

Laboratory work 4

Task-1

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

3 phases. Initial phase – characterize fully the data needs of the prospective database users.

Second phase -- choosing a data model

* Applying the concepts of the chosen data model

Translating these requirements into a conceptual schema of the database.

Describe the kinds of operations (or transactions) that will be performed on the data.

3rd - implementation of the database:

Logical Design –Deciding on the database schema:

* Database design requires that we find a “good” collection of relation schemas.

* Business decision –What attributes should we record in the database?

* Computer Science decision –What relation schemas should we have and how should the attributes be distributed among the various relation schemas?

Physical Design – Deciding on the physical layout of the database

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

Entity Relationship Model (covered in this chapter)

* Models an enterprise as a collection of entities and relationships

* Entity: a “thing” or “object” in the enterprise that is distinguishable from other objects

* Described by a set of attributes

2)

a)

Student
ID
Name
date-of-birth
Age
Year-of-study
University-ID

Teacher
Teacher-id
Name
first-name
last-name
discipline

b)

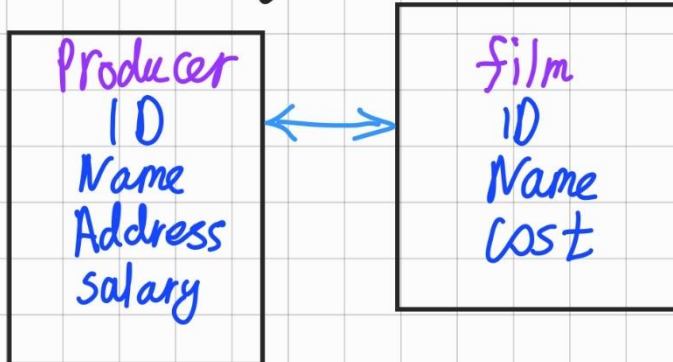
University
dept-name
faculties
Address
Street
street-number
University-ID

Course
title
instructors
credits

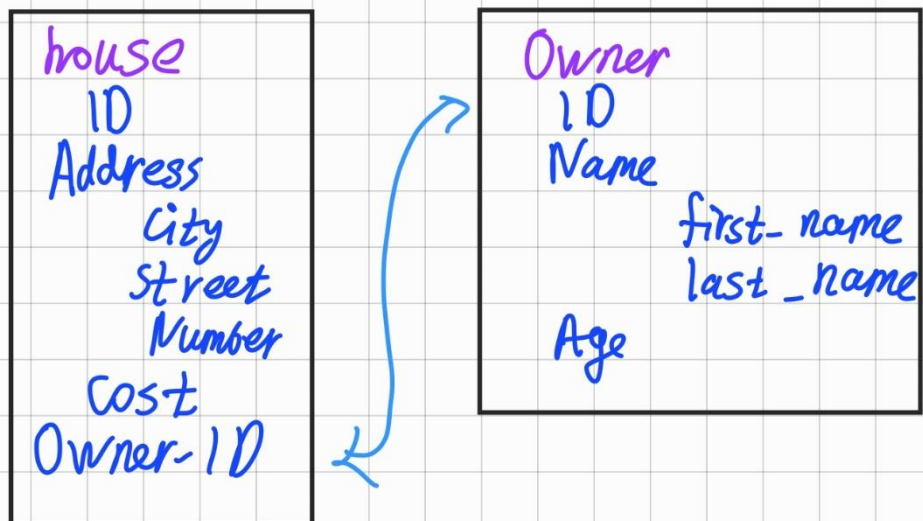
Dormitory
university-ID
Address
capacity

Office-of-the-Registrar
Name
first-name
last-name
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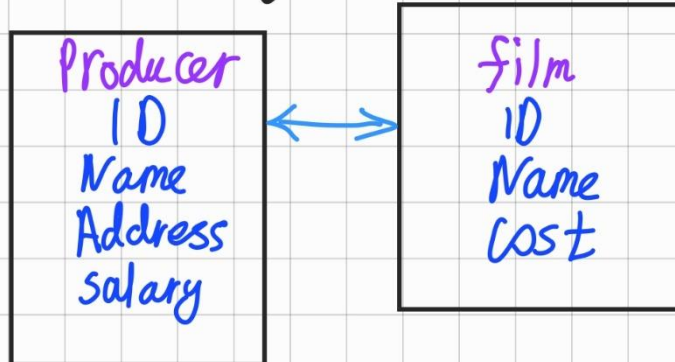
3) many - many



