

## Laboratory work 4

1.

a) What are the main phases in the database design? What is done on each development phase?

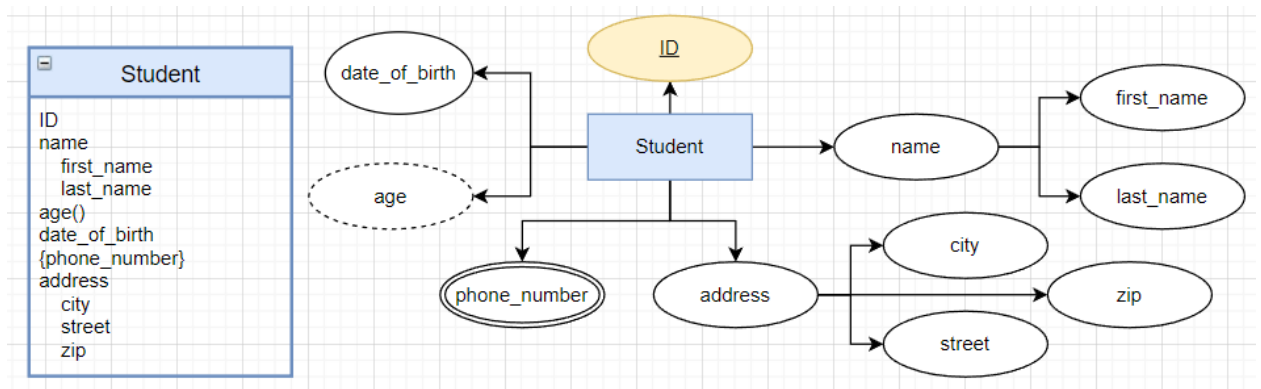
The main phases in the database design: conceptual-design, logical-design and physical-design. Conceptual design is an early phase of the design process, in which the broad outlines of function and form of something are articulated. In the logical-design phase, the designer maps the high-level conceptual schema onto the implementation data model of the database system that will be used. In physical-design phase the physical features of the database are specified.

a) What is the entity-relationship (ER) data model?

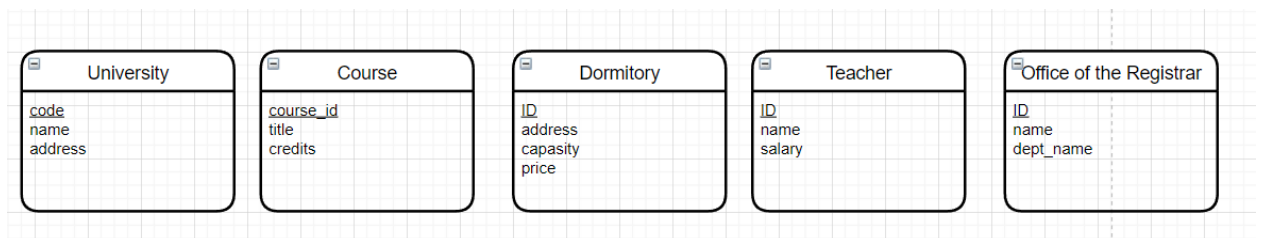
Entity Relationship Model (ER Modeling) is a graphical approach to database design. It is a high-level data model that defines data elements and their relationship for a specified software system.

2.

a) Create entity “Student” with at least 5 attributes (One for each type of attribute: simple, composite, derived, multivalued)

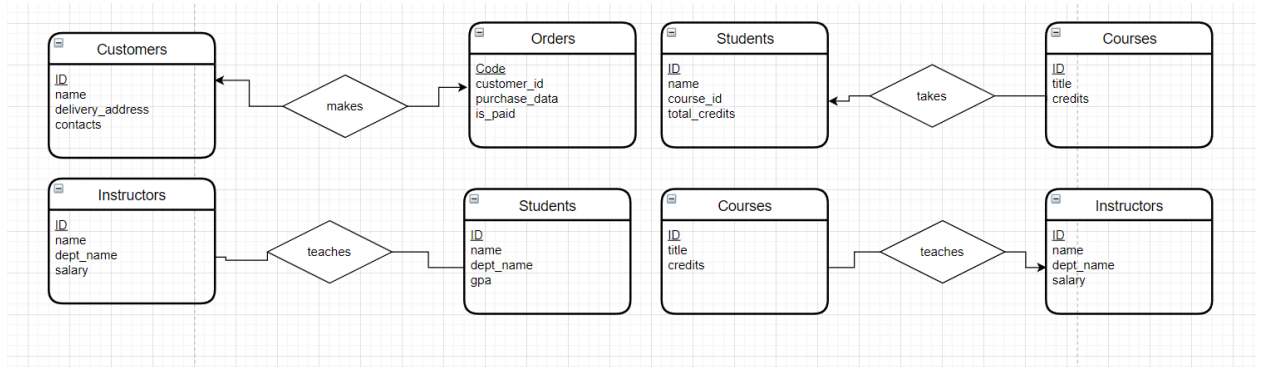


b) Create entities “University”, “Course”, “Dormitory”, “Teacher”, “Office of the Registrar” with at least 3 attributes each. (Entity types should be correct on data model)

