**CS 540- Database Management Systems**

**Assignment 2**

Submitted by :

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Write the following queries in SQL.

1. Return names of every employee who works in the "Hardware", "Software", and "Research"   
   departments (0.5 point).

SELECT ename FROM emp

WHERE eid IN ( SELECT eid FROM works

WHERE did IN (SELECT did FROM dept

WHERE dname IN ('Hardware', 'Software', 'Research'))

GROUP BY eid HAVING COUNT(eid) >= 3);

1. Return the names of every department without any employee (0.5 point).

SELECT depart.dname FROM dept depart

WHERE depart.did NOT IN ( SELECT d.did FROM emp e, works w, dept d WHERE

e.eid = w.eid and w.did = d.did);

1. Print the managerid of managers who manage only departments with budgets greater than $1.5 million. (0.5 point)

SELECT DISTINCT d.managerid FROM dept d

WHERE 1500000 < ALL (SELECT d1.budget FROM dept d1

WHERE d1.managerid = d.managerid);

1. Print the name of employees whose salary is less than or equal to the salary of every employee (0.5 point).

SELECT ename

FROM emp

WHERE salary <= ALL (SELECT salary FROM emp);

1. Print the enames of managers who manage the departments with the largest budget (0.5 point).

SELECT ename FROM emp

WHERE eid IN (SELECT d.managerid FROM dept d

WHERE d.budget = (SELECT MAX(d1.budget) FROM dept d1));

1. Print the name of every department and the average salary of the employees of that department. The department must have a budget more than or equal to $50. (0.5 point)

SELECT d.dname, AVG(e.salary)

FROM dept d INNER JOIN works w ON d.did = w.did

INNER JOIN emp e ON e.eid = w.eid

WHERE d.budget > 50 GROUP BY w.did;

1. Print the managerids of managers who control the largest amount of total budget. As an example, if a manager manages two departments, the amount of total budget for him/her will be the sum of the budgets of the two departments. We want to find managers that have max total budget. (1 point)

SELECT managerid

FROM dept

GROUP BY managerid HAVING SUM(budget) >= ALL (SELECT SUM(budget)

FROM dept GROUP BY managerid);

1. Print the name of every employee who works only in the ”Hardware” department. (1 point)

SELECT ename FROM emp

WHERE eid IN (SELECT eid FROM works WHERE eid NOT IN ( SELECT eid FROM works WHERE did NOT IN (SELECT did FROM dept WHERE dname = "Hardware")));