Assignment - 1

DBMS

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Problem 1:

Task: Select all information from Salgrade table.

Code: —

```
SELECT * FROM salgrade;
```

Output: —

```
mysql> SELECT * FROM salgrade;
+-------+-------+-------+
| grade | losal | hisal |
+-------+-------+-------+
|     1 |   700 |  1200 |
|     2 |  1201 |  1400 |
|     3 |  1401 |  2000 |
|     4 |  2001 |  3000 |
|     5 |  3001 |  9999 |
+-------+-------+-------+
```

Problem 2:

Task: Select all information from emp table.

Code: —

```
1
2 SELECT * FROM emp;
```

Output: —

```
mysql> SELECT * FROM emp;
+-------+--------+-----------+------+------------+---------+---------+--------+
| empno | ename  | job       | mgr  | hiredate   | sal     | comm    | deptno |
+-------+--------+-----------+------+------------+---------+---------+--------+
|  7369 | SMITH  | CLERK     | 7902 | 1980-12-17 |  800.00 |    NULL |     20 |
|  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 |
|  7654 | MARTIN | SALESMAN  | 7698 | 1981-09-08 | 1250.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER   | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1987-07-13 | 3000.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN  | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  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 |
+-------+--------+-----------+------+------------+---------+---------+--------+
```

Problem 3:

Task: Select all information from dept table.

Code: —

```
1 SELECT * FROM dept;
```

Output: —

```
mysql> SELECT * FROM dept;
+--------+------------+----------+
| deptno | dname      | loc      |
+--------+------------+----------+
|     10 | ACCOUNTING | NEW YORK |
|     20 | RESEARCH   | DALLAS   |
|     30 | SALES      | CHICAGO  |
|     40 | OPERATIONS | BOSTON   |
+--------+------------+----------+
```

Problem 4:

Task: List all employees who have a salary between 1000 and 2000.

Code: —

```
1 SELECT * FROM emp WHERE sal > 1000 AND sal < 2000;
```

Output: —

```
mysql> SELECT * FROM emp WHERE sal > 1000 AND sal < 2000;
+-------+--------+----------+------+------------+---------+---------+--------+
| 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 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1987-07-12 | 1100.00 |    NULL |     20 |
|  7934 | MILLER | CLERK    | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+----------+------+------------+---------+---------+--------+
```

Problem 5:

Task: List department numbers and names in department name order.

Code: —

```
1 SELECT * FROM dept ORDER BY dname;
```

Output: —

```
mysql> SELECT * FROM dept ORDER BY dname;
+--------+------------+----------+
| deptno | dname      | loc      |
+--------+------------+----------+
|     10 | ACCOUNTING | NEW YORK |
|     40 | OPERATIONS | BOSTON   |
|     20 | RESEARCH   | DALLAS   |
|     30 | SALES      | CHICAGO  |
+--------+------------+----------+
```

Problem 6:

Task: Display all the different job types.

Code: —

```
1 SELECT DISTINCT job FROM emp;;
```

Output: —

```
mysql> SELECT DISTINCT job FROM emp;
+-----------+
| job       |
+-----------+
| CLERK     |
| SALESMAN  |
| MANAGER   |
| ANALYST   |
| PRESIDENT |
+-----------+
```

Problem 7:

Task: List the details of the employees in departments 10 and 20 in alphabetical order of employee names.

Code:

```
SELECT FROM WHERE GROUP BY HAVING ORDER BY

SELECT * FROM emp WHERE deptno in (10, 20) ORDER BY ename;
```

Output:

```
mysql> SELECT * FROM emp WHERE deptno in (10, 20) ORDER BY ename;
+-------+--------+-----------+------+------------+---------+------+--------+
| empno | ename  | job       | mgr  | hiredate   | sal     | comm | deptno |
+-------+--------+-----------+------+------------+---------+------+--------+
|  7876 | ADAMS  | CLERK     | 7788 | 1987-07-12 | 1100.00 | NULL |     20 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450.00 | NULL |     10 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 3000.00 | NULL |     20 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975.00 | NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1300.00 | NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1987-07-13 | 3000.00 | NULL |     20 |
|  7369 | SMITH  | CLERK     | 7902 | 1980-12-17 |  800.00 | NULL |     20 |
+-------+--------+-----------+------+------------+---------+------+--------+
```

Problem 8:

Task: List names and jobs of all clerks in department 20.

Code:

```
SELECT ename, job FROM emp WHERE deptno = 20 AND job = 'CLERK';
```

Output: —

```
mysql> SELECT ename, job FROM emp WHERE deptno = 20 AND job = 'CLERK';
+-------+-------+
| ename | job   |
+-------+-------+
| SMITH | CLERK |
| ADAMS | CLERK |
+-------+-------+
```

Problem 9:

Task: Display all employee names which have TH or LL in them.

