作业2

1. select name from instructor where dept_name="Biology";
2. select title from course where dept_name="Comp. Sci." and credits=3;
3. select course_id, title from course where course_id in (select distinct takes.course_id from takes where ID = 123);
4. select sum(credits) from course where course_id in (select distinct takes.course_id from takes where ID = 123);
5. select sum(credits), ID from course inner join takes on takes.course_id = course.course_id group by ID;
6. select distinct(name) from student where ID in (select ID from takes where course_id in (select course_id from course where course.dept_name="Comp. Sci."));
7. select ID from instructor where instructor.ID not in (select teaches.ID from teaches);
8. select name, ID from instructor where instructor.ID not in (select teaches.ID from teaches);

作业3

1. CREATE TABLE `actors` (`AID` INT NOT NULL AUTO_INCREMENT, `name` VARCHAR(40) NOT NULL, PRIMARY KEY (`AID`));

   CREATE TABLE `movies` (`MID` INT NOT NULL AUTO_INCREMENT, `title` VARCHAR(40) NOT NULL, PRIMARY KEY (`MID`));

   CREATE TABLE `actor_role` (`MID` INT NOT NULL, `AID` INT NOT NULL, `rolename` VARCHAR(40) NOT NULL, CONSTRAINT `actor_actor_role` FOREIGN KEY (`AID`) REFERENCES `actors` (`AID`) ON DELETE CASCADE , CONSTRAINT `movie_actor_role` FOREIGN KEY (`MID`) REFERENCES `movies` (`MID`) ON DELETE CASCADE);

2. INSERT INTO actors (name) VALUES ('name1');

   INSERT INTO actors (name) VALUES ('Charlie Chaplin');

   INSERT INTO actors (name) VALUES ('name2');

   INSERT INTO movies (title) VALUES ('movie1');

   INSERT INTO movies (title) VALUES ('movie2');

   INSERT INTO movies (title) VALUES ('movie3');

   INSERT INTO actor_role (MID, AID, rolename) VALUES (1,1,"role1");

   INSERT INTO actor_role (MID, AID, rolename) VALUES (1,2,"role2");

   INSERT INTO actor_role (MID, AID, rolename) VALUES (2,2,"role3");

   INSERT INTO actor_role (MID, AID, rolename) VALUES (3,1,"role4");

3.
```
select movies.title, actor_role.rolename
from movies inner join actor_role on movies.MID = actor_role.MID
where actor_role.AID in (select AID from actors where name="Charlie
Chaplin");```
```

4.
```
select name
from actors
where AID not in (select AID from actor_role)
```

5.
```
select actors.name, movies.title
from (actor_role inner join actors on actor_role.AID = actors.AID)
inner join movies on actor_role.MID = movies.MID
union ALL
select actors.name, null
from actors
where actors.AID not in (select actor_role.AID from actor_role)
```