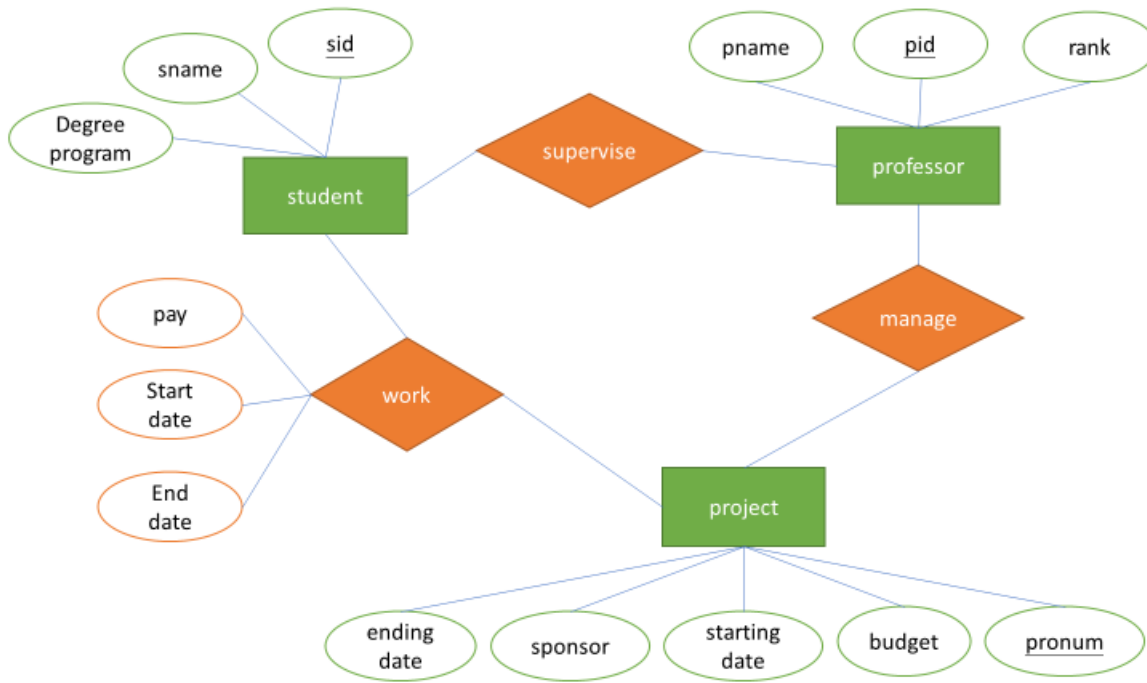


# Problem 1

## ER model



## Relation Model

```

CREATE TABLE Professor (
    pid INTEGER,
    pname VARCHAR(40),
    rank VARCHAR(40),
    PRIMARY KEY (pid)
);

CREATE TABLE Student (
    sid INTEGER,
    sname VARCHAR(40),
    degree_program VARCHAR(40)
    PRIMARY KEY (sid)
);

CREATE TABLE Project (
    pronum VARCHAR(40),
    sponsor VARCHAR(40),
    budget INTEGER,
    starting_date Date,
    ending_date Date,

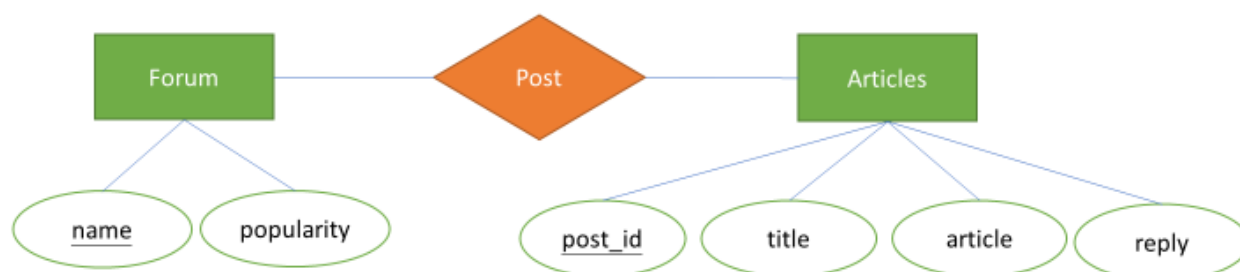
```

X1086023 何配瑜

```
PRIMARY KEY (praname)
);
CREATE TABLE Supervise (
    pid INTEGER,
    sid INTEGER,
    PRIMARY KEY (pid, sid),
    FOREIGN KEY (pid) REFERENCES Professor,
    FOREIGN KEY (sid) REFERENCES Student
);
CREATE TABLE Manage (
    pid INTERGER,
    praname VARCHAR(40),
    PRIMARY KEY (pid, praname),
    FOREIGN KEY (pid) REFERENCES Professor,
    FOREIGN KEY (praname) REFENCES Student
);
CREATE TABLE Work (
    sid INTEGER,
    pronum VARCHAR(40),
    pay INTEGER,
    start_date Date,
    end_date Date,
    PRIMARY KEY (sid, pronum),
    FOREIGN KEY (sid) REFERENCES Student,
    FOREIGN KEY (pronom) REFERENCES Project
);
```

## Problem 2

### ER model



#### Forum

name	popularity
Gossiping	164
News	62
Joke	23

#### Post

name	post_id
Gossiping	190
Gossiping	236
News	55
Joke	168

#### Articles

post_id	title	article	reply
190	Girlfriend	How can I get girlfriend ?	["Haha", "I don't know"]
236	Firends	I don't have a friend...	["Haha", "I can be", "QQ"]
55	Wow	Why?	["Then?", "What's the point ?"]
168	Computer	One minus one	["Hahaha"]