Code: —

```
SELECT ename FROM emp WHERE ename LIKE '%TH%' OR ename LIKE '%LL
    %';

SELECT ename FROM emp WHERE ename REGEXP 'TH|LL';
```

Output: —

```
mysql> SELECT ename FROM emp WHERE ename LIKE '%TH%' OR ename LIKE '%LL%';
+--------+
| ename  |
+--------+
| SMITH  |
| ALLEN  |
| MILLER |
+--------+
3 rows in set (0.00 sec)

mysql> SELECT ename FROM emp WHERE ename REGEXP 'TH|LL';
+--------+
| ename  |
+--------+
| SMITH  |
| ALLEN  |
| MILLER |
+--------+
```

Problem 10:

Task: List the details of the employees who have a manager.

Code: —

```
SELECT * FROM emp WHERE job = 'manager';
```

Output: —

```
mysql> SELECT * FROM emp WHERE job = 'manager';
+-------+-------+---------+------+------------+---------+------+--------+
| empno | ename | job     | mgr  | hiredate   | sal     | comm | deptno |
+-------+-------+---------+------+------------+---------+------+--------+
|  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 |
+-------+-------+---------+------+------------+---------+------+--------+
```

Problem 11:

Task: Display the name and the total remuneration for all employees.

Code: —

```
SELECT ename, (ifnull(comm, 0) + sal) "Total Remuneration" FROM
   emp;
```

Output: —

```
mysql> SELECT ename, (ifnull(comm, 0) + sal) "Total Remuneration" FROM emp;
+--------+--------------------+
| ename  | Total Remuneration |
+--------+--------------------+
| SMITH  |             800.00 |
| ALLEN  |            1900.00 |
| WARD   |            1750.00 |
| JONES  |            2975.00 |
| MARTIN |            2650.00 |
| BLAKE  |            2850.00 |
| CLARK  |            2450.00 |
| SCOTT  |            3000.00 |
| KING   |            5000.00 |
| TURNER |            1500.00 |
| ADAMS  |            1100.00 |
| JAMES  |             950.00 |
| FORD   |            3000.00 |
| MILLER |            1300.00 |
+--------+--------------------+
```

Problem 12:

Task: Display name, annual salary and commission of all sales people whose monthly salary is greater than their commission. The output should be ordered by salary highest first. If two or more employees have the same salary sort by employee name, within the highest salary order.

Code: —

```
SELECT ename, sal, comm FROM emp
WHERE sal > ifnull(comm, 0) AND job = 'SALESMAN'
ORDER BY sal DESC, ename ASC;
```

Output: —

```
mysql> SELECT ename, sal, comm FROM emp
    -> WHERE sal > ifnull(comm, 0) AND job = 'SALESMAN'
    -> ORDER BY sal DESC, ename ASC;
+--------+---------+--------+
| ename  | sal     | comm   |
+--------+---------+--------+
| ALLEN  | 1600.00 | 300.00 |
| TURNER | 1500.00 |   0.00 |
| WARD   | 1250.00 | 500.00 |
+--------+---------+--------+
```

Problem 13:

Task: Display all employees who were hired during 1982.

Code:

```
SELECT * FROM emp WHERE year(hiredate) = 1982;
```

Output:

```
mysql> SELECT * FROM emp WHERE year(hiredate) = 1982;
+-------+--------+-------+------+------------+---------+------+--------+
| empno | ename  | job   | mgr  | hiredate   | sal     | comm | deptno |
+-------+--------+-------+------+------------+---------+------+--------+
|  7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL |     10 |
+-------+--------+-------+------+------------+---------+------+--------+
```

Problem 14:

Task: Display the employee name and job by concatenating them and give an appropriate heading.

Code:

```
SELECT concat(ename, ' is a ', job) "Employee Details" FROM emp;
```

Output:

```
mysql> SELECT concat(ename, ' is a ', job) "Employee Details" FROM emp;
+----------------------+
| Employee Details     |
+----------------------+
| SMITH is a CLERK     |
| ALLEN is a SALESMAN  |
| WARD is a SALESMAN   |
| JONES is a MANAGER   |
| MARTIN is a SALESMAN |
| BLAKE is a MANAGER   |
| CLARK is a MANAGER   |
| SCOTT is a ANALYST   |
| KING is a PRESIDENT  |
| TURNER is a SALESMAN |
| ADAMS is a CLERK     |
| JAMES is a CLERK     |
| FORD is a ANALYST    |
| MILLER is a CLERK    |
+----------------------+
```

