CS 5644: Machine Learning with Big Data

Practice SQL Queries

Find the names of courses taken by Tom Martin.

SELECT Courses.name

FROM People, Courses, Grades

WHERE People.id = Grades.pid AND Courses.cid = Grades.cid

AND People.name = "Tom Martin";

Print person name, course name, and grade in a convenient format.

SELECT People.name, Courses.name, grade

FROM People, Courses, Grades

WHERE People.id = Grades.pid AND Courses.cid = Grades.cid;

Print person names and their grades in MATH courses.

SELECT People.name, Courses.name, grade

FROM People, Courses, Grades

WHERE People.id = Grades.pid AND Courses.cid =Grades.cid

AND Courses.department = "MATH";

Find the names of courses that people from VA have taken.

SELECT Courses.name

FROM People, Courses, Grades

WHERE People.id = Grades.pid

AND Courses.cid = Grades.cid

AND People.address LIKE '%VA%';

Find the names of people who received a grade of 3 or better in some course. List the names of these people alongside the course names.

SELECT People.name, Courses.name

FROM People, Courses, Grades

WHERE People.id = Grades.pid

AND Courses.cid = Grades.cid

AND Grades.grade >= 3.0;

Find the names of people who received a grade of 3.5 or better in at least two courses: 2,3,4...

SELECT DISTINCT People.name

FROM Grades AS G1, Grades AS G2, People

WHERE G1.pid = G2.pid

AND G1.cid <> G2.cid

AND G1.grade >= 3.5

AND G2.grade >=3.5

AND People.id = G1.pid;

Find the names of people who received a grade of 3.5 or better in at least three courses: 3,4,5…

```
SELECT DISTINCT People.name
FROM Grades AS G1, Grades AS G2, Grades AS G3, People
WHERE G1.pid = G2.pid
AND G2.pid = G3.pid
AND G1.cid <> G2.cid
AND G2.cid <> G3.cid
AND G1.cid <> G3.cid
AND People.id = G1.pid
AND G1.grade >=3.5
AND G2.grade >= 3.5
AND G3.grade >= 3.5;
```

Find the names of people who received a grade of 3.5 or better in at least three courses.

SELECT DISTINCT People.name

FROM Grades AS G1, Grades AS G2, Grades AS G3, People

WHERE G1.pid = G2.pid

AND G2.pid = G3.pid

AND G1.cid < G2.cid

AND G2.cid < G3.cid

AND People.id = G1.pid

AND G1.grade >=3.5

AND G2.grade >= 3.5

AND G3.grade >= 3.5;

Find the names of people who received a grade of 3.5 or better in exactly two courses: 2

Exactly 2 = (At least 2) − (At least 3)

CREATE VIEW ATLEASTTWO(name) AS
Here you put in that SQL query;

CREATE VIEW ATLEASTTHREE(name) AS
Here you put in that other SQL query;

Finishing the story

```
(SELECT *
FROM ATLEASTTWO)
EXCEPT
(SELECT *
FROM ATLEASTTHREE);
```

Finishing the story (another way)

Subquery way – Subway!

(SELECT name

FROM ATLEASTTWO

WHERE name NOT IN

                               (SELECT *

                               FROM ATLEASTTHREE);

Hints to solve the last 4 questions

- You do not need anything more than what has been covered here!