-- 1. To list all records with sal > 2000 and comm>200
SELECT * FROM EMP
WHERE sal > 2000 and comm > 200;

```
mysql> SELECT * FROM EMP
    -> WHERE sal > 2000 and comm > 200;
Empty set (0.00 sec)
```

-- 2. To list all record with job='Clerk' or sal>2000
SELECT * FROM EMP
WHERE job = 'Clerk' OR sal >2000;

```
mysql> SELECT * FROM EMP
    -> WHERE job = 'Clerk' OR sal >2000;
+-------+--------+-----------+------+------------+---------+------+--------+
| 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 |
|  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 | 1982-12-09 | 3000.00 | NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 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 |
+-------+--------+-----------+------+------------+---------+------+--------+
10 rows in set (0.00 sec)
```

-- 3. To list all the record with sal=1250 or 1100 or 2850
SELECT * FROM EMP
WHERE sal IN(1250, 1100, 2850);

```
mysql> SELECT * FROM EMP
    -> WHERE sal IN (1250, 1100, 2850);
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1250.00 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1100.00 |    NULL |     20 |
+-------+--------+----------+------+------------+---------+---------+--------+
4 rows in set (0.00 sec)
```

-- 4. To list all employees with sal>1250 and <2850
SELECT * FROM EMP
WHERE sal BETWEEN 1250 and 2850;

```
mysql> SELECT * FROM EMP
    -> WHERE sal BETWEEN 1250 and 2850;
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1250.00 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 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 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  7934 | MILLER | CLERK    | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+----------+------+------------+---------+---------+--------+
7 rows in set (0.00 sec)
```

-- 5. To list all employees with name ends with AS
SELECT * FROM EMP
WHERE ename LIKE '%AS';

```
mysql> SELECT * FROM EMP
    -> WHERE ename LIKE '%AS';
Empty set (0.00 sec)
```

-- 6. To list all employees with job starts with C and ends with K
SELECT * FROM EMP
WHERE job LIKE 'C%K';

```
mysql> SELECT * FROM EMP
    -> WHERE job LIKE 'C%K';
+-------+--------+-------+------+------------+---------+------+--------+
| EMPNO | ENAME  | JOB   | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+--------+-------+------+------------+---------+------+--------+
|  7369 | SMITH  | CLERK | 7902 | 1980-12-17 |  800.00 | NULL |     20 |
|  7876 | ADAMS  | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL |     20 |
|  7900 | JAMES  | CLERK | 7698 | 1981-12-03 |  950.00 | NULL |     30 |
|  7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL |     10 |
+-------+--------+-------+------+------------+---------+------+--------+
4 rows in set (0.00 sec)
```

-- 7. To list all employees with job contains L at third position and M at third last position
SELECT * FROM EMP
WHERE job LIKE '__L%' and
    job LIKE '%M__';

```
mysql> SELECT * FROM EMP
    -> WHERE job LIKE '__L%' and
    ->       job LIKE '%M__';
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1250.00 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
+-------+--------+----------+------+------------+---------+---------+--------+
4 rows in set (0.00 sec)
```

-- 8. To list all the record with sal not equal to 1250 or 1100 or 2850
SELECT * FROM EMP
WHERE sal NOT IN (1250, 1100, 2850);

```
mysql> SELECT * FROM EMP
    -> WHERE sal NOT IN (1250, 1100, 2850);
+-------+--------+-----------+------+------------+---------+--------+--------+
| 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 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975.00 |   NULL |     20 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450.00 |   NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1982-12-09 | 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 |
|  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 |
+-------+--------+-----------+------+------------+---------+--------+--------+
10 rows in set (0.00 sec)
```

-- 9. To list all employees with salnot >1250 and <2850
SELECT * FROM EMP
WHERE sal NOT BETWEEN 1250 AND 2850;

```
mysql> SELECT * FROM EMP
    -> WHERE sal NOT BETWEEN 1250 AND 2850;
+-------+-------+-----------+------+------------+---------+------+--------+
| 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 | 1982-12-09 | 3000.00 | NULL |     20 |
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
|  7876 | ADAMS | CLERK     | 7788 | 1983-01-12 | 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 |
+-------+-------+-----------+------+------------+---------+------+--------+
7 rows in set (0.00 sec)
```

