

## Laboratory work 4

1.

a.

3 phases:

1) The initial phase - characterize fully the data needs of the prospective database users.

2) The second phase - concept (ER model)

3) The final phase:

a) logical (logical model)

b) physical (creating a database schema)

b.

ER-data model that allows you to describe conceptual schemas of the subject area.

2.

a.

Student
ID
name
first_name
second_name
address
city
street
{phone_number}
date_of_birth
age()

age depends on date\_of\_birth

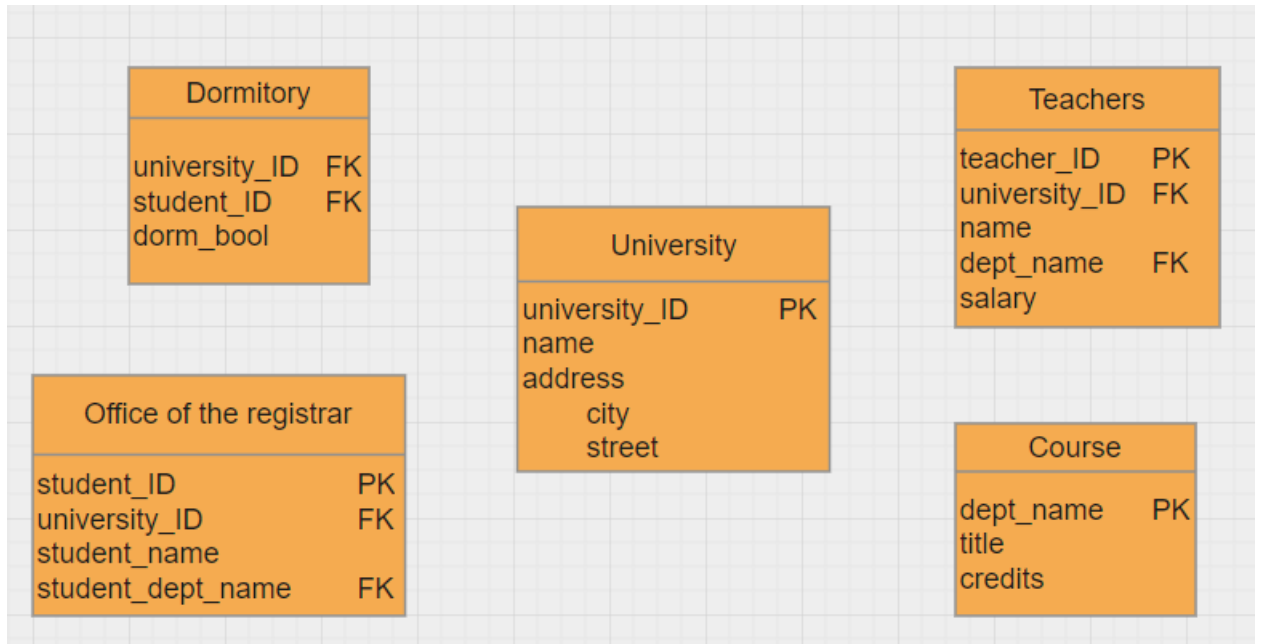
**simple** - ID, date\_of\_birth

**composite** - name, address

**derived** - age

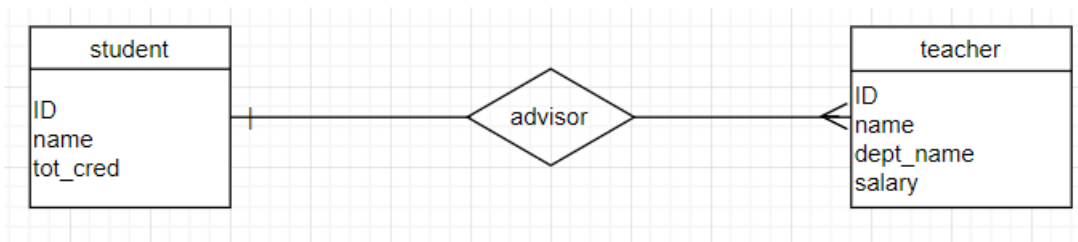
**multivalued** - {phone\_number} (several numbers)

b.

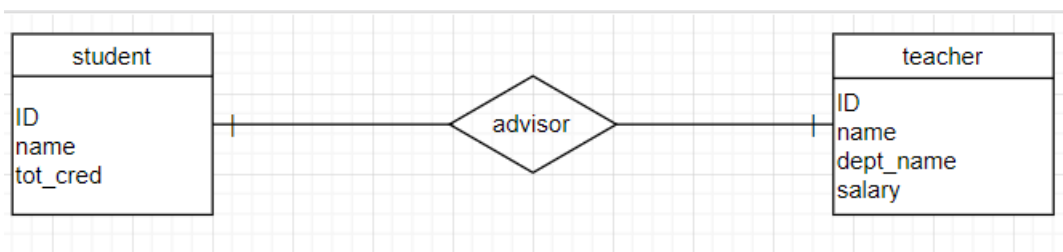


3.

