Laboratory work 4

1.

a) Main phases of database design

- Conceptual Design

The data is stored according to user needs, initially forms the ER model, ER diagram. Including identify entity type, relationship type, associate attributes with entity, determine attributes domain and determine key types.

- Logical design

Mainly to realize the conversion from E-R model to relational model by converting E-R diagrams into tables;

Including determine relationship types between entities.

For Example: 1-1, many - 1, n - m;

- Physical design

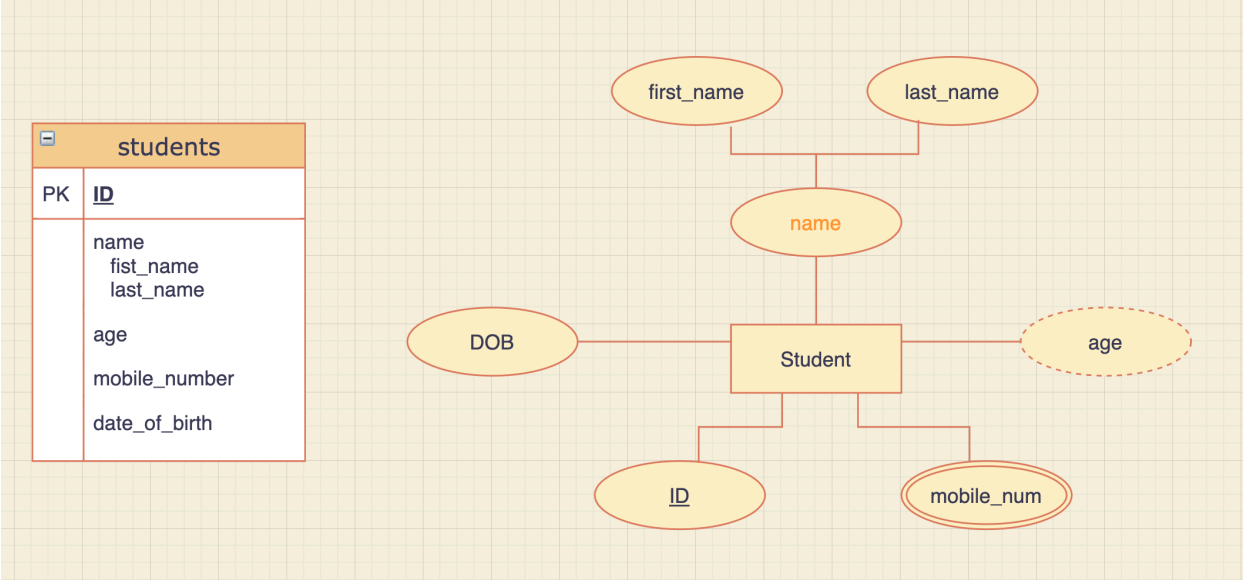
The main thing is to choose the appropriate storage structure and access path for the designed database; Here, we must use DBMS (database management system). Insert data after all this, and finally we can test for the database.

b) Entity-relationship (ER) data model

An ER model is usually the result of systematic analysis to define and describe what is important to processes in an area of a business. It is usually drawn in a graphical form as boxes (entities) that are connected by lines (relationships) which express the associations and dependencies between entities.

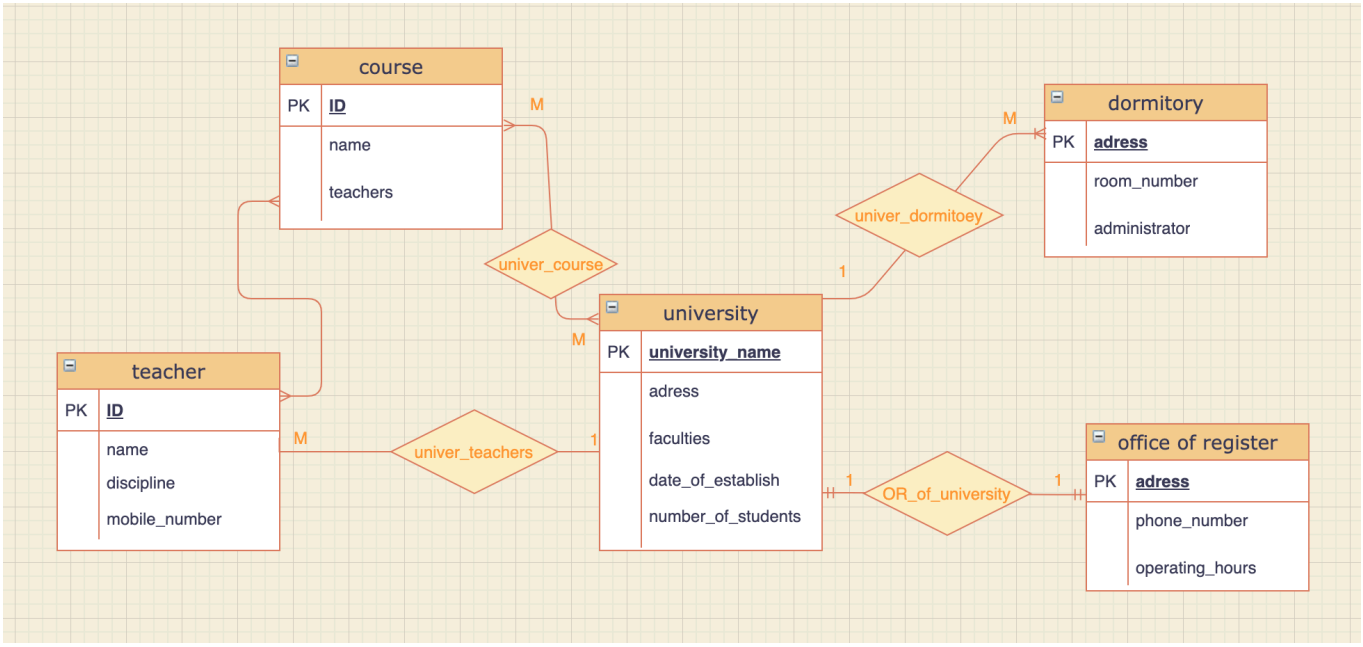
We can use DBMS to make a ER model to help us make clearly data structures in different situations, and organize messy datas and relationships planning into a set of models.

