Ex 1

Design Phases

•Initial phase --characterize fully the data needs of the prospective database users.

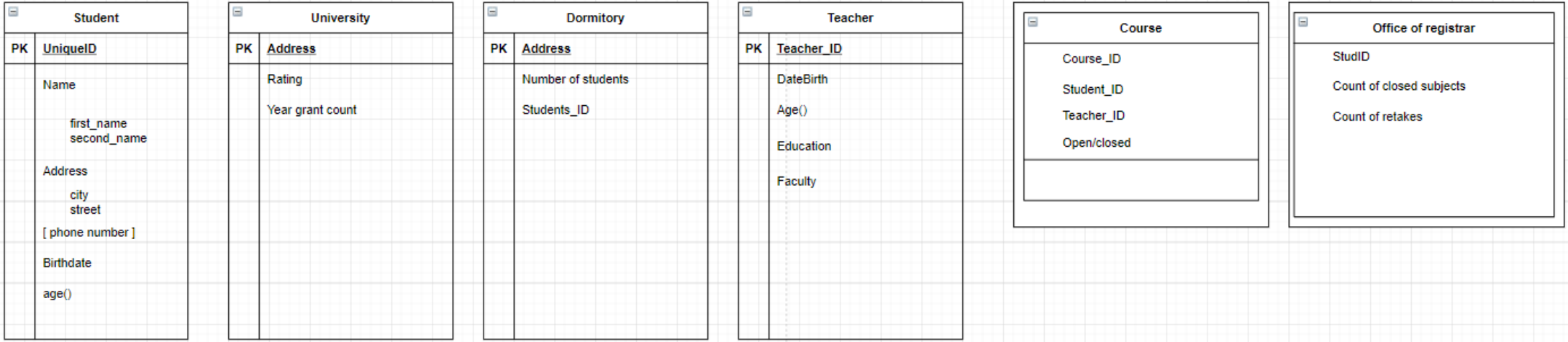
Second phase <--choosing a data model
•Applying the concepts of the chosen data model
•Translating these requirements into a conceptual schema of the database.
•A fully developed conceptual schema indicates the functional requirements of the enterprise.
•Describe the kinds of operations (or transactions) that will be performed on the data.

Final Phase <--Moving from an abstract data model to the 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

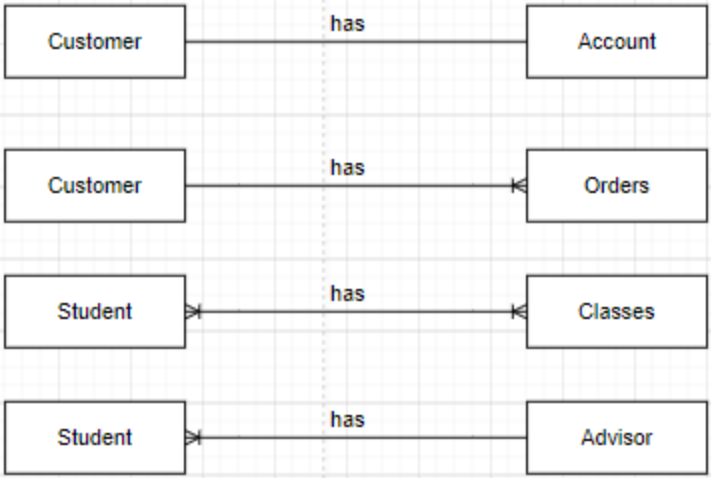
Entity Relationship Model (ER Modeling) is a graphical approach to database design.
It is a high-level data model that defines data elements and their relationship for a specified software system.
An ER model is used to represent real-world objects

