

## Assignment –II

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1. Display each employee's name and hiredate from department 20.

```
mysql> SELECT ename, hiredate
-> FROM emp
-> WHERE deptno = 20;
```

ename	hiredate
SMITH	1980-12-17
JONES	1981-04-02
SCOTT	1987-07-13
ADAMS	1987-07-12
FORD	1981-12-03

5 rows in set (0.07 sec)

2. Display each employee's name with hiredate and salary review date.

Assume review date is one year after hiredate.

```
mysql> SELECT ename, hiredate, DATE_ADD(hiredate, INTERVAL 1 YEAR) AS review_date
-> FROM emp;
```

ename	hiredate	review_date
SMITH	1980-12-17	1981-12-17
ALLEN	1981-02-20	1982-02-20
WARD	1981-02-21	1982-02-21
JONES	1981-04-02	1982-04-02
MARTIN	1981-09-08	1982-09-08
BLAKE	1981-05-01	1982-05-01
CLARK	1981-06-09	1982-06-09
SCOTT	1987-07-13	1988-07-13
KING	1981-11-17	1982-11-17
TURNER	1981-09-08	1982-09-08
ADAMS	1987-07-12	1988-07-12
JAMES	1981-12-03	1982-12-03
FORD	1981-12-03	1982-12-03
MILLER	1982-01-23	1983-01-23

14 rows in set (0.01 sec)

3. Print a list of employees displaying just salary if more than 1500. If exactly 1500 then display 'On Target', if less than 1500 then display 'below 1500'.

```
mysql> SELECT ename,
->          CASE
->            WHEN sal > 1500 THEN sal
->            WHEN sal = 1500 THEN 'On Target'
->            ELSE 'Below 1500'
->          END AS salary_status
-> FROM emp;
```

ename	salary_status
SMITH	Below 1500
ALLEN	1600.00
WARD	Below 1500
JONES	2975.00
MARTIN	Below 1500
BLAKE	2850.00
CLARK	2450.00
SCOTT	3000.00
KING	5000.00
TURNER	On Target
ADAMS	Below 1500
JAMES	Below 1500
FORD	3000.00
MILLER	Below 1500

14 rows in set (0.01 sec)

4. Find the minimum salary of all employees.

```
mysql> SELECT MIN(sal) AS min_salary
-> FROM emp;
```

min_salary
800.00

1 row in set (0.01 sec)

5. Find the minimum, maximum and average salaries of all employees.

```
mysql> SELECT MIN(sal) AS min_salary,
->          MAX(sal) AS max_salary,
->          AVG(sal) AS avg_salary
-> FROM emp;
```

min_salary	max_salary	avg_salary
800.00	5000.00	2073.214286

1 row in set (0.00 sec)

6. List the minimum and maximum salary for each job type.

```
mysql> SELECT job, MIN(sal) AS min_salary, MAX(sal) AS max_salary
-> FROM emp
-> GROUP BY job;
```

job	min_salary	max_salary
CLERK	800.00	1300.00
SALESMAN	1250.00	1600.00
MANAGER	2450.00	2975.00
ANALYST	3000.00	3000.00
PRESIDENT	5000.00	5000.00

5 rows in set (0.02 sec)

7. Find out the average salary and total remuneration for each job type.

```
mysql> SELECT job, AVG(sal) AS avg_salary, SUM(sal) AS total_salary
-> FROM emp
-> GROUP BY job;
```

job	avg_salary	total_salary
CLERK	1037.500000	4150.00
SALESMAN	1400.000000	5600.00
MANAGER	2758.333333	8275.00
ANALYST	3000.000000	6000.00
PRESIDENT	5000.000000	5000.00

5 rows in set (0.00 sec)

8. Find out the difference between highest and lowest salaries.

```
mysql> SELECT MAX(sal) - MIN(sal) AS salary_difference
-> FROM emp;
+-----+
| salary_difference |
+-----+
|          4200.00 |
+-----+
1 row in set (0.01 sec)
```

9. Find all departments, which have more than 3 employees.

```
mysql> SELECT deptno, COUNT(*) AS emp_count
-> FROM emp
-> GROUP BY deptno
-> HAVING COUNT(*) > 3;
+-----+-----+
| deptno | emp_count |
+-----+-----+
|      20 |          5 |
|      30 |          6 |
+-----+-----+
2 rows in set (0.00 sec)
```

10. Check whether all employee numbers are indeed unique.

```
mysql> SELECT empno, COUNT(*) AS count_occurrences
-> FROM emp
-> GROUP BY empno
-> HAVING COUNT(*) > 1;
Empty set (0.00 sec)
```