-- 10. To list all employees with job starts with C , E at 3rd position and ends with K
SELECT * FROM EMP
WHERE job REGEXP '^C.E.*K$';

```
mysql> SELECT * FROM EMP
    -> WHERE job REGEXP '^C.E.*K$';
+-------+--------+-------+------+------------+---------+------+--------+
| EMPNO | ENAME  | JOB   | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+--------+-------+------+------------+---------+------+--------+
|  7369 | SMITH  | CLERK | 7902 | 1980-12-17 |  800.00 | NULL |     20 |
|  7876 | ADAMS  | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL |     20 |
|  7900 | JAMES  | CLERK | 7698 | 1981-12-03 |  950.00 | NULL |     30 |
|  7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL |     10 |
+-------+--------+-------+------+------------+---------+------+--------+
4 rows in set (0.00 sec)
```

-- 11. To list all rows with comm is null

SELECT * FROM EMP
where comm IS NULL;

```
mysql> SELECT * FROM EMP
    -> where comm IS NULL;
+-------+--------+-----------+------+------------+---------+------+--------+
| 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 |
|  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 | 1982-12-09 | 3000.00 | NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 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 |
+-------+--------+-----------+------+------------+---------+------+--------+
10 rows in set (0.00 sec)
```

-- 12. To list all employees with sal is null and name starts with ‘S’
SELECT * FROM EMP
WHERE sal is NULL and ename LIKE 'S%';

```
mysql> SELECT * FROM EMP
    -> WHERE sal is NULL and ename LIKE 'S%';
Empty set (0.00 sec)
```

-- 13. To list all employees with job contains 5 characters
SELECT * FROM EMP
WHERE job REGEXP '^[a-z0-9]{5}$';

```
mysql> SELECT * FROM EMP
    -> WHERE job REGEXP '^[a-z0-9]{5}$';
+-------+--------+-------+------+------------+---------+------+--------+
| EMPNO | ENAME  | JOB   | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+--------+-------+------+------------+---------+------+--------+
|  7369 | SMITH  | CLERK | 7902 | 1980-12-17 |  800.00 | NULL |     20 |
|  7876 | ADAMS  | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL |     20 |
|  7900 | JAMES  | CLERK | 7698 | 1981-12-03 |  950.00 | NULL |     30 |
|  7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL |     10 |
+-------+--------+-------+------+------------+---------+------+--------+
4 rows in set (0.00 sec)
```

-- 14. To list all employees with name contain ‘A’ at 1 position and job Contains 5 characters
SELECT * FROM EMP
WHERE ename REGEXP '^A' and job REGEXP '^[a-z]{5}$';

```
mysql> SELECT * FROM EMP
    -> WHERE ename REGEXP '^A' and  job REGEXP '^[a-z]{5}$';
+-------+-------+-------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB   | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+-------+------+------------+---------+------+--------+
|  7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL |     20 |
+-------+-------+-------+------+------------+---------+------+--------+
1 row in set (0.00 sec)
```

Q2. Solve the following

/*
1. Retrieve the details (Name, Salary and dept no) of the emp who are working in department code 20, 30 and 40.
*/

SELECT ename, sal, deptno FROM EMP
WHERE deptno IN (20, 30, 40);

```
mysql> SELECT ename, sal, deptno FROM EMP
    -> WHERE deptno IN (20, 30, 40);
+--------+---------+--------+
| ename  | sal     | deptno |
+--------+---------+--------+
| SMITH  |  800.00 |     20 |
| ALLEN  | 1600.00 |     30 |
| WARD   | 1250.00 |     30 |
| JONES  | 2975.00 |     20 |
| MARTIN | 1250.00 |     30 |
| BLAKE  | 2850.00 |     30 |
| SCOTT  | 3000.00 |     20 |
| TURNER | 1500.00 |     30 |
| ADAMS  | 1100.00 |     20 |
| JAMES  |  950.00 |     30 |
| FORD   | 3000.00 |     20 |
+--------+---------+--------+
11 rows in set (0.00 sec)
```