Ex 2

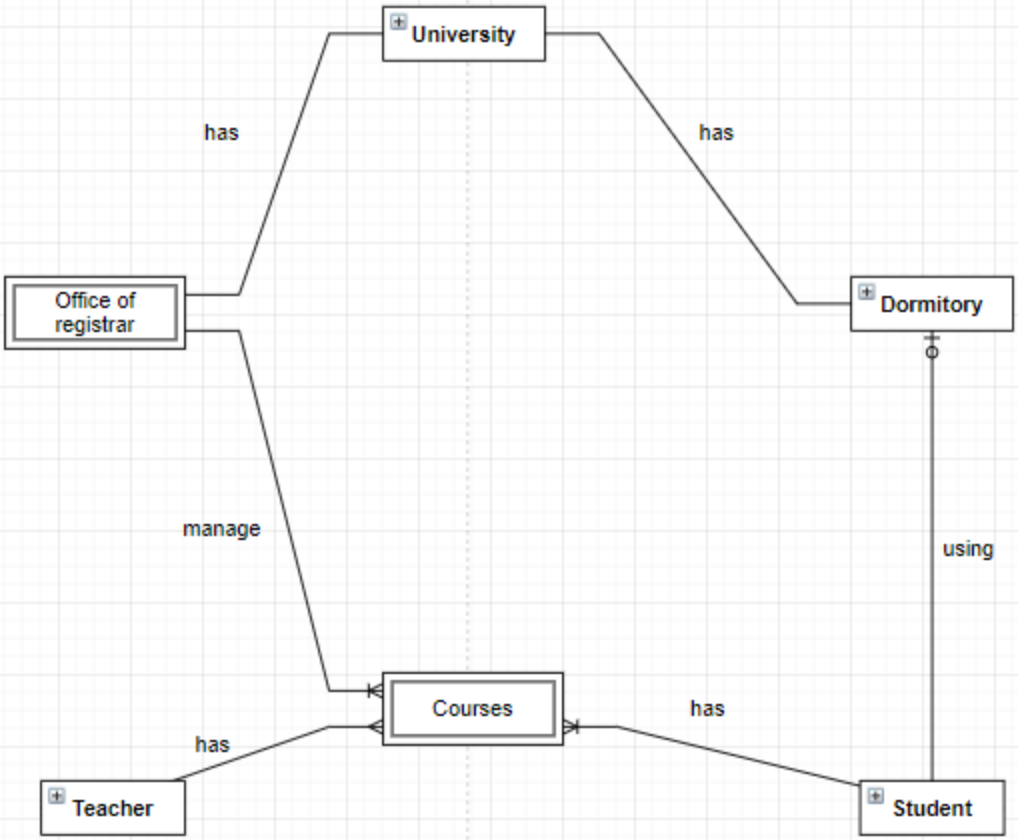
Ex 2


Student
PK
UniqueID
Name
first_name
second_name
Address
city
street
[phone number]
Birthdate
age()
University
PK
Address
Rating
Year grant count
Dormitory
PK
Address
Number of students
Students_ID
Teacher
PK
Teacher_ID
DateBirth
Age()
Education
Faculty
Course
Course_ID
Student_ID
Teacher_ID
Open/closed
Office of registrar
StudID
Count of closed subjects
Count of retakes

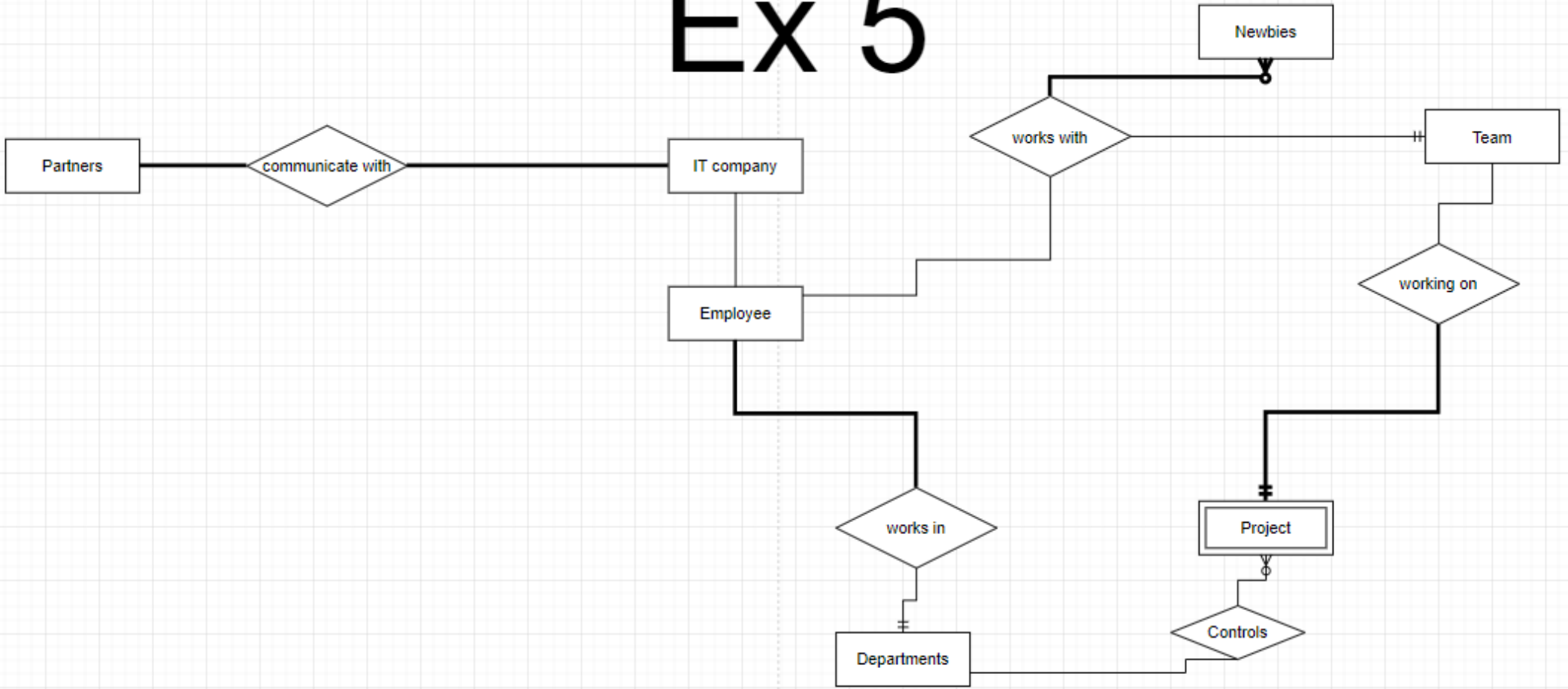
Ex 3


Customer
has
Account
Customer
has
Orders
Student
has
Classes
Student
has
Advisor

Ex 4


University
has
has
Office of registrar
Dormitory
manage
using
Courses
has
has
Teacher
Student

Ex 5


Newbies
works with
Team
Partners
communicate with
IT company
working on
Employee
works in
Project
Controls
Departments