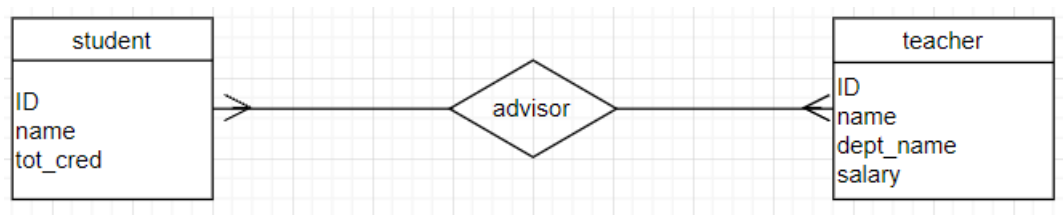
One to many, many to one (the same, but vice versa)



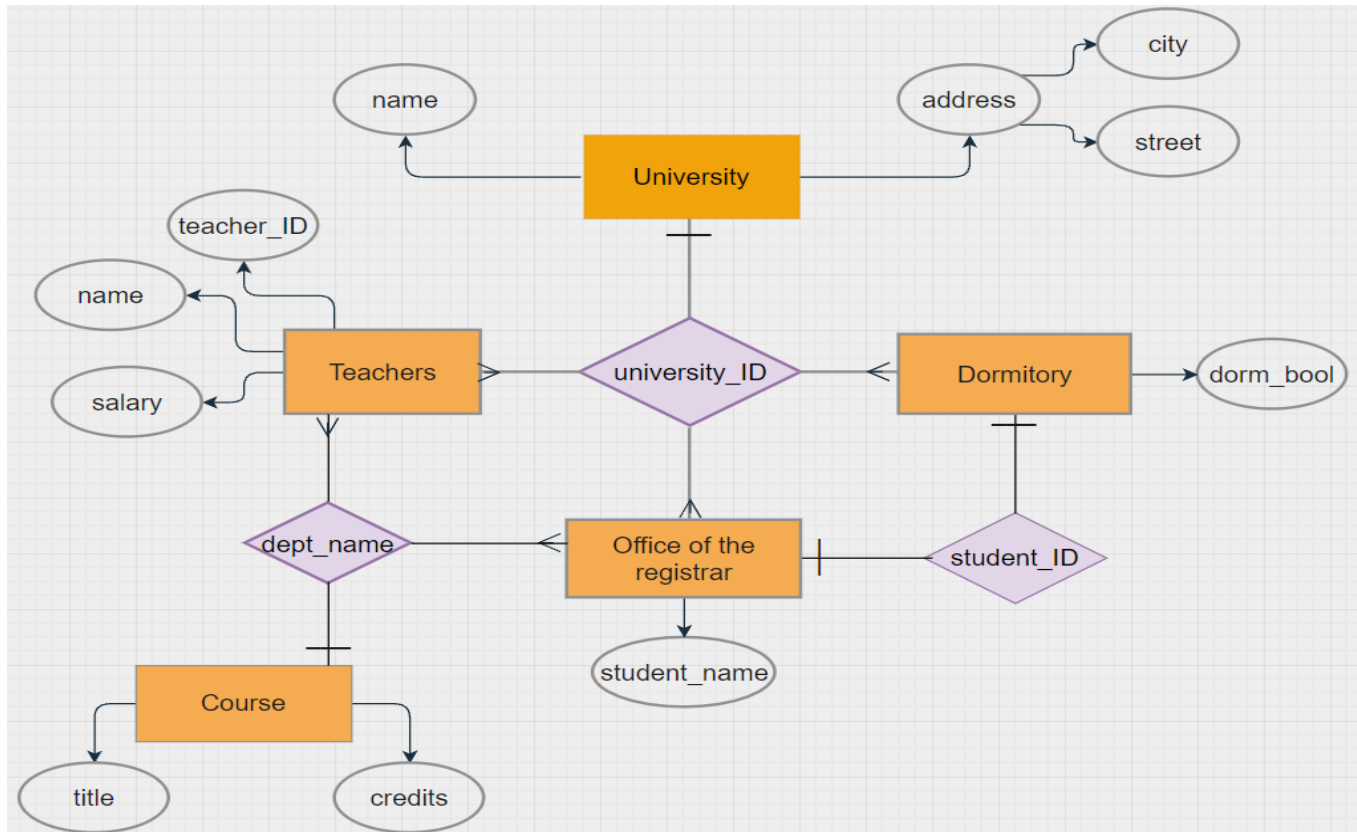
One to one



Many to many



4.



5.

