Shuang Jiang

996022281

Assignment 0

1.

$$Q1 \leftarrow \pi_{cid}\left(\left(\sigma_{sid=0}(ProgramEnroll)\right) \bowtie CourseProgram\right)$$

Q1 is the course ids of courses I am enrolled into, assuming I have student id 0.

$$Q2 \leftarrow \pi_{title}(Course \bowtie A)$$

Q2 is the answer

2.

$$Q1 \leftarrow \pi_{oid}\left(\sigma_{sem='F' \wedge year=2011 \wedge sID=0}(StudentEnroll \bowtie CourseOffer)\right)$$

Q1 is the course offer IDs of courses I (studentid = 0) am enrolled in this semester (2011 Fall)

$$Q2 \leftarrow \pi_{tid}(Teacher \bowtie Q1)$$

Q2 is the IDs of the teachers who teach the courses I am enrolled in this semester

$$Q3 \leftarrow \pi_{eName}(Employee \bowtie Q2)$$

Q3 is the names of teachers who teach the courses I am enrolled in this semester

3.

$$Q1 \leftarrow \pi_{oid}\left(\sigma_{grade>50}(StudentEnroll)\right)$$

Q1 is the course offer IDs of courses that had an enrollment greater than 50

$$Q2 \leftarrow \pi_{oid}(\sigma_{sem='F'}(CourseOffer \bowtie Q1)$$

Q2 is the course offer IDs of courses that had an enrollment greater than 50 in the fall semester

$$Q3 \leftarrow \pi_{tid}(Teacher \bowtie Q2)$$

Q3 is the teachers who **ever** taught a course that had an enrollment greater than 50 in the fall semester.

$$Q4 \leftarrow \pi_{eid}(Employee)$$

Q4 is eIDs of all employees

$$Q5 \leftarrow Q4 - Q3$$

Q5 is the teachers who **never** taught a course that had an enrollment greater than 50 in the fall semester

4.

$$Q1 \leftarrow \pi_{oid}\big(\sigma_{sid=0}(StudentEnroll)\big)$$

Q1 is all the course offers I (studentid = 0)ever enrolled

$$Q2 \leftarrow \pi_{GsID}(TAs \bowtie Q1)$$

Q2 is all the TAs who ever TAed a course I enrolled

$$Q3 \leftarrow \pi_{gsid,oid}(Q1 \times Q2)$$

Q3 is all the combinations (Cartesian product) of Q1 and Q2

$$Q4 \leftarrow \pi_{gsid,oid}(TAs \bowtie Q2)$$

Q4 is all the courses the TAs from Q2 ever TAed

$$Q5 \leftarrow Q3 - Q4$$

Q5 is the pairs of TAs and course offers that the TAs from Q2 never TAed the courses from Q1.

$$Q6 \leftarrow \big(\pi_{gsid}(Q3) - \pi_{gsid}(Q5)\big)$$

Q6 is the TAs that TAed all the courses from Q1, which are every the courses I ever took

$$Q7 \leftarrow \pi_{sName}\big(\sigma_{type='G'}(Student \bowtie Q6)\big)$$

Q7 is all the names of graduate students who TAed every course you ever took