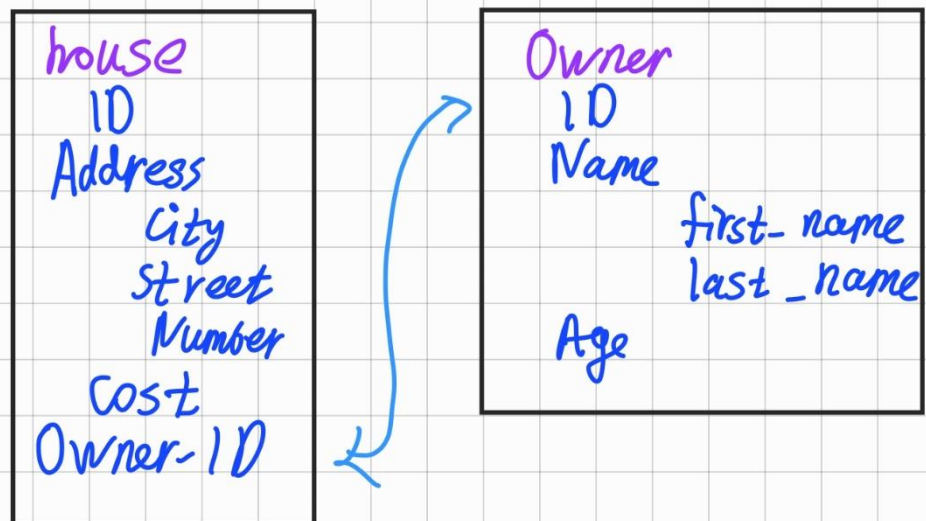
4) many - 1



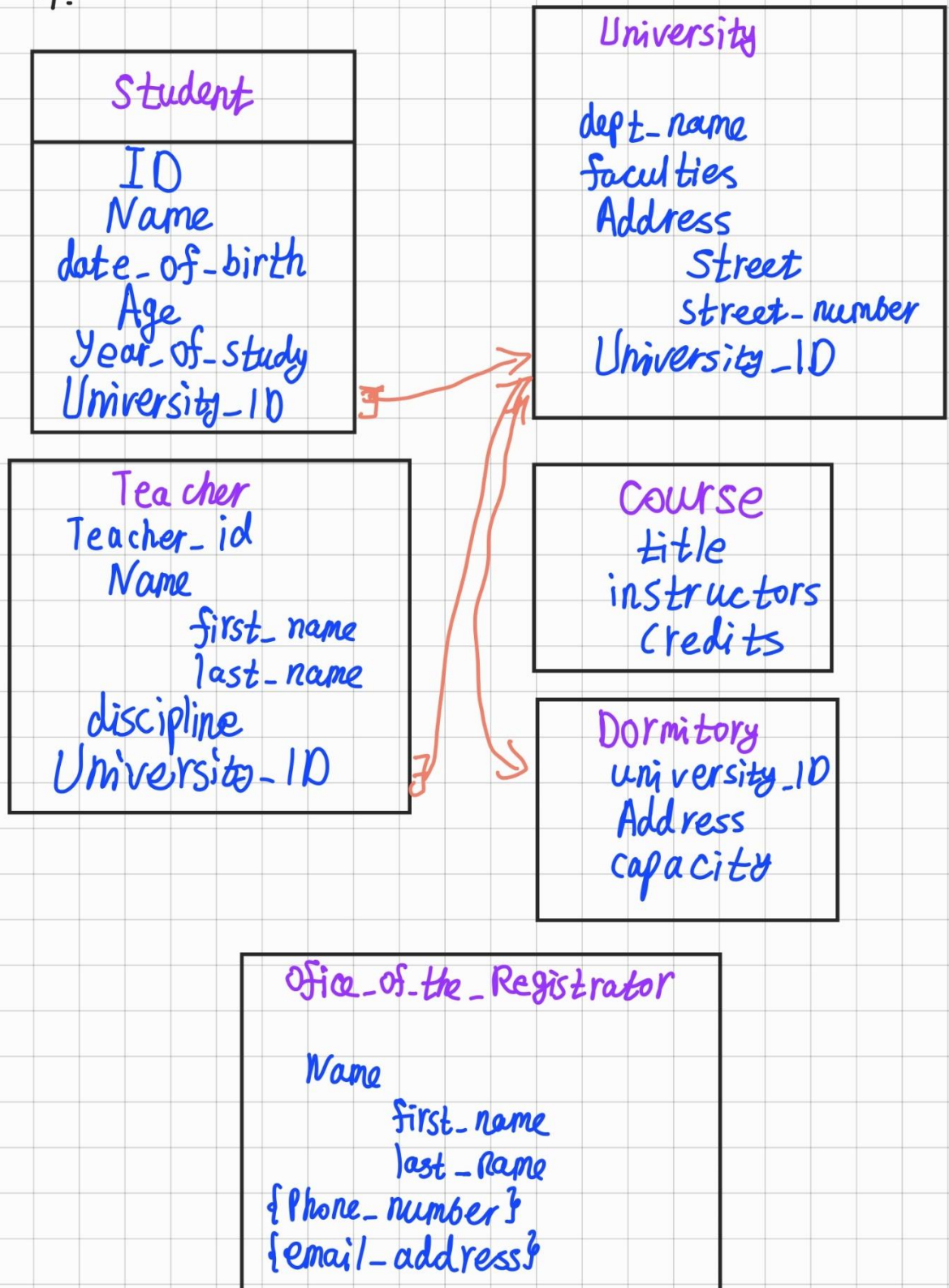
3) many - many



4) many - 1



4.



Task-5

