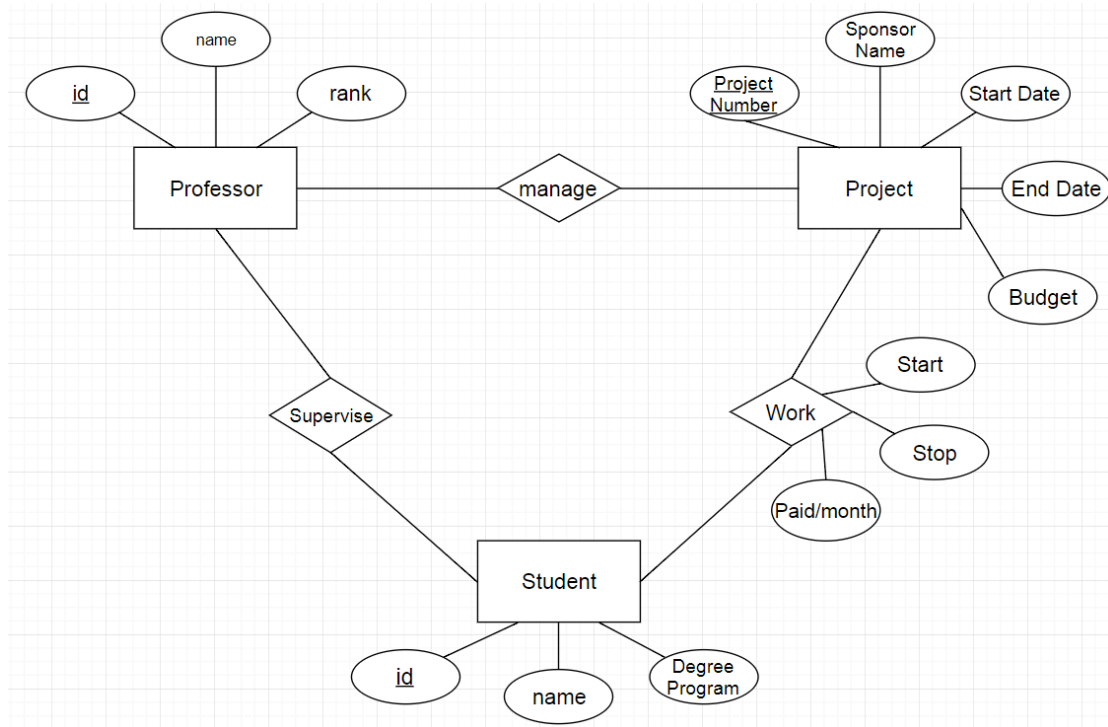# Assignment 1

Problem 1

1. Please design an ER model and draw an ER diagram for this senerio.

2. Please design a relational model for this senerio with the following constraints.

    CREATE TABLE Professor(
        pid INTEGER,
        pname TEXT,
        prank REAL,
        PRIMARY KEY(pid)
    );

    CREATE TABLE Project(
        project_number INTEGER,
        sponsor_name TEXT,
        start_date Date,
        end_date Date,
        budget INTEGER,
        PRIMARY KEY(project_number)
    );

```sql
CREATE TABLE Student(
    sid INTEGER,
    sname TEXT,
    degree_program TEXT,
    PRIMARY KEY(sid)
);

CREATE TABLE Manage(
    pid INTEGER,
    project_number INTEGER,
    PRIMARY KEY(pid, project_number),
    FOREIGN KEY(pid) REFERENCES Professor,
    FOREIGN KEY(project_number) REFERENCES Project
);

CREATE TABLE Supervise(
    pid INTEGER,
    sid INTEGER,
    PRIMARY KEY(pid, sid),
    FOREIGN KEY(pid) REFERENCES Professor,
    FOREIGN KEY(sid) REFERENCES Student
);

CREATE TABLE Work(
    project_number INTEGER,
    sid INTEGER,
    start_time Date,
    stop_time Date,
    paid_per_month INTEGER
    PRIMARY KEY(project_number, sid),
    FOREIGN KEY(project_number) REFERENCES Project,
    FOREIGN KEY(sid) REFERENCES Student
);
```

Problem 2

Please decompose the table for the 3rd normal form. You may add new fields to preserve the relationships.

fourm_name	popularity
Gossiping	100
Joke	23

fourm_name	post_id	title	article
Gossiping	132	Girlfriend	How can I get girlfriend ?
Gossiping	251	Firends	I don't have a friend...
Joke	41	Knock	Knock! Knock! ...
Joke	156	Santa Claus	Hold! Hold! Hold!

fourm_name	post_id	reply_id	reply
Gossiping	132	1	Haha
Gossiping	132	2	I don't know
Gossiping	251	1	Haha
Gossiping	251	2	I can be
Gossiping	251	3	QQ
Joke	41	1	Then?
Joke	41	2	What's the point ?
Joke	156	1	XDD