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CS 440

Homework#1

Problem #1:

Working Functions:

Emp(did integer, name: string, age: integer, salary: real)

Works(did: integer, did: integer, pct\_time: integer)

Dept(did: integer, name: string, budget: real, managerid: integer)

Solutions a:

Print the name of each employee whose salary exceeds the budget of all of the departments that he or she works in (1 point).

**Select ename**

**FROM Emp**

**WHERE salary>ALL**

**(SELECT budget**

**FROM Dept INNER JOIN Works**

**WHERE Works.eid=Emp.eid));**

Solution b:

Find the managerids of managers who manage only departments with budgets greater than $1 million (1 point).

**SELECT managerids**

**FROM Dept GROUP BY managerid**

**HAVING (MIN(budget)>1000000);**

Solution c:

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

**SELECT enames**

**FROM Emp INNER JOIN Dept ON Emp.eid = Dept.managerid**

**WHERE (budget = MAX(budget));**

Solution D:

Find 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 will be the sum of budgets of two departments. We want to find managers that have max total budget (2 points).

**SELECT managerid**

**FROM Dept GROUP BY managerid**

**WHERE (MAX(budget)< SUM(budget));**

Problem #2:

Working Functions:

People(person\_id, person\_name)

Purchase(Purchase\_id, person\_id, cost)

Solution a:

SELECT person\_id FROM Purchases

GROUP BY person\_id Having max(cost < 100)

The first solution will go through the purchases table and return anyone with a cost less than 100. However since it is going through the purchase table it only returns people whom made a purchase and spent less than 100.

Solution b:

SELECT person\_id FROM People WHERE person\_id NOT IN

(SELECT person\_id FROM Purchases WHERE cost >= 100)

The second solution will return the set of people who do not purchase 100 or more. This also includes people that did not even make a purchase.

Therefore these two queries do not return the same tuples. Because the second one includes people whom did not make a purchase.