

Exercise 4:

Question 1:

Select EmployeeID, FirstName, LastName, Department, Salary, projectID, projectName, Budget, Status
from Employees AS emp
INNER JOIN projects AS pro ON
employeeID = employeeID;

employeeID	firstname	lastname	Department	Salary	projectID
1	John	Doe	IT	70000	101
21	John	Doe	IT	70000	103
2	Alice	Smith	HR	60000	102
3	Bob	Johnson	Finance	75000	104
5	Emma	Wilson	Sales	65000	105
6	David	Brown	Finance	80000	106
6	Michael	Clark	Finance	80000	106

projectName	Budget	Status
AI Development	100 000	Completed
Cybersecurity	75 000	Pending
Employee training	50 000	Ongoing
Finance Analysis	90 000	Ongoing
Market expansion	65 000	Completed
Risk Management	80 000	Pending

2. Select EmployeeID, FirstName, LastName, Department, Salary, ProjectID, projectName, Budget, Status
 from employees as em
 LEFT JOIN projects pro
 on employeeid = employeeid ;

EmployeeID	FirstName	LastName	Department	Salary	ProjectID	ProjectName
1	John		IT	10000	101	AI Development
2	John Doe		IT	70000	103	Cybersecurity Audit
3	Alice	Smith	HR	60000	102	Employee training
4	Bob Johnson		Finance	75000	104	Financial Analysis
5	David	Brown	IT	72000	105	Null
6	Emma	Wilson	Sales	65000	105	Market expansion
7	Michael	Clark	Finance	80000	106	Risk management

Budget

100 000
 75000
 500 000
 90 000
 Null
 65000
 80000

Lastname
 Doe
 Smith
 Doe
 Johnson
 Wilson
 Clark

Question 3:

Select projectID, ProjectName, Budget, status
EmployeeID, firstName, lastName, Department,
Salary
from employees
Right Join orders
on employeeid = employeeid;

projectID	ProjectName	Budget	Status	EmployeeID	firstName
101	AI Development	180000	Completed	1	John
102	Employee Training	50000	Ongoing	2	Alice
103	Cybersecurity Audit	150000	Pending	1	John
104	Financial Analysis	90000	Ongoing	3	Bob
105	Market Expansion	65000	Completed	5	Emma
106	Risk Management	80000	Pending	6	Michael

Lastname	Department	Salary
Doe	IT	70000
Smith	HR	60000
Doe	IT	70000
Johnson	Finance	75000
Wilson	Sales	65000
Clark	Finance	80000

4. Select EmployeeID, FirstName, LastName, Department, Salary, ProjectID, projectName, Budget, Status
 from Employees
 full outer join orders
 on EmployeeID = EmployeeID;

EmployeeID	FirstName	LastName	Department	Salary
1	John	Doe	IT	70000
2	Alice	Smith	HR	60000
3	Bob	Johnson	Finance	75000
4	David	Brown	IT	80000
5	Emma	Wilson	Sales	65000
6	Michael	Clark	Finance	80000
7	John	Doe	IT	70000

ProjectID	ProjectName	Budget	Status
101	AI Development	100000	Completed
102	Employee Training	50000	Ongoing
104	Financial Analysis	40000	Pending
Null	Null	75000	Ongoing
105	Market Expansion	Null	Null
106	Risk Management	65000	Completed
103	Cyber Security Audit	80000	Pending
		75000	Pending

5. Select city As Location from employees
UNION

Select status As Location from ^{projects} orders,

Location
New York
Los Angeles
Toronto
London
Sydney
Completed
Ongoing
Pending

6. Select city As Location from employees

UNION ALL

Select status As Location from projects

Location
New York
Los Angeles
Toronto
London
Sydney
New York
Completed
Ongoing
Pending
Ongoing
Completed
Pending

7. Select EmployeeID, FirstName, LastName, Department, Salary
 from employees
 where salary > 70000,

EmployeeID	FirstName	LastName	Department	Salary
3	Bob	Johnson	Finance	75000
4	David	Brown	IT	72000
6	Michael	Clark	Finance	80000

8. Select EmployeeID, FirstName, LastName, Department, Salary
 from employees
 where department = 'IT' OR 'Finance'

EmployeeID	FirstName	LastName	Department	Salary
1	John	Doe	IT	70000
3	Bob	Johnson	Finance	75000
4	David	Brown	IT	72000
6	Michael	Clark	Finance	80000

9. Select ProjectID, projectName, Budget, Status
 from projects
 where status != Completed;

1
 3
 6
 city
 New York
 Toronto
 New York

ProjectID	ProjectName	Budget	Status
101			
102	Employee training	50000	ongoing
103	Cybersecurity audit	75000	Pending
104	Financial Analysis	90000	ongoing
105	Risk management	80000	Pending

10. Select ProjectID, ProjectName, Budget, Status
 from projects
 where budget > 70000 AND != completed;

ProjectID	ProjectName	Budget	Status
103	Cybersecurity audit	75000	Pending
104	Financial Analysis	90000	ongoing
105	Risk management	80000	Pending

11. Select EmployeeID, firstname, lastname, Department, salary, city
 from employees
 where city = 'New York' OR 'Toronto'
 ORDER BY salary DESC;

EmployeeID	firstname	lastname	Department	salary
1	John	Doe	IT	70000
3	Bob	Johnson	Finance	75000
6	Michael	Clark	Finance	80000

city

New York

Toronto

New York

12 Select EmployeeID, FirstName, LastName, Department, Salary

EmployeeID	firstname	lastname	Department
6	Michael	clark	finance
3	Bob	Johnson	finance
4	John	Doe	IT

salary	city
80000	New York
75000	Toronto
70000	New York

12 Select EmployeeID, FirstName, LastName, Department, Salary
from employees
ORDER BY Salary DESC
Limit 3;

EmployeeID	firstname	lastname	Department
6	Michael	Clark	finance
3	Bob	Johnson	finance
4	David	Brown	IT

salary
80000
75000
70000

13. Select department ,
 SUM (Salary) AS TotalSalary
 from employees
 Group by department
 ORDER BY TotalSalary DESC,

<u>Department</u>	<u>TotalSalary</u>
Finance	155000
IT	142000
Sales	65000
HR	60000

14. Select city ,
 AVG(Salary) AS AverageSalary
 from employees
 Group by city
 Having AVG(Salary) > 65000

<u>City</u>	<u>AverageSalary</u>
New York	75000
London	72000
Toronto	73000

15. Select department ,
 COUNT (EmployeeID) AS EmployeeCount
 from employees
 Group By department
 Having COUNT (EmployeeID) > 1 ,

department	EmployeeCount
IT	2
Finance	2

16. Select Status,
 projectCount (projectId) AS
 projectCount
 from projects
 Group By Status
 Having Count (projectId) >= 2

pro p Status	projectCount
Completed	2
Pending	2

17. Select EmployeeID, FirstName, LastName,
 TotalProjectB (sum (Budget)) AS
 TotalProjectBudget
 from Employees
 INNER JOIN Orders
 group by EmployeeID
 Having sum (Budget) > 150000

EmployeeID	firstname	lastname	Project totalBudget
1	John	Doe	175000