**[SQL Queries](file:///C:\\Users\\Admin\\Desktop\\Mamta\\pdf\\SQLQueriesPart3.pdf)**

**1.Basic:**

1. **Write a query to display the names (first\_name, last\_name) using alias name “First Name", "Last Name".**

Ans:- SELECT FIRST\_NAME as First ,LAST\_NAME as Last FROM employees;

**2) Write a query to get unique department ID from employee table.**

Ans:- SELECT distinct(DEPARTMENT\_ID) FROM employees;

1. **Write a query to get the details of all employees according to first name in descending order.**

Ans:- SELECT \* FROM employees order by FIRST\_NAME desc;

**4) Write a query to get the employee ID, name (first\_name, last\_name), salary in ascending order of salary.**

Ans:- SELECT EMPLOYEE\_ID,FIRST\_NAME,LAST\_NAME,SALARY FROM employees order by salary;

**5) Write a query to get the maximum and minimum salary from employees table.**

Ans:- SELECT max(salary),min(salary) FROM employees order by salary;

**6) Write a query to get the average salary and number of employees in the employees table.**

Ans:- SELECT avg(salary),count(\*) FROM employees;

**7) Write a query to get the number of employees working with the company.**

Ans:- SELECT count(\*) FROM employees;

**8) Write a query to get the number of designations available in the employees table.**

Ans:- select count(distinct(job\_id)) from employees;

**9) Write a query get all first name from employees table in upper case.**

Ans:- SELECT upper(First\_name) FROM employees;

**10) Write a query to get the first three characters of first name of all employees.**

Ans:- SELECT substring(First\_name,1,3) FROM employees;

**11) Write a query to calculate 171\*214+625.**

Ans:- SELECT 171\*214+625;

**2.Restricting and Sorting data:**

1. **Write a query to display the name (first\_name, last\_name) and salary for all employees whose salary is not in the range $10,000 through $15,000 .**

Ans:- select first\_name,last\_name,salary from employees where salary>10000 or salary<15000;

1. **Write a query to display the name (first\_name, last\_name) and department ID of all employees in departments 30 or 100 in ascending order.**

Ans:- select first\_name,last\_name,department\_id from employees where DEPARTMENT\_ID in (30,100) order by department\_id;

1. **Write a query to display the name (first\_name, last\_name) and salary for all employees whose salary is not in the range $10,000 through $15,000 and are in department 30 or 100 .**

Ans:- select first\_name,last\_name,salary from employees where salary > 10000 or salary<15000 and department\_id in(30,100);

1. **Write a query to display the name (first\_name, last\_name) and hire date for all employees who were hired in 1987 .**

Ans:- select \* from employees where HIRE\_DATE like'1987%';

1. **Write a query to display the first\_name of all employees who have both "b" and "c" in their first name.**

Ans:- select FIRST\_NAME from employees where FIRST\_NAME like'%b%' or FIRST\_NAME like'%c%';

1. **Write a query to display the last name, job, and salary for all employees whose job is that of a Programmer or a Shipping Clerk, and salary is not equal to $4,500, $10,000, or $15,000.**

Ans:- select \* from employees where JOB\_ID in('IT\_PROG','SH\_CLERK')and SALARY not in(4500,1000,1500);

1. **Write a query to display the last name of employees whose name have exactly 6 characters.**

Ans:- select LAST\_NAME from employees where last\_name like'\_\_\_\_\_\_'; OR

select LAST\_NAME from employees where length(LAST\_NAME)=6;

1. **Write a query to display the last name of employees having 'e' as the third character.**

Ans:- select LAST\_NAME from employees where last\_name like'\_\_e%';

1. **Write a query to display the jobs/designations available in the employees table.**

Ans:- select distinct(job\_id) from employees;

1. **Write a query to display the name (first\_name, last\_name), salary and PF (15% of salary) of all employees.**

Ans:- select First\_name ,last\_name,salary,salary\*0.15 as PF from employees;

1. **Write a query to select all record from employees where last name in 'BLAKE', 'SCOTT', 'KING' and 'FORD'.**

Ans:- select \* from employees where last\_name in('BLAKE','SCOTT','KING','FORD');

**3. Aggregate Functions**

1. **Write a query to list the number of jobs available in the employees table.**

Ans:- SELECT COUNT(DISTINCT job\_id) FROM employees;

1. **Write a query to get the total salaries payable to employees.**

Ans:- SELECT SUM(salary) FROM employees;

1. **Write a query to get the minimum salary from employees table.**

Ans:- SELECT min(salary) FROM employees;

1. **Write a query to get the maximum salary of an employee working as a Programmer.**

Ans:- select max(salary) from employees where JOB\_ID='IT\_PROG';

1. **Write a query to get the average salary and number of employees working the department 90.**

Ans:- select avg(salary),count(\*) from employees where DEPARTMENT\_ID=90;

1. **Write a query to get the highest, lowest, sum, and average salary of all employees.**

