

Location	
Location_Id	Regional_Group
122	New York
123	Dallas
124	Chicagoz
167	Boston

Manager		
Manager_Id	M_Name	Salary
7902	Daniel	30000
7698	Parker	20000
7839	Peter	27000

Sales_Grade				
Id	Grade	Minimum	Midpoint	Maximum
1	A	20000	22000	24000
2	B	25000	27000	29000
3	C	30000	32000	34000
4	D	35000	37000	39000

Department		
Department_Id	Name	Location
10	Accounting	122
20	Research	124
30	Sales	123
40	Operations	167

Job	
Job_Id	Function
667,	'Clerk'
668,	'Staff'
669,	'Analyst'
670,	'Salesperson'
671,	'Manager'
672,	'President'

EMPLOYEE								
Employee_id	Last_Name	First_Name	Middle_Name	Job_Id	Manager_Id	HireDate	Department_Id	Salary
7369,	'Smith,	John,	Q,	667,	7902,	17-dec-84,	10,,	20000
7499,	Allen,	Kevin,	J,	670,	7698,	20-feb-85,	10,	22000
7505,	Doyle,	Jean,	K,	671,	7839,	04-Apr-85,	30,	24000
7506,	Dennis,	Lynn,	S,	671,	7839,	15-May-85,	40,	30000
7507,	Baker,	Leslie,	D,	671,	7839,	10-Jun-85,	20,10	35000
7521,	Wark,	Cynthia,	D,	670,	7698,	22-Feb-85,	10,	22000

QUERIES BASED ON THE ABOVE TABLES:

Simple Queries:

1. List all the employee details
`Select * from EMPLOYEE;`
2. List all the department details
`Select * from Department;`
3. List all job details
`Select * from Job;`
4. List all the locations
`Select Regional_Group from Location;`
5. List out first name, last name, salary, commission for all employees
`Select First_Name, Last_Name, Salary from EMPLOYEE;`
(Commission column is missing in table)
6. List out employee_id, last name, department id for all employees and rename employee id as “ID of the employee”, last name as “Name of the employee”, department id as “department ID”
`Select Employee_id as "ID of the employee", Last_Name as "Name of the employee",
Department_Id as "department ID" from EMPLOYEE;`
7. List out the employees annual salary with their names only.
`Select First_Name+' '+Last_Name as "Name of Employee", Salary*12 as "Annual Salary" from EMPLOYEE;`

Where conditions:

8. List the details about “SMITH”
`Select * from EMPLOYEE where Last_Name='Smith';`
9. List out the employees who are working in department 20
`Select * from EMPLOYEE where Department_Id=20;`
10. List out the employees who are earning salary between 20000 and 35000
`Select * from EMPLOYEE where Salary between 20000 and 35000;`
11. List out the employees who are working in departments 10 or 20
`Select * from EMPLOYEE where Department_Id in (10,20);`
12. Find out the employees who are not working in department 10 or 30
`Select * from EMPLOYEE where Department_Id not in (10,30);`
13. List out the employees whose name starts with “S”
`Select * from EMPLOYEE where First_Name like 'S%';`

14. List out the employees whose name starts with "S" and ends with "H"

Select * from EMPLOYEE where First_Name like 'S%H';

15. List out the employees whose name length is 5 and start with "S"

Select * from EMPLOYEE where First_Name like 'S____';

16. List out the employees who are working in department 10 and draw the salaries more than 20000

Select * from EMPLOYEE where Department_Id=10 and Salary>20000;

17. List out the employees who are not receiving commission

Select * from EMPLOYEE where Commission=0;

(Commission column is missing in table)

Order by Clause:

18. List out the employee id, last name in ascending order based on the employee id

Select Employee_id, Last_Name from EMPLOYEE order by Employee_id;

19. List out the employee id, name in descending order based on salary column

Select Employee_id, First_Name+' '+Last_Name as Name from EMPLOYEE order by Salary DESC;

20. List out the employee details according to their last_name in ascending order and salaries in descending order

Select * from EMPLOYEE order by Last_Name, Salary Desc;

21. List out the employee details according to their last name in ascending order and then on department id in descending order

Select * from EMPLOYEE order by Last_Name, Department_Id Desc;

Group by & Having Clause:

