1. Write a query to find employees whose name contains the letter 'A' anywhere in the name, and order the result by their hire date.
   - Select empname, hiredate
     From employee
     Where empname LIKE '%A%'
     Order by hiredate;

2. Write a query to find employees whose name starts with 'M' and whose job is 'SALESMAN'.
   - Select empname, job
     From employee
     Where empname LIKE 'M%' AND job = salesman;

3. Write a query to find employees whose name ends with 'R', whose job is either 'SALESMAN' or 'MANAGER', and display their salaries.
   - Select empname, job, sal
     From employee
     Where empname LIKE '%R' AND JOB IN
     ('SALESMAN','MANAGER');

4. Write a query to find employees whose name has exactly 6 letters, and display their names, jobs, and salaries.
   - Select empname, job, sal
     From employee
     Where empname LIKE '_____';

5. Write a query to find employees whose name contains the letter 'S' in the second position and display their names, jobs, and hire dates.
   - Select empname, job, hiredate
     From employee
     Where empname LIKE '_S%' ;

6. Write a query to find employees ordered by their hire date in ascending order, but if two employees have the same hire date, order by their salary in descending order.
- Select *
   From employee
   Order by hiredate asc, sal desc;

7. Write a query to find employees ordered by their commission in descending order, and then by their job.
- Select *
   From employee
   Order by comm desc, job;

8. Write a query to find employees in department 30, ordered by their job title in ascending order and then by salary in descending order.
- Select *
   From employee
   Where deptno = 30
   Order by job asc, sal desc;

9. Write a query to find employees whose salary is between 1000 and 3000, ordered by their hire date and then by their job in descending order.
   select * from employee
   Where sal between 1000 and 3000
   Order by hiredate asc, job desc;

10.   Write a query to find employees in departments 10 and 20, ordered by their hire date, and if the hire date is the same, order by their name in ascending order.
   Select * from employee
   Where deptno in (10,20)
   Order by hiredate asc, empname asc;

11. Write a query to display the top 5 employees with the highest commission who work as a SALESMAN.
    - Select empname,comm
      From employee
      Where job = 'salesman'
      Order by comm desc
      Limit 5;

12. Write a query to display the top 3 employees with the earliest hire dates in department 30.
    - Select empname, hiredate
      From employee
      Where deptno=30
      Order by hiredate asc
      Limit 3;

13. Write a query to find the top 5 employees who have the lowest salary and display their names, jobs, and salaries.
    - Select empname, job, sal
      From employee
      Order by sal asc
      Limit 5;

14. Write a query to display the first 3 employees in terms of salary from department 20, ordered by salary in ascending order.
    Select empname, sal
    From employee
    Where deptno=20
    Order by sal asc
    Limit 3;

15. Write a query to display the bottom 3 employees (by salary) in departments 10 and 20, ordered by salary in descending order.

Select empname, sal
From employee
Where deptno in (10,20)
Order by sal desc
Limit 3;

- HAVING CLAUSE:

It is used to filter records based on aggregate functions(count(), sum(),……)

Purpose:
- It filters the grouped data based on a condition.
- While where clause filters the rows before grouping.
- Having clause filters the group after aggregation
- It is used in conjunction with group by clause to filter grouped data
- Having clause is used after the group by clause
- We can use aggregate functions in having clause

Ex. Get the departments where total salary is more than 9000.

Select deptno,sum(sal) AS total_salary

From employee

Group by deptno

Having sum(sal) > 9000;

Explanation:

- The data is grouped by department
- The sum(sal) for each department is calculated
- Only groups where total salary is more than 9000 will be in resultset.

Ex. To get departments with more than 5 employees.

```
Select deptno, count(*) AS employee_count
From employee
Group by deptno
Having count(*) > 5;
```

Ex. To get the departments where total salary is more than 9200 and the maximum salary is less than 10000.

```
Select deptno, sum(sal) as Total_salary, max(sal) as max_salary

From employee

Group by deptno

Having sum(sal) > 9200 AND max(sal) < 10000;
```

(Recheck)

D5 assignment

1. Write a query to display all distinct job titles from the emp table.
   Select distinct job
   From employee;

2. Write a query to display distinct commission (COMM) values that employees earn.
   Select distinct comm
   From employee;

3. Write a query to find how many distinct managers (MGR) are present in the emp table.
   Select count(distinct mgr) AS distinct_manager
   From employee;

4. Write a query to display distinct combinations of salary (SAL) and commission (COMM).
   Select distinct sal,comm
   From employee;

5. Write a query to display distinct department number (DEPTNO) and job title (JOB) combinations.
   Select distinct deptno, job
   From employee;

6. Write a query to display the total and average salary (SAL) for each job title (JOB).
   Select job, sum(sal) as total_salary, avg(sal) as average_salary
   From employee
   Group by job;

7. Write a query to find the highest salary (SAL) among employees who have non-null commission (COMM).
   ```
   Select max(sal) as highest_sal
   From employee
   Where comm is not null;
   ```

8. Write a query to count the number of employees earning more than the average salary.
   ```
   Select count(*) as employee_count
   From employee
   Where sal > (Select avg(sal) from employee);
   ```

   ```
   To calculate the average salary of employees:
   Select avg(sal) from employee;
   ```

9. Write a query to calculate the total salary for employees under manager (MGR = 7839).
   ```
   Select sum(sal) as total_salary
   From employee
   Where mgr=7839;
   ```

10. Write a query to find the earliest hire date (HIREDATE) for each department.
   ```
   Select deptno, min(hiredate) as earliest_hiredates
   From employee
   Group by deptno;
   ```

11. Write a query to count the number of employees for each department (DEPTNO) and job (JOB).
   ```
   Select deptno,job, count(*) as employee_count
   From employee
   Group by deptno, job;
   ```

12.   Write a query to calculate the total salary of employees working under each manager (MGR).

```sql
Select mgr, sum(sal) as total_salary
From employee
Group by mgr;
```

13.   Write a query to display the average salary by job for departments that have more than 3 employees.

```sql
Select deptno, job, avg(sal) as average_salary
From employee
Group by deptno, job
Having count(*) >3;
```

14.   Write a query to find the departments where the maximum salary is greater than 2000.

```sql
Select deptno
From employee
Group by deptno
Having max(sal) > 3000;
```

15.   Write a query to find the total salary and employee count by manager (MGR).

```sql
Select mgr, sum(sal) as total_salary, count(*) as employee_count
From employee
Group by mgr;
```

1. Single row subquery: returns a single value
2. Multi-row subquery : returns multiple rows
3. Correlated queries: dependes on outer query for execution

Ex. Find the name of employee who earns the highest salary

==Select empname==

==From employee==

==Where sal = (select max(sal) from employee);==

Ex. Find all employees who work in the same department as employees earning more than 3500.*