Ans:- select max(salary),min(salary),sum(salary),avg(salary) from employees ;

1. **Write a query to get the number of employees with the same job.**

Ans:- SELECT job\_id, COUNT(\*)FROM employees GROUP BY job\_id;

1. **Write a query to get the difference between the highest and lowest salaries.**

Ans:- SELECT MAX(salary) - MIN(salary) DIFFERENCE FROM employees;

1. **Write a query to find the manager ID and the salary of the lowest-paid employee for that manager.**

Ans:- select MANAGER\_ID,min(SALARY) from employees group by MANAGER\_ID ;

1. **Write a query to get the department ID and the total salary payable in each department.**

Ans:- SELECT department\_id, SUM(salary) FROM employees GROUP BY department\_id;

1. **Write a query to get the average salary for each job ID excluding programmer.**

Ans:- select avg(salary),job\_id from employees where job\_id!='IT\_PROG' group by job\_id;

1. **Write a query to get the total salary, maximum, minimum, average salary of employees.**

Ans:- select sum(salary),max(salary),min(salary),avg(salary) from employees

1. **Write a query to get the job ID and maximum salary of the employees where maximum salary is greater than or equal to $4000.**

Ans:- SELECT job\_id, MAX(salary) FROM employees GROUP BY job\_id HAVING MAX(salary) >=4000;

1. **Write a query to get the average salary for all departments employing more than 10 employees.**

Ans:- SELECT department\_id, AVG(salary), COUNT(\*) FROM employees GROUP BY department\_id HAVING COUNT(\*) > 10;

**4. SubQuery**

1. Write a query to find the name (first\_name, last\_name) and the salary of the employees who have a higher salary than the employee whose last\_name='Bull'.

Ans:- Select first\_name,Last\_name,salary from employees where salary> (select salary from employees where LAST\_NAME='Bull');

1. Write a query to find the name (first\_name, last\_name) of all employees who works in the IT department .

Ans:- select first\_name ,last\_name from employees where DEPARTMENT\_ID in(select DEPARTMENT\_ID from departments where DEPARTMENT\_NAME like'IT%');

3) Write a query to find the name (first\_name, last\_name) of the employees who have a manager and worked in a USA based department.

Ans:-Select FIRST\_NAME,Last\_name from employees where MANAGER\_ID!=0 and DEPARTMENT\_ID in(select DEPARTMENT\_ID from departments where location\_id in(select LOCATION\_ID from locations where COUNTRY\_ID='US'));

4)Write a query to find the name (first\_name, last\_name) of the employees who are managers.

Ans:- select first\_name,last\_name from employees where EMPLOYEE\_ID in(select MANAGER\_ID from employees);

5) Write a query to find the name (first\_name, last\_name), and salary of the employees whose salary is greater than the average salary.

Ans:- select first\_name,last\_name,salary from employees where salary>(select avg(salary)from employees);

6) Write a query to find the name (first\_name, last\_name), and salary of the employees whose salary is equal to the minimum salary for their job grade.

Ans:- Select FIRST\_NAME,Last\_name,Salary from employees where salary=(select MIN\_SALARY from jobs where JOB\_ID=employees.JOB\_ID);

7) Write a query to find the name (first\_name, last\_name), and salary of the employees who earns more than the average salary and works in any of the IT departments.

Ans:- select first\_name,last\_name,salary from employees where salary>(select avg(salary) from employees) and department\_id in(select DEPARTMENT\_ID from departments where DEPARTMENT\_NAME like'IT%');

8) Write a query to find the name (first\_name, last\_name), and salary of the employees who earns more than the earning of Mr. Bell.

Ans:- select first\_name,last\_name,salary from employees where salary>(select salary from employees where last\_name like'Bell');

9) Write a query to find the name (first\_name, last\_name), and salary of the employees who earn the same salary as the minimum salary for all departments.

Ans:- SELECT first\_name,LAST\_NAME,SALARY FROM employees e1 where salary=(select min(salary) from employees e2 where e2.DEPARTMENT\_ID=e1.DEPARTMENT\_ID);

10) Write a query to find the name (first\_name, last\_name) and salary of the employees who earn a salary that is higher than the salary of all the Shipping Clerk (JOB\_ID = 'SH\_CLERK'). Sort the results of the salary of the lowest to highest.

Ans:- select first\_name,last\_name,salary from employees where salary>(select max(salary) from employees where JOB\_ID='sh\_clerk') order by salary;

11) Write a query to find the name (first\_name, last\_name) of the employees who are not Programmer.

Ans:- select FIRST\_NAME,last\_name,Job\_Id from employees where job\_id<>'IT\_PROG';

12) Write a query to display the employee ID, first name, last name, and department names of all employees.

Ans:- select first\_name,last\_name,(select DEPARTMENT\_NAME from departments where departments.DEPARTMENT\_ID=employees.DEPARTMENT\_ID ) As Depatment\_Name from employees;

13) Write a query to display the employee ID, first name, last name, salary of all employees whose salary is above average for their departments.

