University of Toronto
CSC343, Winter 2017

SQL: Set Operations

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. Assuming bag semantics, compute the following:

   (a) $\{1, 1, 1, 3, 7, 7, 8\} \cup \{1, 5, 7, 7, 8, 8\}$

   (b) $\{1, 1, 1, 3, 7, 7, 8\} \cap \{1, 5, 7, 7, 8, 8\}$

   (c) $\{1, 1, 1, 3, 7, 7, 8\} - \{1, 5, 7, 7, 8, 8\}$

2. Write a query to find all terms when Jepson and Suzuki were both teaching. Include duplicates of the same term.

3. Find the sID of students who have earned a grade of 85 or more in some course, or who have passed a course taught by Atwood. Use views for the intermediate steps. Do not include duplicates in the result.

4. Find all terms when csc369 was not offered.