DATABSE MANAGEMENT SYSTEMS LAB

Batch: I & II **Date: 4th & 6th July 2018**
(Week-3)

note: all the students must come well prepared for the lab. Solve all the exercises and get your observations marked during the lab session itself.

Lab Objectives

1. Convert the ER-diagram into a logical schema.
2. Identify 1-1, 1-M, M-1 & M-N relationships and their associated primary and foreign keys.
3. Identify situations for foreign key requirements
4. Write CREATE table statements with column specifications including data types.
5. Able to alter, modify and update the tables.

Supplementary Reading

Relationship sets

A **relationship** is an association among several entities or to an entity itself. A **relationship set** is a set of relationships of the same type. The number of entity sets that participates in a relationship set is called the **degree of the relationship set**.

For eg., a unary relationship set is of degree 1, a binary relationship set is of degree 2, a ternary relationship ship set is of degree 3.

Mapping cardinalities, or cardinality ratios, express the number of entities to which another entity can be associated via a relationship set.

One to One: An entity in A is associated with at most one entity in B, and an entity in B is associated with at most one entity in A.

One to Many: An entity in A is associated with any number (zero or more) of entities in B, and an entity in B, however can be associated with at most one entity in A.

Many to One: An entity in A is associated with at most one entity in B. An entity in B, however can be associated with any number (zero or more) of entities in A.

Many to Many : An entity in A is associated with any number (zero or more) of entities in B, and an entity in B is associated with any number (zero or more) of entities in A.

Alter Table : Alter tale changes the structure of the table. For eg., you can add or delete columns, create or destroy indexes, change the type of existing columns, or rename columns or table itself.

Syntax:

To drop foreign key `ALTER TABLE tbl_name DROP FOREIGN KEY fk_symbol ;`

To add foreign key `ADD CONSTRAINT name FOREIGN KEY (....) ... ;`

To rename the table from t1 to t2 `ALTER TABLE t1 RENAME t2;`

To change column a from INTEGER to VARCHAR NOT NULL (leaving the name the same)

```
ALTER TABLE t2 MODIFY a VARCHAR(10) NOT NULL;
```

To remove column c `ALTER TABLE t2 DROP COLUMN c;`

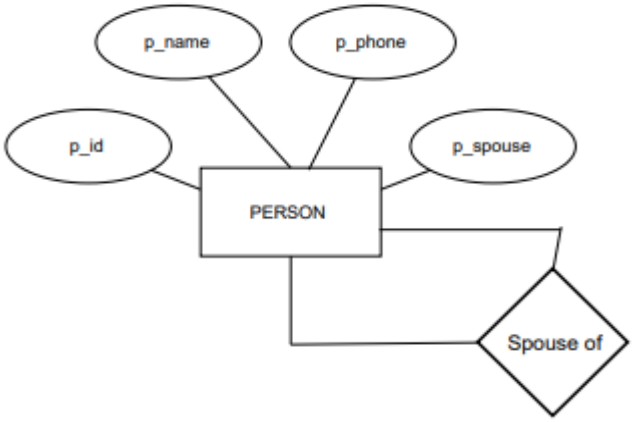
Update : It is a DML statement that modifies rows in a table.

Syntax :

```
UPDATE table_references
SET assignment_list
[WHERE where_condition]
```

Lab Exercises

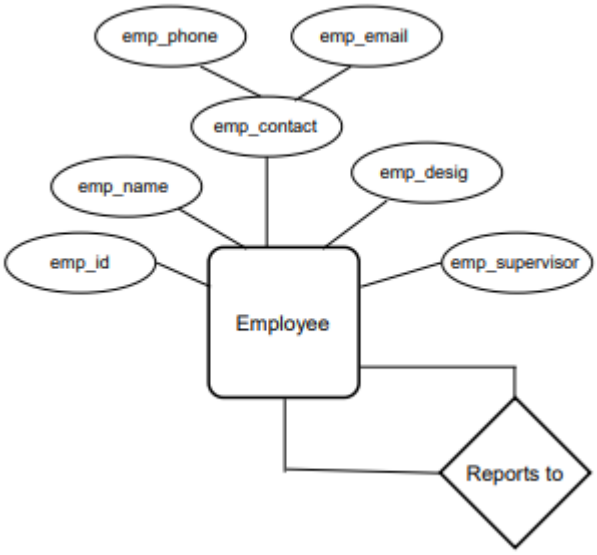
ER Diagram - 1



q1. Identify the relationship, mapping cardinalities, data type of attributes, list down the constraints before you write the schema.