Ans:- select EMPLOYEE\_ID,FIRST\_NAME,LAST\_NAME,SALARY from employees where salary>(select avg(salary) from employees where DEPARTMENT\_ID=employees.DEPARTMENT\_ID);

14) Write a query to fetch even numbered records from employees table.

Ans:- select EMPLOYEE\_ID from employees where EMPLOYEE\_ID%2=0;

15) Write a query to find the 5th maximum salary in the employees table.

Ans:- select salary from employees order by salary desc limit 4,1;

16) Write a query to find the 4th minimum salary in the employees table.

Ans:- select salary from employees order by salary desc limit 3,1;

17) Write a query to select last 10 records from a table.

Ans:- select \* from(select \* from employees order by employee\_id desc limit 10)data order by EMPLOYEE\_ID;

18) Write a query to list the department ID and name of all the departments where no employee is working.

Ans:-SELECT DEPARTMENT\_ID, DEPARTMENT\_NAME FROM departments WHERE department\_id NOT IN (select department\_id FROM employees);

19) Write a query to get 3 maximum salaries.

Ans:- select distinct(salary)from employees order by salary desc limit 3

20) Write a query to get 3 minimum salaries.

Ans:- select distinct(salary)from employees order by salary limit 3

**5)Joins**

1. Write a query to find the addresses (location\_id, street\_address, city, state\_province, country\_name) of all the departments.

Ans:- select LOCATION\_ID,STREET\_ADDRESS,CITY,STATE\_PROVINCE,COUNTRY\_NAME from locations natural join countries;

1. Write a query to find the name (first\_name, last name), department ID and department name of all the employees.

Ans:- select FIRST\_NAME,LAST\_NAME,DEPARTMENT\_ID,DEPARTMENT\_NAME from employees join departments using (department\_id);

1. Write a query to find the name (first\_name, last\_name), job, department ID and name of the employees who works in London.

Ans:- select first\_name,last\_name,job\_title,e.department\_id,department\_name,city

from employees e join departments d on e.department\_id=d.department\_id

join locations l on l.location\_id=d.location\_id join jobs j

on e.job\_id=j.job\_id where city='London';

1. Write a query to find the employee id, name (last\_name) along with their manager\_id and name (last\_name).

Ans:- select e.EMPLOYEE\_ID,e.LAST\_NAME,d.EMPLOYEE\_ID,d.LAST\_NAME

from employees e join employees d on e.MANAGER\_ID=d.EMPLOYEE\_ID;

1. Write a query to find the name (first\_name, last\_name) and hire date of the employees who was hired after 'Jones'.

Ans:- select first\_name,last\_name,hire\_date from employees where HIRE\_DATE<(select HIRE\_DATE from employees where LAST\_NAME='jones');

1. Write a query to get the department name and number of employees in the department.

Ans:-select department\_name,count(\*) from departments inner join employees on employees.department\_id=departments.department\_id group by departments.department\_id,department\_name;

1. Write a query to find the employee ID, job title, number of days between ending date and starting date for all jobs in department 90.

Ans:- select Employee\_id,job\_title,(jh.end\_date-jh.start\_date)

from job\_history jh natural join jobs where department\_id=90;

1. Write a query to display the department ID and name and first name of manager.

Ans:- select d.DEPARTMENT\_ID,DEPARTMENT\_NAME,FIRST\_NAME

from employees e join departments d on e.EMPLOYEE\_ID=d.MANAGER\_ID order by d.DEPARTMENT\_ID

1. Write a query to display the department name, manager name, and city.

Ans:- select DEPARTMENT\_NAME,FIRST\_NAME,CITY from employees e join departments d on e.EMPLOYEE\_ID=d.MANAGER\_ID join locations l on l.LOCATION\_ID=d.LOCATION\_ID ;

1. Write a query to display the job title and average salary of employees.

Ans:- select JOB\_TITLE,avg(SALARY) from employees natural join jobs group by JOB\_TITLE;

1. Write a query to display job title, employee name, and the difference between salary of the employee and minimum salary for the job.

Ans:- select JOB\_TITLE,FIRST\_NAME,(SALARY-MIN\_SALARY)diff from employees natural join jobs

1. Write a query to display the job history that were done by any employee who is currently drawing more than 10000 of salary.

Ans:- select jh.\* from job\_history jh

join employees e on jh.EMPLOYEE\_ID=e.EMPLOYEE\_ID where salary>10000;

1. Write a query to display department name, Department Manager (first\_name, last\_name), hire date of manager, salary of the manager for those managers whose experience is more than 15 years.

Ans:- select department\_name,first\_name,last\_name,hire\_date,salary

from departments d join employees e on (d.manager\_id=e.employee\_id)

where (DATEDIFF(now(),hire\_date))/365>15