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Lab 08
CSE 572 – Professor Lin
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1. Create a query to display the highest, lowest, sum and average salary of all employees. Label the columns Maximum, Minimum, Sum and Average, respectively. Save your SQL statement in a text file named LAB08_1.sql. Run your query.

SELECT COUNT(*), MIN(SALARY), MAX(SALARY), AVG(SALARY), SUM(SALARY)
FROM HR.employees;

```
SQL> start LAB08_1.sql
PRESS RETURN TO CONTINUE

  COUNT(*) MIN(SALARY) MAX(SALARY) AVG(SALARY) SUM(SALARY)
---------- ----------- ----------- ----------- -----------
       107        2100       24000  6461.83178      691416

SQL>
```

2. Modify the query in LAB08_1.sql to display the minimum, maximum, sum, and average salary for each job type. Save your SQL statement in a text file named LAB08_2.sql. Run this revised query.

SELECT department_ID, COUNT(*), MIN(SALARY), MAX(SALARY), AVG(SALARY)
FROM HR.employees
GROUP BY department_ID;

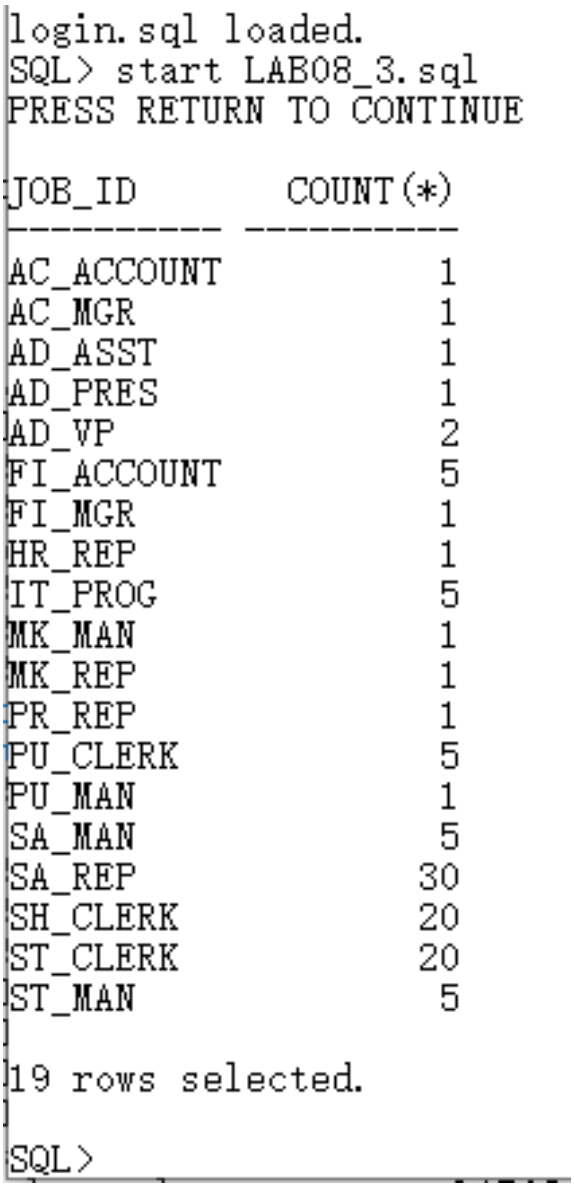
```
login.sql loaded.
SQL> start LAB08_2
PRESS RETURN TO CONTINUE

DEPARTMENT_ID   COUNT(*) MIN(SALARY) MAX(SALARY) AVG(SALARY)
------------- ---------- ---------- ---------- ----------
          100          6       6900      12008 8601.33333
           30          6       2500      11000       4150
                       1       7000       7000       7000
           20          2       6000      13000       9500
           70          1      10000      10000      10000
           90          3      17000      24000 19333.3333
          110          2       8300      12008      10154
           50         45       2100       8200 3475.55556
           40          1       6500       6500       6500
           80         34       6100      14000 8955.88235
           10          1       4400       4400       4400
           60          5       4200       9000       5760

12 rows selected.
```

3. Create a query to display the number of employees with the same job. Save your SQL statement in a text file named LAB08_3.sql. Run your query.

SELECT job_id, COUNT(*)
FROM employees
GROUP BY job_id;



```
login.sql loaded.
SQL> start LAB08_3.sql
PRESS RETURN TO CONTINUE

JOB_ID       COUNT(*)
---------- ----------
AC_ACCOUNT          1
AC_MGR              1
AD_ASST             1
AD_PRES             1
AD_VP               2
FI_ACCOUNT          5
FI_MGR              1
HR_REP              1
IT_PROG             5
MK_MAN              1
MK_REP              1
PR_REP              1
PU_CLERK            5
PU_MAN              1
SA_MAN              5
SA_REP             30
SH_CLERK           20
ST_CLERK           20
ST_MAN              5

19 rows selected.

SQL>
```

4. 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. Save your SQL statement in a text file named LAB08_4.sql. Run your query.

