
CSCD 327 Lab #2 (16 points)

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1. (8 points) Write the following queries in **relational algebra**, using the schema below, where the primary keys are underlined.

Sailors(sid, sname, rating, age)

Reserves(sid, bid, day)

Boats(bid, bname, color)

- a. Find names of sailors who have reserved boat 103 (i.e., bid = 103).

PROJECT sname (SELECT bid = 103 (Reserves))

- b. Find names of sailors who have reserved a red boat.

PROJECT sname (PROJECT sid (SELECT color = red (Boats))(Reserves))

- c. Find names of sailors who have reserved a red or a green boat.

PROJECT sname (PROJECT sid (SELECT color = red (Boats))(Reserves)) U PROJECT sname (PROJECT sid (SELECT color = green (Boats))(Reserves))

- d. Find names of sailors who have reserved a red and a green boat.

PROJECT sname (PROJECT sid (SELECT color = red (Boats))(Reserves)) intersection
PROJECT sname (PROJECT sid (SELECT color = green (Boats))(Reserves))

2. (4 points) Write the following queries in **relational algebra**, using the university schema I gave you in class.

- a. Find the names of all students who have taken at least one Comp. Sci. course.

PROJECT name (PROJECT course_id (SELECT dept_name = "comp sci" (Course) (Takes)(Student)))

- b. Find the IDs and names of all students who have not taken any course offered before 2009.

PROJECT id, name (Student) -

3. (4 points) Write the following queries in **relational algebra**, using the schema below, where the primary keys are underlined.

employee (pname, street, city)

works (pname, cname, salary)

company (cname, city)

manages (pname, manager_name)

- a. Find the names, street addresses, and cities of residence of all employees who work for “First Bank Corporation” and earn more than \$10,000.

PROJECT name, street, city(SELECT name = “First Bank Corporation” && salary > 10,000(works)(employee))

- b. Find the names of all employees in this database who live in the same city as the company for which they work.

PROJECT pname(SELECT pname = city(company))

No lie this all made sense in the lectures but now doing it myself this felt kind of rough, probably will have to get help before the next one but this was a good learning experience.