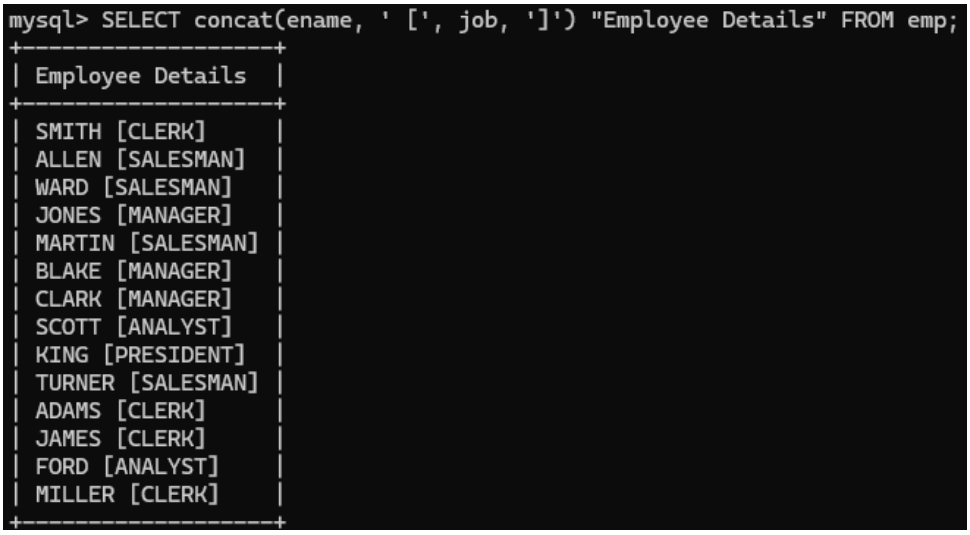
Problem 15:

Task: Display the employee name and the job in brackets.

Code:

```
SELECT concat(ename, ' [', job, ']') "Employee Details" FROM emp;
```

Output: —



```
mysql> SELECT concat(ename, ' [', job, ']') "Employee Details" FROM emp;
+-------------------+
| Employee Details  |
+-------------------+
| SMITH [CLERK]     |
| ALLEN [SALESMAN]  |
| WARD [SALESMAN]   |
| JONES [MANAGER]   |
| MARTIN [SALESMAN] |
| BLAKE [MANAGER]   |
| CLARK [MANAGER]   |
| SCOTT [ANALYST]   |
| KING [PRESIDENT]  |
| TURNER [SALESMAN] |
| ADAMS [CLERK]     |
| JAMES [CLERK]     |
| FORD [ANALYST]    |
| MILLER [CLERK]    |
+-------------------+
```

Problem 16:

Task: It has been discovered that the sales people in department 30 are not all male. Hence display the job of salesman as salesperson.

Code: —

```sql
SELECT REPLACE(job, 'SALESMAN', 'SALESPERSON') FROM emp;

SELECT
    empno,
    ename,
    CASE
        WHEN job = 'SALESMAN' AND deptno = 30 THEN 'SALESPERSON'
        ELSE job
    END AS job,
    mgr,
    hiredate,
    sal,
    comm,
    deptno
FROM
    emp;
```

Output: —

```
mysql> SELECT
    ->     empno,
    ->     ename,
    ->     CASE
    ->         WHEN job = 'SALESMAN' AND deptno = 30 THEN 'SALESPERSON'
    ->         ELSE job
    ->     END AS job,
    ->     mgr,
    ->     hiredate,
    ->     sal,
    ->     comm,
    ->     deptno
    -> FROM
    ->     emp;
+-------+--------+-------------+------+------------+---------+---------+--------+
| empno | ename  | job         | mgr  | hiredate   | sal     | comm    | deptno |
+-------+--------+-------------+------+------------+---------+---------+--------+
|  7369 | SMITH  | CLERK       | 7902 | 1980-12-17 |  800.00 |    NULL |     20 |
|  7499 | ALLEN  | SALESPERSON | 7698 | 1981-02-20 | 1600.00 |  300.00 |     30 |
|  7521 | WARD   | SALESPERSON | 7698 | 1981-02-21 | 1250.00 |  500.00 |     30 |
|  7566 | JONES  | MANAGER     | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7654 | MARTIN | SALESPERSON | 7698 | 1981-09-08 | 1250.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER     | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER     | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST     | 7566 | 1987-07-13 | 3000.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT   | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7844 | TURNER | SALESPERSON | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  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 |
+-------+--------+-------------+------+------------+---------+---------+--------+
```