11. List the lowest paid employees working for each manager. Exclude any groups where the minimum salary is less than 1000. Sort the output by salary.

```
mysql> -- Get manager-wise minimum salary (>=1000), then join back to get employees
mysql> WITH mgr_min AS (
  -> SELECT mgr, MIN(sal) AS min_sal
  -> FROM emp
  -> GROUP BY mgr
  -> HAVING MIN(sal) >= 1000
  -> )
  -> SELECT e.empno, e.ename, e.job, e.mgr, e.sal
  -> FROM emp e
  -> JOIN mgr_min m ON e.mgr = m.mgr AND e.sal = m.min_sal
  -> ORDER BY e.sal;
```

empno	ename	job	mgr	sal
7876	ADAMS	CLERK	7788	1100.00
7934	MILLER	CLERK	7782	1300.00
7782	CLARK	MANAGER	7839	2450.00
7788	SCOTT	ANALYST	7566	3000.00
7902	FORD	ANALYST	7566	3000.00

5 rows in set (0.22 sec)

12. Display all employee names and their department names, in the order of department name.

```
mysql> SELECT e.ename, d.dname
  -> FROM emp e
  -> JOIN dept d ON e.deptno = d.deptno
  -> ORDER BY d.dname;
```

ename	dname
CLARK	ACCOUNTING
KING	ACCOUNTING
MILLER	ACCOUNTING
SMITH	RESEARCH
JONES	RESEARCH
SCOTT	RESEARCH
ADAMS	RESEARCH
FORD	RESEARCH
ALLEN	SALES
WARD	SALES
MARTIN	SALES
BLAKE	SALES
TURNER	SALES
JAMES	SALES

14 rows in set (0.01 sec)

```
mysql> |
```

13. Display all employee names, department number and department name.

```
mysql> SELECT e.ename, e.deptno, d.dname
-> FROM emp e
-> LEFT JOIN dept d ON e.deptno = d.deptno;
```

ename	deptno	dname
SMITH	20	RESEARCH
ALLEN	30	SALES
WARD	30	SALES
JONES	20	RESEARCH
MARTIN	30	SALES
BLAKE	30	SALES
CLARK	10	ACCOUNTING
SCOTT	20	RESEARCH
KING	10	ACCOUNTING
TURNER	30	SALES
ADAMS	20	RESEARCH
JAMES	30	SALES
FORD	20	RESEARCH
MILLER	10	ACCOUNTING

14 rows in set (0.01 sec)

14. Display the name, location and department of employees whose salary is more than 1500 a month.

```
mysql> SELECT e.ename, d.loc AS location, d.dname AS department
-> FROM emp e
-> JOIN dept d ON e.deptno = d.deptno
-> WHERE e.sal > 1500;
```

ename	location	department
ALLEN	CHICAGO	SALES
JONES	DALLAS	RESEARCH
BLAKE	CHICAGO	SALES
CLARK	NEW YORK	ACCOUNTING
SCOTT	DALLAS	RESEARCH
KING	NEW YORK	ACCOUNTING
FORD	DALLAS	RESEARCH

7 rows in set (0.00 sec)

15. Show only employees on grade 3.

```
mysql> SELECT *
-> FROM emp
-> WHERE deptno = 30;
```

empno	ename	job	mgr	hiredate	sal	comm	deptno
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-21	1250.00	500.00	30
7654	MARTIN	SALESMAN	7698	1981-09-08	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30

6 rows in set (0.02 sec)

16. Show all employees in 'Dallas'

```
mysql> SELECT e.*
-> FROM emp e
-> JOIN dept d ON e.deptno = d.deptno
-> WHERE d.loc = 'Dallas';
```

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7788	SCOTT	ANALYST	7566	1987-07-13	3000.00	NULL	20
7876	ADAMS	CLERK	7788	1987-07-12	1100.00	NULL	20
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20

5 rows in set (0.00 sec)

17. List the employee name, job, salary, and grade and department name for everyone in the company except clerks. Sort on salary, displaying the salary first.

```
mysql> SELECT e.sal AS Salary, e.ename, e.job, d.dname AS Department
-> FROM emp e
-> LEFT JOIN dept d ON e.deptno = d.deptno
-> WHERE e.job <> 'CLERK'
-> ORDER BY e.sal DESC;
```

Salary	ename	job	Department
5000.00	KING	PRESIDENT	ACCOUNTING
3000.00	SCOTT	ANALYST	RESEARCH
3000.00	FORD	ANALYST	RESEARCH
2975.00	JONES	MANAGER	RESEARCH
2850.00	BLAKE	MANAGER	SALES
2450.00	CLARK	MANAGER	ACCOUNTING
1600.00	ALLEN	SALESMAN	SALES
1500.00	TURNER	SALESMAN	SALES
1250.00	WARD	SALESMAN	SALES
1250.00	MARTIN	SALESMAN	SALES

18. List the details of employees who earn 36000 a year or who are clerks.

```
mysql> SELECT *
-> FROM emp
-> WHERE sal * 12 = 36000 OR job = 'CLERK';
```

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7788	SCOTT	ANALYST	7566	1987-07-13	3000.00	NULL	20
7876	ADAMS	CLERK	7788	1987-07-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10