q2. Write the logical schema, create a table and insert the data without violating the key constraints. (constraint clause can be inline or external)

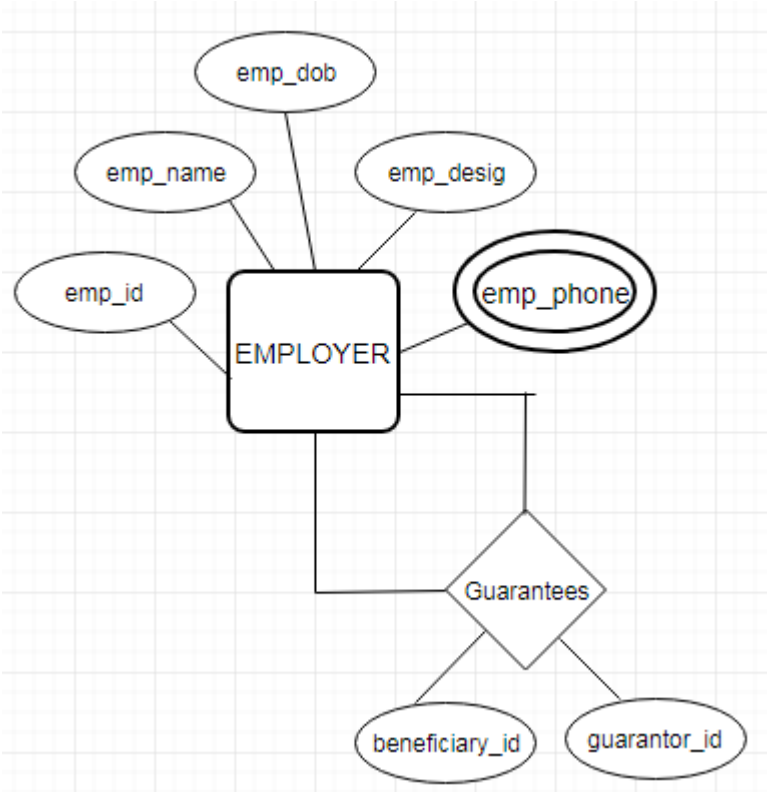
ER Diagram - 2



q1. Identify the relationship, mapping cardinalities, data type of attributes, list down the constraints before you write the schema.

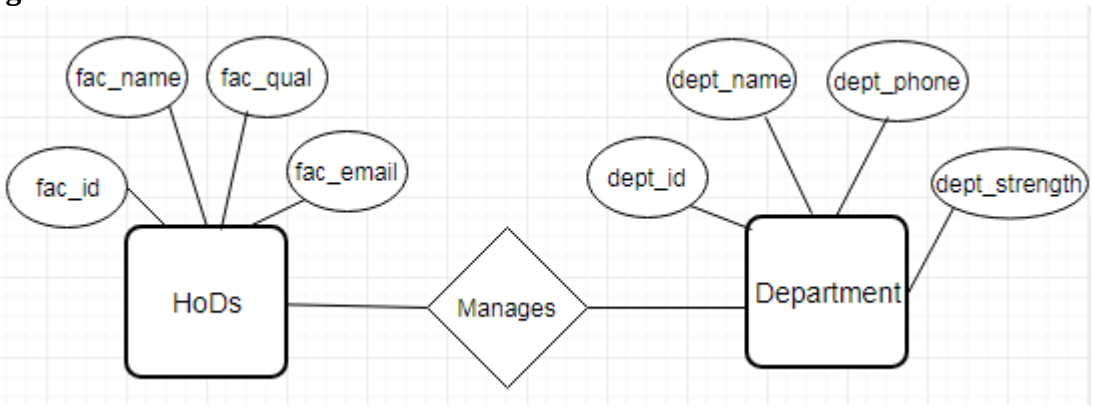
q2. Write the logical schema, create a table and insert the data without violating the key constraints.