SELECT COUNT (DISTINCT manager_id) "NUMBER OF MANAGERS"
FROM employees;

```
SQL> start LAB08_4.sql
PRESS RETURN TO CONTINUE

NUMBER OF MANAGERS
------------------
                18

SQL>
```

5. Write a query that displays the difference between the highest and lowest salaries. Label the column DIFFERENCE. Save your SQL statement in a text file named LAB08_5.sql. Run your query.

SELECT MAX(SALARY) - MIN(SALARY) DIFFERENCE
FROM employees;

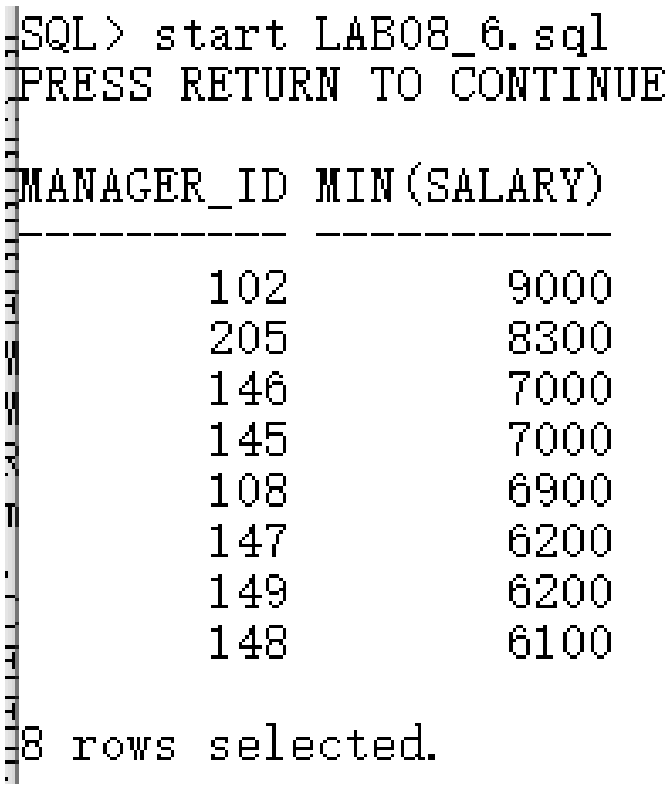
```
SQL> start LAB08_5.sql
PRESS RETURN TO CONTINUE

DIFFERENCE
----------
     21900

SQL>
```

6. Display the manager number and the salary of the lowest paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is $6,000 or less. Sort the output in descending order of salary. Save your SQL statement in a text file named LAB08_6.sql. Run your query.

SELECT manager_id, MIN(SALARY)
FROM employees
WHERE manager_id IS NOT NULL
GROUP BY manager_id
HAVING MIN(SALARY) > 6000
ORDER BY MIN(SALARY) DESC;



```
SQL> start LAB08_6.sql
PRESS RETURN TO CONTINUE

MANAGER_ID MIN(SALARY)
---------- -----------
       102        9000
       205        8300
       146        7000
       145        7000
       108        6900
       147        6200
       149        6200
       148        6100

8 rows selected.
```

7. 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 Department , Location, Number of Workers, and Average Salary, respectively. Round the average salary to two decimal places. Save your SQL statement in a text file named LAB08_7.sql. Run your query.

```
SELECT d.department_name "NAME", d.location_id "LOCATION",
COUNT(*) "NUMBER OF PEOPLE",
ROUND (AVG(SALARY), 2) "SALARY"
FROM employees e, departments d
WHERE e.department_id = d.department_id
GROUP BY d.department_name, d.location_id;
```

```
SQL> start LAB08_7.sql
PRESS RETURN TO CONTINUE

NAME                           LOCATION NUMBER OF PEOPLE     SALARY
------------------------------ -------- ---------------- ----------
Administration                     1700                1       4400
Marketing                          1800                2       9500
Sales                              2500               34    8955.88
Purchasing                         1700                6       4150
Finance                            1700                6    8601.33
IT                                 1400                5       5760
Executive                          1700                3   19333.33
Shipping                           1500               45    3475.56
Accounting                         1700                2      10154
Human Resources                    2400                1       6500
Public Relations                   2700                1      10000

11 rows selected.

SQL>
```