University of Toronto
CSC343, Fall 2015

CDF IDs:
Names:

SQL Exercises: GROUP BY and HAVING

Schema

Student(<u>sID</u>, surName, firstName, campus, email, cgpa)

Course(<u>dept, cNum</u>, name, breadth)

Offering(<u>oID</u>, dept, cNum, term, instructor)

Took(<u>sID, oID</u>, grade)

Offering[dept, cNum] $\subseteq$ Course[dept, cNum]

Took[sID] $\subseteq$ Student[sID]

Took[oID] $\subseteq$ Offering[oID]

Questions

1. Write a query to find the average grade, minimum grade, and maximum grade for each offering.

2. Suppose we wrote

```
SELECT _________________________
FROM Offering, Took
WHERE Offering.oID = Took.oID
group by dept;
```

Which of the following could go in the SELECT clause?

`sID` `count(sID)` `grade` `avg(grade)` `dept` `count(dept)` `term` `min(term)`

3. Find the sid and average grade of each student, but keep the data only for those students who have an sid over 22222.

4. Find only the sid (and not also the average grade) of each student with an average over 80.

5. Which of these queries is legal?

```
SELECT dept
FROM Took, Offering
WHERE Took.oID = Offering.oID
GROUP BY dept
HAVING avg(grade) > 75;
```

```
SELECT Took.oID, avg(grade)
FROM Took, Offering
WHERE Took.oID = Offering.oID
GROUP BY Took.oID
HAVING avg(grade) > 75;
```

```
SELECT Took.oID, dept, cNum, avg(grade)
FROM Took, Offering
WHERE Took.oID = Offering.oID
GROUP BY Took.oID
HAVING avg(grade) > 75;
```

```
SELECT oID, avg(grade)
FROM Took
GROUP BY sID
HAVING avg(grade) > 75;
```