22. How many employees who are working in different departments wide in the organization?

Select Department_Id, count(*) from EMPLOYEE group by Department_Id;

23. List out the department wise maximum salary, minimum salary, and average salary of the employees?

Select Department_Id, max(Salary), min(Salary), Avg(Salary) from EMPLOYEE group by Department_Id;

24. List out the job wise maximum salary, minimum salary, and average salary of the employees?

Select Job_Id, max(Salary), min(Salary), Avg(Salary) from EMPLOYEE group by Job_Id;

25. List out the no of employees joined in every month in ascending order?

Select Month(HireDate), count(*) from EMPLOYEE group by Month(HireDate) order by Month(HireDate);

26. List out the no of employees for each month and year, in the ascending order based on the year, month?

Select Month(HireDate), Year(HireDate), count(*) from EMPLOYEE group by Month(HireDate), Year(HireDate) order by Month(HireDate), Year(HireDate);

27. List out the department id having at least 1 employees?

Select Department_Id, count(*) from EMPLOYEE group by Department_Id having count(*)>0;

28. How many employees in february month?

Select count(*) from EMPLOYEE where Month(HireDate)='February' group by Month(HireDate)

29. How many employees who are joined in January or December month?

Select Month(HireDate), count(*) from EMPLOYEE where Month(HireDate) in ('January', 'December') group by Month(HireDate)

30. How many employees who are joined in 1985?

Select count(*) from EMPLOYEE where Year(HireDate)=1985 group by Year(HireDate)

31. How many employees joined in each month in 1985?

Select Month(HireDate), count(*) from EMPLOYEE where Year(HireDate)=1985 group by Month(HireDate)

32. How many employees who are joined in february1985?

Select count(*) from EMPLOYEE where Year(HireDate)=1985 and Month(HireDate)='February' group by Month(HireDate), Year(HireDate)

33. Which is the department id, having greater than or equal to 3 employees joined in April 1985?

Select Department_Id, count(*) from EMPLOYEE where Year(HireDate)=1985 and Month(HireDate)='April' group by Department_Id having count(*)>=3;

Sub Queries:

34. Display the employee who got the maximum salary

Select * from EMPLOYEE where Salary= (Select Max(Salary) from EMPLOYEE);

35. Display the employees who are working in sales department

Select * from EMPLOYEE where Department_Id in (Select Department_Id from Department where name='Sales');

36. Display the employees who are working as "Clerk"

Select * from EMPLOYEE where Job_Id in (Select Job_Id from Job where Function='Clerk');

37. Display the employees who are working in "New York"

Select * from EMPLOYEE where Department_Id in (Select Department_Id from Department where Location_Id= (Select Location_Id from Location where Regional_Group="New York"));

38. Find out no of employees working in "Sales" department

Select count(*) from EMPLOYEE where Department_Id in (Select Department_Id from Department where name='Sales');

39. Update the employees' salaries who are working as clerk on the basis of 10%
Update EMPLOYEE set Salary=(Salary+Salary*0.1) where Job_Id in (Select Job_Id from Job where Function='Clerk')

40. Delete the employees who are working in accounting department
Delete from EMPLOYEE where Department_Id= (Select Department_Id from Department where Name='Accounting');

41. Display the second highest salary drawing employee details
Select * from EMPLOYEE where Salary = (Select max(Salary) from EMPLOYEE where Salary<(Select max(Salary) from EMPLOYEE));

42. Display the Nth highest salary drawing employee details
Select * from EMPLOYEE A where n-1= (Select count(1) from EMPLOYEE B where B.Salary > A.Salary);

OR

Select * from EMPLOYEE order by Salary DESC limit n-1,1;

Sub Query Operators (ALL, ANY, SUM, EXISTS)

43. List out the employees who earn more than every employee in department 30
Select * from EMPLOYEE where Salary> All (Select Salary from EMPLOYEE where Department_Id=30);

44. List out the employee who earn more than the lowest salary in department 10
Select * from EMPLOYEE where Salary> Any (Select min(Salary) from EMPLOYEE where Department_Id=10);

45. Find out which department does not have any employees
Select Name from Department where Department_Id in (Select Department_Id from EMPLOYEE where count(*)=0 group by Department_Id)

