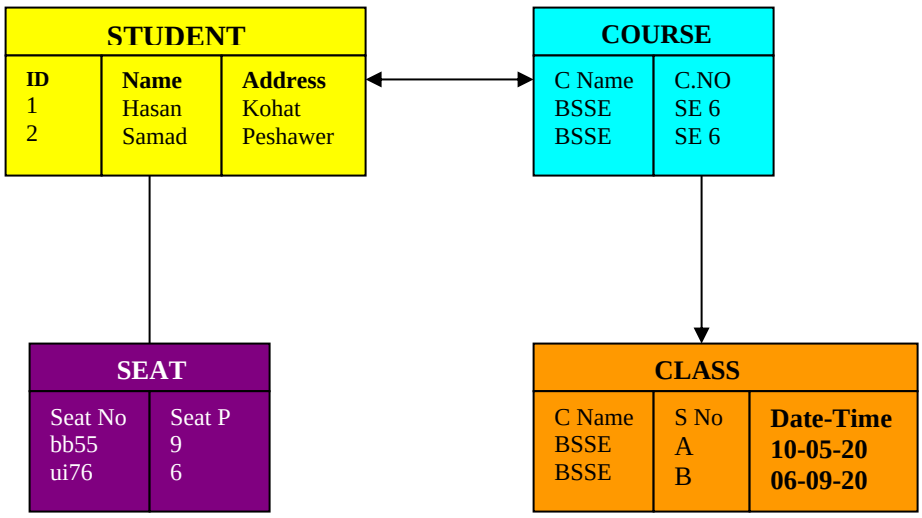
**Answer:** Need for explicit backup for a centralised and shared database to be accurate and available all times a comprehensive procedure is required to be developed and used for providing backup copies of data and for restoring a database when damage occurs. A modern DBMS normally automated many more of the backup tasks than a file-oriented system.

**Question 3:**

**Answer:** Some of the method are automated and some of them are manual. ER diagram mainly comprise of Entity and its attributes. Relationship which is associated among entities.

**Mapping Process:**

(1) Create table for each entity.
(2) Entities attributes should become fields of table with respective data type.
(3) Declare primary key.
(4) Add the primary key of identifying entity set.



## Question 2:

**Answer:**