/*
2. Display the total salary of all employees . Total salary will be calculated as sal+comm+sal*0.10
*/

SELECT SUM(sal + comm + sal * 0.10) as "Total Salary" FROM EMP;

```
mysql>  SELECT SUM(sal + comm + sal * 0.10) as "Total Salary" FROM EMP;
+--------------+
| Total Salary |
+--------------+
|    8360.0000 |
+--------------+
1 row in set (0.00 sec)
```

/*
3. List the Name and job of the emp who have joined before 1 jan 1986 and whose salary range is between 1200and 2500. Display the columns with user defined Column headers.
*/

SELECT ename as "EMP Name", job as "Job Role" FROM EMP
WHERE hiredate < '1986-01-01' and sal BETWEEN 1200 AND 2500;

```
mysql> SELECT ename as "EMP Name", job as "Job Role" FROM EMP
    -> WHERE hiredate < '1986-01-01' and sal BETWEEN 1200 AND 2500;
+----------+----------+
| EMP Name | Job Role |
+----------+----------+
| ALLEN    | SALESMAN |
| WARD     | SALESMAN |
| MARTIN   | SALESMAN |
| CLARK    | MANAGER  |
| TURNER   | SALESMAN |
| MILLER   | CLERK    |
+----------+----------+
6 rows in set (0.00 sec)
```

/*
4. List the empno, name, and department number of the emp works under manager with id 7698
*/

SELECT empno, ename, deptno FROM EMP
WHERE mgr = 7698;

```
mysql> SELECT empno, ename, deptno FROM EMP
    -> WHERE mgr = 7698;
+-------+--------+--------+
| empno | ename  | deptno |
+-------+--------+--------+
|  7499 | ALLEN  |     30 |
|  7521 | WARD   |     30 |
|  7654 | MARTIN |     30 |
|  7844 | TURNER |     30 |
|  7900 | JAMES  |     30 |
+-------+--------+--------+
5 rows in set (0.00 sec)
```

/*
5. List the name, job, and salary of the emp who are working in departments 10 and

30.
*/
SELECT ename, job, sal FROM EMP
WHERE deptno IN (10, 30);

```
mysql> SELECT ename, job, sal FROM EMP
    -> WHERE deptno IN (10, 30);
+--------+-----------+---------+
| ename  | job       | sal     |
+--------+-----------+---------+
| ALLEN  | SALESMAN  | 1600.00 |
| WARD   | SALESMAN  | 1250.00 |
| MARTIN | SALESMAN  | 1250.00 |
| BLAKE  | MANAGER   | 2850.00 |
| CLARK  | MANAGER   | 2450.00 |
| KING   | PRESIDENT | 5000.00 |
| TURNER | SALESMAN  | 1500.00 |
| JAMES  | CLERK     |  950.00 |
| MILLER | CLERK     | 1300.00 |
+--------+-----------+---------+
9 rows in set (0.00 sec)
```

/*
6. Display name concatenated with dept code separated by comma and space. Name the column as ‘Emp info’.
*/
SELECT CONCAT(ename," ",deptno) as "Emp Info" FROM EMP;

```
mysql> SELECT CONCAT(ename," ",deptno) as "Emp Info" FROM EMP;
+-----------+
| Emp Info  |
+-----------+
| SMITH 20  |
| ALLEN 30  |
| WARD 30   |
| JONES 20  |
| MARTIN 30 |
| BLAKE 30  |
| CLARK 10  |
| SCOTT 20  |
| KING 10   |
| TURNER 30 |
| ADAMS 20  |
| JAMES 30  |
| FORD 20   |
| MILLER 10 |
+-----------+
14 rows in set (0.00 sec)
```

-- 7. Display the emp details who do not have manager.
SELECT * FROM EMP
WHERE MGR IS NULL;

```
mysql> SELECT * FROM EMP
    -> WHERE MGR IS NULL;
+-------+-------+-----------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB       | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+-----------+------+------------+---------+------+--------+
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
+-------+-------+-----------+------+------------+---------+------+--------+
1 row in set (0.00 sec)
```