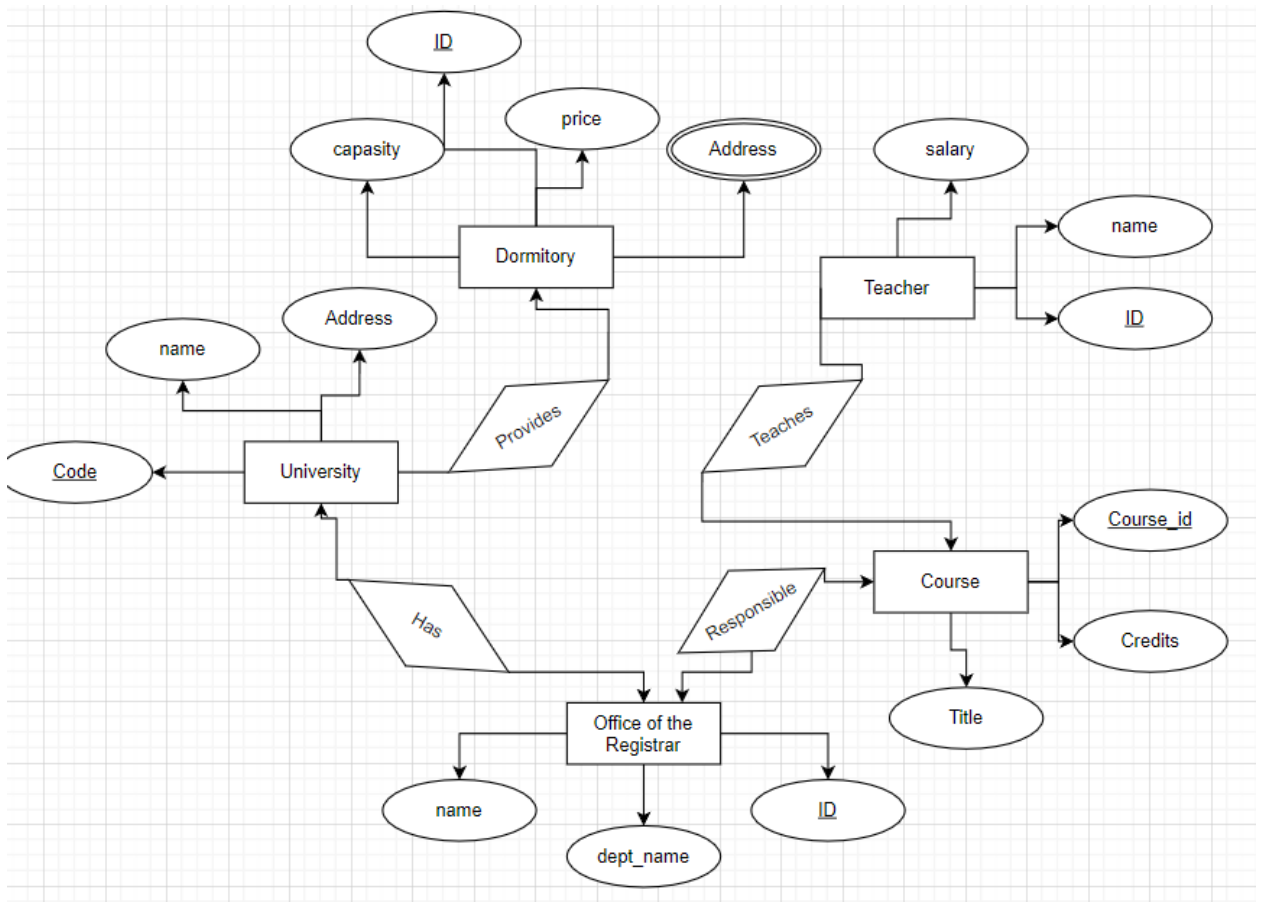


3. Give examples for one-to-many, one-to-one, many-to-many, many-to-one

relations. (Draw the examples as a scheme)



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



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