Sample Solution to Test 1
CIS 451/551 Fall 2003

The SQL queries for #1:

List the names and addresses of all employees who are not sailors.

SELECT p.fname, p.lname, p.address
FROM person p, employee e
WHERE p.ssn=e.ssn AND p.ssn NOT IN (SELECT ssn FROM sailor)

Determine if there are two different boats with the same name (give the name and two registration numbers in each row returned). Do not worry about repeated information in other rows returned.

SELECT b1.bname, b1.reg#, b2.reg#
FROM boat b1, boat b2
WHERE b1.bname=b2.bname AND b1.reg#<b2.reg#

Show all models of boats rented by anyone who lives in Eugene (it is enough to verify that the string ‘Eugene’ appears in the address).

SELECT bm.model_name
FROM boatmodel bm, boat b, reservation r, person p
WHERE bm.model#=b.model# AND b.reg#=r.reg# AND r.sailor_ssn=p.ssn
AND p.address LIKE ‘%Eugene%’

For each employee, count the number of reservations handled by that employee. List only those employees who have handled less than 5 reservations, and include those with zero.

SELECT p.fname, p.lname, count(boat_reg#)
FROM person p, OUTER reservation r
WHERE  p.ssn=r.emp_ssn
GROUP BY p.fname, p.lname
HAVING count(boat_reg#)<5
An ER diagram for #2 (leaving out the attributes)

The relational schema for #3:

*Employees*: ssn, union_mem_no

*Technician*: ssn, name, salary, address, phone_num (FK: ssn to Employees)

*TrafficControl*: ssn, exam_date_num (FK: ssn to Employees)

*Model*: model_no, capacity, weight

*Plane*: reg_no, model_no (FK: model_no to Model)

*Expert*: ssn, model_no (FK: ssn to Technician, model_no to Model)
Test: faa_no, name, max_score

TestInfo: faa_no, reg_no, tech_ssn, date, hours, score
  (FK: faa_no to Test, reg_no to Plane, tech_ssn to Technician)