

Module 4. Advanced SQL

1. Consider the employee database, where the primary keys are underlined. Give an expression in SQL for each of the following queries.

- Employee (id, name, street, city)
- Work (eid, cid, salary)
- Company (id, name, city)
- Manages (eid, cid, manager_name)

- a) Find the names of all employees who work for “FAU”
- b) Find the names of all employees who live in the same cities and on the same streets as do their managers.
- c) Find all employees who live in the same cities as the companies for which they work.
- d) Find the company that has the smallest payroll.

2. Consider the following table definition, where the primary keys are underlined. Give an expression in SQL for each of the following queries.

- Sailor (sid, sname, rating, age)
- Boat (bid, bname, color)
- Reserve (sid, bid, day)

- a) Find the colors of boats reserved by ‘Lubber’.
- b) Find the names of sailors who have reserved at least one boat.
- c) Find the names of sailors who have reserved two different boats on the same day.
- d) Find the names of sailors who have reserved a red or a green boat.
- e) Find the ids of sailors who have reserved both a red and a green boat.
- f) Find the s-ids of sailors who have reserved red boats but not green boats.
- g) Find the s-ids of sailors who have the highest rating.
- h) Find the names of sailors who have reserved all boats.
- i) Group sailors according to their rating and find the youngest age in each group.

- j) Group sailors according to their age and find the age group which contains at least two sailors.

3. Mark Legal or Illegal on the following queries.

- a) SELECT COUNT (DISTINCT S.sname)
FROM Sailor S
- b) SELECT S.sname, MAX (S.age)
FROM Sailor S
- c) SELECT MIN (AVG (S.age))
FROM Sailor S
GROUP BY S.rating