/*
8. Write a query which will display name, department no and date of joining of all employee who were joined January 1, 1981 and March 31, 1983. Sort it based on date of joining (ascending).
 */
SELECT ename, deptno, hiredate FROM EMP
WHERE hiredate IN ('1981-01-01', '1983-03-31')
ORDER BY hiredate DESC;

```
mysql> SELECT ename, deptno, hiredate FROM EMP
    -> WHERE hiredate IN ('1981-01-01', '1983-03-31')
    -> ORDER BY hiredate DESC;
Empty set (0.00 sec)
```

/*
9. Display the employee details where the job contains word ‘AGE’ anywhere in the Job
 */

 SELECT * FROM EMP
 WHERE job LIKE '%AGE%';

SELECT * FROM EMP
 WHERE job REGEXP 'AGE';

```
mysql> SELECT * FROM EMP
    ->   WHERE job LIKE '%AGE%';
+-------+-------+---------+------+------------+---------+------+--------+
| 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 |
+-------+-------+---------+------+------------+---------+------+--------+
3 rows in set (0.00 sec)
```

/*
11. List the details of the employee , whose names start with ‘A’ and end with ‘S’ or whose names contains N as the second or third character, and ending with either ‘N’ or ‘S’.
 */
SELECT * FROM EMP
WHERE ename REGEXP '^A.*S$ | ^..?N.*[NS]$';

```
mysql> SELECT * FROM EMP
    -> WHERE ename REGEXP '^A.*S$ | ^..?N.*[NS]$';
Empty set (0.00 sec)
```

-- 12. List the names of the emp having '_' character in their name.
SELECT * FROM EMP
WHERE ename REGEXP '_';

```
mysql> SELECT * FROM EMP
    -> WHERE ename REGEXP '_';
Empty set (0.00 sec)
```

-- Group functions

-- 1. Display the Highest, Lowest, Total & Average salary of all employee. Label the columns
-- Maximum, Minimum, Total and Average respectively for each Department. Also round the
-- result to the nearest whole number.

SELECT deptno as dept,MAX(sal) as max,MIN(sal) as min, SUM(sal) as Total,AVG(sal) as avg FROM EMP Group By dept ;

```
mysql> SELECT deptno as dept,MAX(sal) as max,MIN(sal) as min, SUM(sal) as Total,AVG(sal) as avg F
ROM EMP Group By dept ;
+------+---------+---------+----------+-------------+
| dept | max     | min     | Total    | avg         |
+------+---------+---------+----------+-------------+
|   20 | 3000.00 |  800.00 | 10875.00 | 2175.000000 |
|   30 | 2850.00 |  950.00 |  9400.00 | 1566.666667 |
|   10 | 5000.00 | 1300.00 |  8750.00 | 2916.666667 |
+------+---------+---------+----------+-------------+
3 rows in set (0.00 sec)
```

2

-- 2. Display Department no and number of managers working in that department. Label the
-- column as 'Total Number of Managers' for each department.

SELECT deptno ,COUNT(mgr) as 'Total Number of Managers'from EMP Group By deptno;

```
mysql> SELECT deptno ,COUNT(mgr) as 'Total Number of Managers'from EMP Group By deptno;
+--------+--------------------------+
| deptno | Total Number of Managers |
+--------+--------------------------+
|     20 |                        5 |
|     30 |                        6 |
|     10 |                        2 |
+--------+--------------------------+
3 rows in set (0.00 sec)
```

-- 3. Get the Department number, and sum of Salary of all non managers where the sum is
-- greater than 6500

```
SELECT deptno,  SUM(sal) as sal FROM EMP
   WHERE job != 'Manager'
   GROUP BY deptno
   HAVING SUM(sal) >6500;
```

```
mysql> SELECT deptno,  SUM(sal) as sal FROM EMP
    ->     WHERE job != 'Manager'
    ->     GROUP BY deptno
    ->     HAVING SUM(sal) >6500;
+--------+---------+
| deptno | sal     |
+--------+---------+
|     20 | 7900.00 |
|     30 | 6550.00 |
+--------+---------+
2 rows in set (0.00 sec)
```