ER Diagram - 3



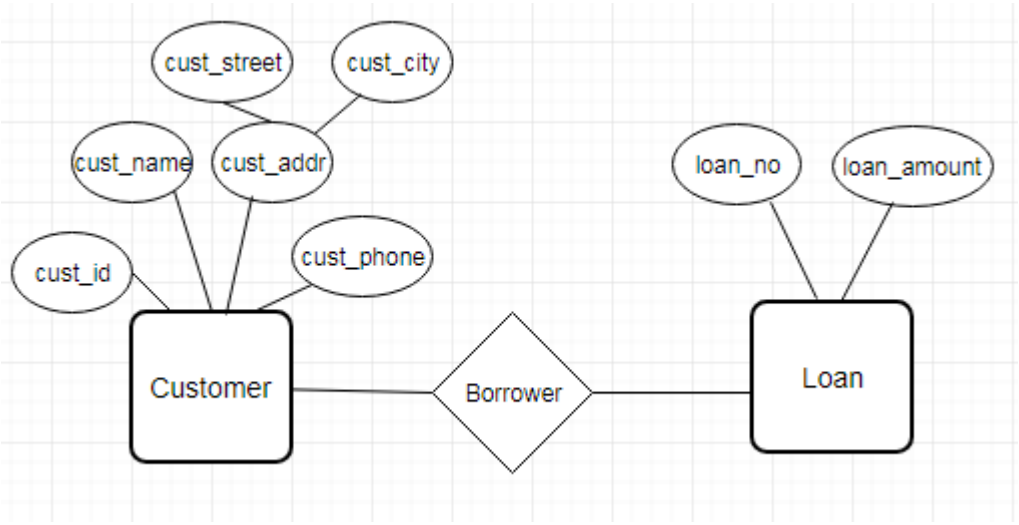
q1. Identify the relationship, mapping cardinalities, data type of attributes, list down the constraints before you write the schema.
q2. Write the logical schema, create a table and insert the data without violating the key constraints.

ER Diagram - 4



q1. Identify the relationship, mapping cardinalities, data type of attributes, list down the constraints before you write the schema.
q2. Write the logical schema, create a table and insert the data without violating the key constraints.

ER Diagram - 5

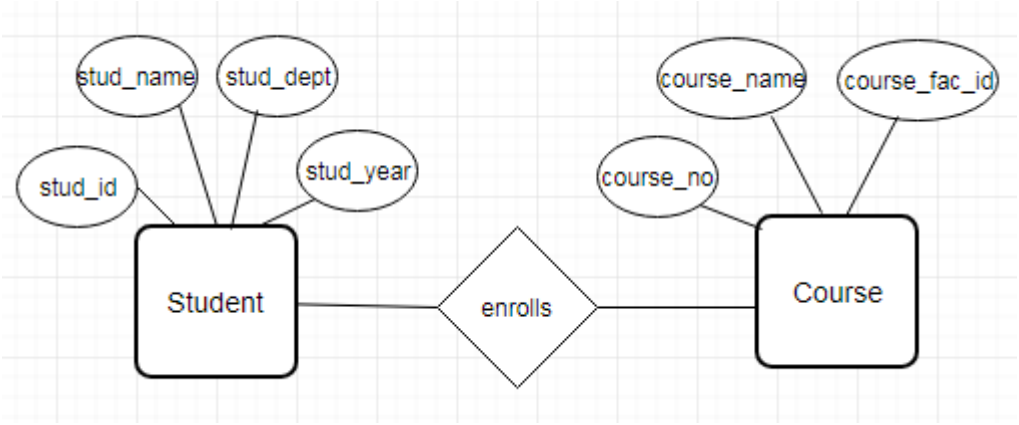


One customer can take many loans.

q1. Identify the relationship, mapping cardinalities, data type of attributes, list down the constraints before you write the schema.

q2. Write the logical schema, create a table and insert the data without violating the key constraints.

ER Diagram - 6



Student can enroll into any number of courses.

q1. Identify the relationship, mapping cardinalities, data type of attributes, list down the constraints before you write the schema.

q2. Write the logical schema, create a table and insert the data without violating the key constraints.

Q. Select a table you created in this lab and do the following ;

a. rename a column
b. modify the data type
c. add constraints
d. drop a column
e. update the row values.