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*SQL and PL/SQL Labs*

***SQL (Day2):***

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| *1* | *Write a query that displays the difference between the highest and lowest salaries. Label the column DIFFERENCE.* |
|  | ***select (max(salary)-min(salary)) "DIFFERENCE"***  ***from employees;*** |
| *2* | *From the* ***employees*** *table, determine the number of managers without listing them. Label the column* ***Number of Managers****.*  ***Hint:*** *Use the* ***MANAGER\_ID*** *column to determine the number of managers.* |
|  | ***select count( distinct manager\_id )***  ***from employees;*** |
| *3* | *Display the* ***minimum****,* ***maximum****,* ***sum****, and* ***average*** *salary* ***for each job*** *type.*  *Label the columns Maximum, Minimum, Sum, and Average, respectively.*  *Round the average salary to the nearest whole number.* |
|  | ***select max(salary)"Maximum",min(salary)"Minimum",sum(salary)"Sum",Round(avg(salary))"Average"***  ***from employees***  ***group by job\_id;*** |
| *4* | *Display the* ***manager number*** *and the* ***minimun salary*** *of the lowest paid employee for that manager.*  *Exclude anyone who have no manager.*  *Exclude any groups where the minimum salary is $6,000 or less.*  *Sort the output in descending order of salary.* |
|  | ***select manager\_id,min(salary)***  ***from employees***  ***where manager\_id is not null***  ***group by manager\_id***  ***having (select min(salary) from employees)<6000***  ***order by min(salary) desc;*** |
| *5* | *Write a query to display the* ***last name****,* ***department number****, and* ***department name*** *for all employees.* |
|  | *select last\_name,e.department\_id,department\_name*  *from employees e,departments d*  *where e.department\_id=d.department\_id;* |
| *6* | *Write a query to display the* ***last name****,* ***job id****,* ***department number****, and* ***department name*** *for all employees who work in “****Toronto****” city* |
|  | *select last\_name,job\_id,d.department\_id,department\_name*  *from locations l,departments d,employees e*  *where e.department\_id=d.department\_id*  *and l.location\_id=d.location\_id*  *and city='Toronto';* |
| *7* | *Display the* ***employee name*** *and* ***hire date, manager's names*** *and* ***Manager hire date*** *for all employees who were hired before their managers.*  *Label the columns* ***Employee****,* ***Emp Hired****,* ***Manager****, and* ***Mgr Hired****, respectively.* |
|  | *select emp.last\_name"Employee",emp.hire\_date"Emp Hired",sup.first\_name"Manager" ,sup.hire\_date"Mgr Hired"*  *from employees emp,employees sup*  *where sup.employee\_id=emp.manager\_id*  *and emp.hire\_date< sup.hire\_date;* |
| *8* | *Write a query to display each* ***department’s name****,* ***location****,* ***number of employees****, and the* ***average salary*** *for all employees in that department.*  *Label the columns* ***Name****,* ***Location****,* ***Number of People****, and* ***Salary****, respectively. Round the average salary to two decimal places.* |
|  | *select department\_name"Name",location\_id"Location", count(employee\_id)"number of employees",avg(salary)"Salary"*  *from departments d,employees e*  *where e.department\_id=d.department\_id*  *group by department\_name,location\_id;* |
| *9* | *Create a query to display the* ***employee numbers*** *and* ***last names*** *of all employees who earn more than the average salary.*  *Sort the results in ascending order of salary.* |
|  | *select employee\_id,last\_name*  *from employees*  *where salary>(select avg(salary) from employees)*  *order by salary;* |
| *10* | *Display the* ***Department ID****,* ***minimum salary*** *for each department excluding the (minimum salary in the company).* |
|  | ***select department\_id,min(salary)***  ***from employees***  ***where salary <> (select min(salary) from employees)***  ***group by department\_id;*** |
| *11* | *Create a query to display the* ***last name*** *of the employees that earn salary that is higher than the salary of all the clerks* ***(Hint: clerck means job\_id contain the word clerk)***  *Sort results on salary from highest to lowest.*  *note: use Multi-row sub query.* |
|  | ***select last\_name***  ***from employees***  ***where salary>all(select salary from employees where job\_id like '%clerck%')***  ***order by salary desc;*** |

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| *12* | *Create the following tables:*  ***Courses***  *Course\_id pk*  *Course\_name not null*  *Credit\_hour*  ***Students\_Courses***  *Course\_id*  *Student\_id*  *Grade(0-100)*  *Reg\_date*  ***Students***  *Student\_id pk*  *Student\_name not null*  *Address*  *Bdate*  *Tel Unique* |
|  | *create table Students*  *(Student\_id number primary key,*  *Student\_name varchar2(20) not null,*  *Address varchar2(20),*  *Bdate date,*  *Tel varchar2(12) unique);*  *create table Courses*  *(course\_id number primary key,*  *course\_name varchar2(20) not null,*  *credit\_hours number);*  *create table Students\_Courses*  *(Course\_id number REFERENCES Courses(Course\_id),*  *Student\_id number REFERENCES Students(student\_id),*  *Grade number CHECK ((Grade > 0) and (Grade<100)),*  *Reg\_date date)* |