Co-Related Sub Queries:

46. Find out the employees who earn greater than the average salary for their department
Select * from EMPLOYEE A where Salary> (Select Avg(Salary) from EMPLOYEE where Department_Id= A.Department_Id group by Department_Id);

JOINS

Simple Join:

47. List out the employees with their department names
Select Employee_Id, First_Name, Last_Name, E.Department_Id, Name, Salary from Employee E
inner join Department D on E.Department_Id= D.Department_Id;

48. Display employees with their designations (jobs)

Select Employee_Id, First_Name, Last_Name, E.Job_Id, Function, Salary from Employee E inner join Job J on E.Job_Id= J.Job_Id;

49. Display the employees with their department name and regional groups

Select Employee_Id, First_Name, Last_Name, E.Department_Id, Name, Regional_Group, Salary from Employee E inner join Department D on E.Department_Id= D.Department_Id inner join Location L on D.Location_Id= L.Location_Id;

50. How many employees who are working in different departments and display with department name

Select count(*), E.Department_Id, Name from Employee E inner join Department D on E.Department_Id= D.Department_Id group by Name;

51. How many employees who are working in sales department

Select count(*), E.Department_Id, Name from Employee E inner join Department D on E.Department_Id= D.Department_Id group by Name having Name='Sales';

52. Which is the department having greater than or equal to 5 employees and display the department names in ascending order?

Select count(*), E.Department_Id, Name from Employee E inner join Department D on E.Department_Id= D.Department_Id group by Name having count(*)>=5;

53. How many jobs in the organization with designations

Select count(*), E.Job_Id, Function from Employee E inner join Job J on E.Job_Id= J.Job_Id group by Function;

54. How many employees working in "New york"

Select count(*), Name, Regional_Group, Salary from Employee E inner join Department D on E.Department_Id= D.Department_Id inner join Location L on D.Location_Id= L.Location_Id having Regional-Group='New York';

Non-Equi Join:

55. Display the employee details with salary grades

Select *, Grade from Employee E, Salary_Grade S where Salary between Minimum and Maximum;

56. List out the no of employees on grade wise

Select Grade, count(*) from Salary_Grade S, Employee E where Salary between Minimum and Maximum group by Grade order by Grade DESC;

57. Display the employee salary grades and no of employees between 20000 to 25000 range of salary

Select Grade, count(*) from Salary_Grade S, Employee E where Salary between Minimum and Maximum and Minimum>=20000 and Maximum<=25000 group by Grade order by Grade DESC;

Self-Join:

58. Display the employee details with their manager names

Select *, M_Name from EMPLOYEE E, Manager M where E.Manager_Id=M.Manager_Id;

59. Display the employee details who earn more than their managers salaries

Select *, M_Name from EMPLOYEE E, Manager M where E.Manager_Id=M.Manager_Id and E.Salary>M.Salary ;

60. Show the no of employees working under every manager

Select E.Manager_Id, M_Name, count(*)from EMPLOYEE E, Manager M where E.Manager_Id=M.Manager_Id group by E.Manager_Id;

Outer Join:

61. Display the employee details with all departments

Select Employee_Id, First_Name, Last_Name, E.Department_Id, Name, Salary from Employee E Left Outer join Department D on E.Department_Id= D.Department_Id;

62. Display all employees in sales or operational departments

Select Employee_Id, First_Name, Last_Name, E.Department_Id, Name, Salary from Employee E inner join Department D on E.Department_Id= D.Department_Id and D.Department_Id in (Select Department_Id from Department where Name in(Sales, Operations));

Set Operators:

63. List out the distinct jobs in sales and accounting departments

Select Distinct(Function) from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name = 'Sales'));
Union

Select Distinct(Function) from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name = 'Accounting'));

OR

Select Distinct(Function) from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name in (Sales, Accounting))));

64. List out the ALL jobs in sales and accounting departments

Select Function from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name = 'Sales'));
Union All

Select Function from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name = 'Accounting'));

65. List out the common jobs in research and accounting departments in ascending order

Select Function from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name = 'Sales'));

Intersect

Select Function from Job where Job_Id in (Select Job_Id from EMPLOYEE where Department_Id in (Select Department_Id from Department where Name = 'Accounting'))) order by Function;