2. a)

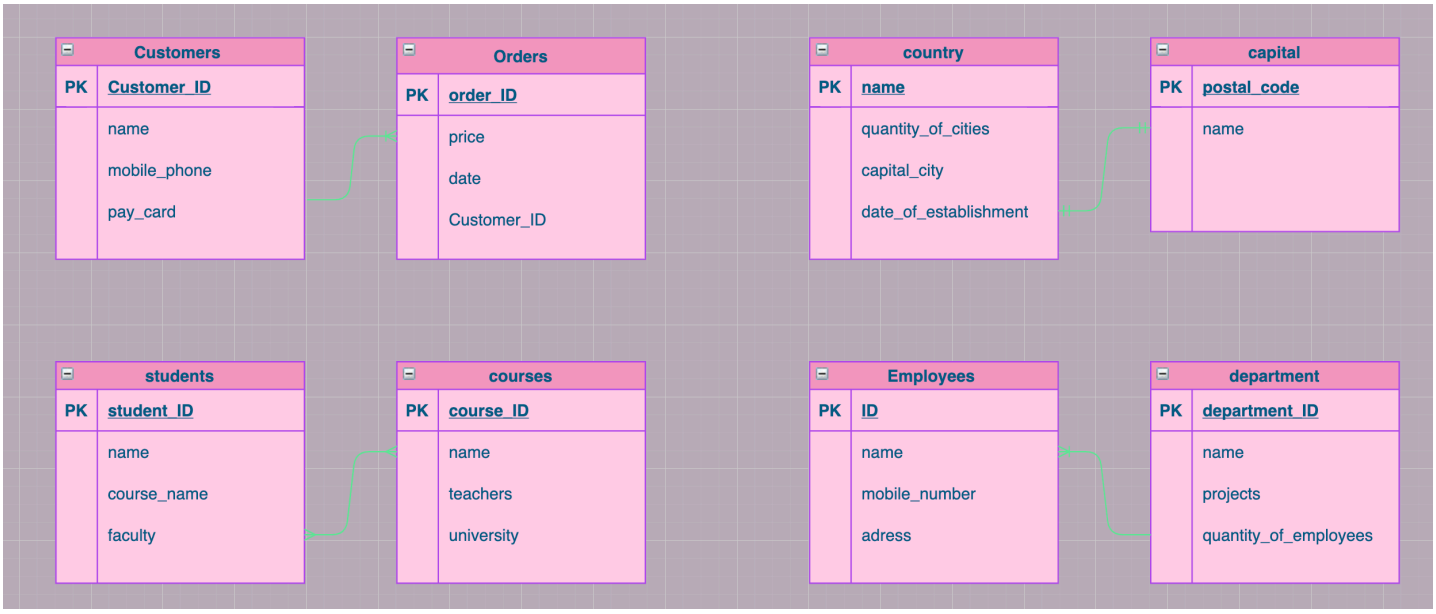


b) Create entities **“University”, “Course”, “Dormitory”, “Teacher”, “Office of the Registrar”** with at least 3 attributes each. (Entity types should be correct on data model)

(4. Create ER data model with relations using data from the second task.)



3. Give examples for **one-to-many, one-to-one, many-to-many, many-to-one** relations. (Draw the examples as a scheme)



5. Create ER data model for IT company. (**At least 5 entities and 8 relations**)