

Stevens Institute of Technology
Department of Computer Science
CS442: Database Management System

Handout . SQL Nested Queries (PART 1)

Given the schema:

- Student (snum, sname, major, level, age)
 - Class (cname, meets_date, room, fid)
 - Enrolled (snum, cname)
 - Faculty (fid, fname, deptid)
- Q1: Find the age of the oldest student who is enrolled in a course taught by Adam Smith;
 - (1) Solution 1: Without using nested queries
 - (2) Solution 2: with nested queries
- Q2: Find the names of all classes that either meet in room Babbio310 or have 2 or more students enrolled;
 - (1) Solution 1: Without using nested queries
 - (2) Solution 2: with nested queries

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Handout 7. SQL Nested Queries (PART 2.)

Given the schema:

- Student (snum, sname, major, level, age)
- Class (cname, meets_date, room, fid)
- Enrolled (snum, cname)
- Faculty (fid, fname, deptid)

- Q3: Find the names of students who are not enrolled in any class, by using nested queries;
- Q4: Find the names of students enrolled in the maximum number of classes, by using nested queries;
- Q5: Find the names of faculty members *who teach in every room in which* some class is taught, by using nested queries.

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In-class exercise
Relational Algebra (I)

September 27, 2019

Consider the following schema

- Sailors(Sid, Sname, Rating, Age)
- Boats(Bid, Bname, Color)
- Reserves(Sid, Bid, day)
 - Sid is a foreign key that references Sailors table;
 - Bid is a foreign key that references Boats table

Write the relational algebra expressions for the following queries:

1. Find the reservation record for boat of ID 103
2. Find the name of the boat of red color
3. Find the name of the boat that is either red or green
4. Find names of sailors who've reserved boat #103
5. Find names of sailors who've reserved a red boat
6. Find the colors of boats reserved by the sailor named Lubber
7. Find the name of sailors who have reserved at least one boat
8. Find the name of sailors who've reserved a red or a green boat
9. Find the name of sailors who've reserved a red and a green boat
10. Find the name of sailors with age over 20 who have not reserved a red boat