6 rows in set (0.00 sec)

19. Display the department that has no employees.

```
mysql> SELECT d.deptno, d.dname
-> FROM dept d
-> LEFT JOIN emp e ON d.deptno = e.deptno
-> WHERE e.deptno IS NULL;
```

```
+-----+-----+
| deptno | dname      |
+-----+-----+
|      40 | OPERATIONS |
+-----+-----+
1 row in set (0.00 sec)
```

20. Find the employees who earn the highest salary in each job type. Sort in descending salary order.

```
mysql> WITH job_max AS (
-> SELECT job, MAX(sal) AS max_sal
-> FROM emp
-> GROUP BY job
-> )
-> SELECT e.empno, e.ename, e.job, e.sal
-> FROM emp e
-> JOIN job_max jm ON e.job = jm.job AND e.sal = jm.max_sal
-> ORDER BY e.sal DESC;
```

```
+-----+-----+-----+-----+
| empno | ename  | job      | sal      |
+-----+-----+-----+-----+
| 7839  | KING   | PRESIDENT | 5000.00  |
| 7788  | SCOTT  | ANALYST  | 3000.00  |
| 7902  | FORD   | ANALYST  | 3000.00  |
| 7566  | JONES  | MANAGER  | 2975.00  |
| 7499  | ALLEN  | SALESMAN | 1600.00  |
| 7934  | MILLER | CLERK    | 1300.00  |
+-----+-----+-----+-----+
6 rows in set (0.02 sec)
```

21. Find the most recently hired employees in each department ordered by hire date.



```
mysql> WITH dept_max_hire AS (
->   SELECT deptno, MAX(hiredate) AS max_hire
->   FROM emp
->   GROUP BY deptno
-> )
-> SELECT e.empno, e.ename, e.deptno, e.hiredate
-> FROM emp e
-> JOIN dept_max_hire dmh ON e.deptno = dmh.deptno AND e.hiredate = dmh.max_hire
-> ORDER BY e.hiredate DESC;
```

empno	ename	deptno	hiredate
7788	SCOTT	20	1987-07-13
7934	MILLER	10	1982-01-23
7900	JAMES	30	1981-12-03

3 rows in set (0.01 sec)

22.Display the details of employees hired between Jan and June.

```
mysql> SELECT *
-> FROM emp
-> WHERE MONTH(hiredate) BETWEEN 1 AND 6;
```

empno	ename	job	mgr	hiredate	sal	comm	deptno
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-21	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10

6 rows in set (0.01 sec)

23.Display the count, total salary and average salary of all employees in each department.

```
mysql> SELECT deptno, COUNT(*) AS emp_count, SUM(sal) AS total_salary, AVG(sal) AS avg_salary
-> FROM emp
-> GROUP BY deptno;
```

deptno	emp_count	total_salary	avg_salary
10	3	8750.00	2916.666667
20	5	10875.00	2175.000000
30	6	9400.00	1566.666667

3 rows in set (0.00 sec)

24.Find a square root of the number 36.1111. The result should not contain any decimal spaces.

```
mysql> SELECT TRUNCATE(SQRT(36.1111), 0) AS sqrt_trunc;
+-----+
| sqrt_trunc |
+-----+
|          6 |
+-----+
1 row in set (0.00 sec)
```

```
mysql>
mysql> -- or round to nearest integer
mysql> SELECT ROUND(SQRT(36.1111), 0) AS sqrt_round;
+-----+
| sqrt_round |
+-----+
|          6 |
+-----+
1 row in set (0.00 sec)
```

```
mysql>
mysql> -- or cast to integer (floor)
mysql> SELECT FLOOR(SQRT(36.1111)) AS sqrt_floor;
+-----+
| sqrt_floor |
+-----+
|          6 |
+-----+
1 row in set (0.00 sec)
```

25. Given a string 'HELLO\_THERE\_'. Replace all '\_' with '!' marks.

```
mysql> SELECT REPLACE('HELLO_THERE_', '_', '!') AS changed_string;
+-----+
| changed_string |
+-----+
| HELLO!THERE!  |
+-----+
1 row in set (0.00 sec)

mysql> -- Result: 'HELLO!THERE!'
```

26. Find the sum of the length of the strings. The strings are CDAC, HYDERABAD.

```
mysql> -- Result: 'HELLO!THERE!'
mysql> SELECT (CHAR_LENGTH('CDAC') + CHAR_LENGTH('HYDERABAD')) AS total_length;
+-----+
| total_length |
+-----+
|          13 |
+-----+
1 row in set (0.01 sec)
```

27. Find the job that was filled in the first half of the 1980 and the job that was filled during the same period in 1981.

```
mysql> SELECT DISTINCT job FROM emp WHERE hiredate BETWEEN '1981-01-01' AND '1981-06-30';
```

job
SALESMAN
MANAGER

```
2 rows in set (0.00 sec)
```