Exercise 4 – Joins, UNION, Filtering and Aggregates)

1. SELECT EmployeeID, FirstName, LastName, Department, Salary, ProjectID, ProjectName, Budget, Status
FROM Employees AS A
INNER JOIN Projects AS B
ON A.EmployeeID = B.EmployeeID;

EmployeeID	FirstName	LastName	Department	Salary	ProjectID	ProjectName	Budget	Status
1	John	Doe	IT	70	101	AI Dev	100	Completed
1	John	Doe	IT	70	103	Cybersecurity Audit	75	Pending
2	Alice	Smith	HR	60	102	Employee training	50	Ongoing
3	Bob	Johnson	Finance	75	104	Financial analysis	90	Ongoing
5	Emma	Wilson	Sales	65	105	Market Expansion	65	Completed
6	Michael	Clark	Finance	80	106	Risk management	80	Pending

2. SELECT EmployeeID, FirstName, LastName, Department, Salary, ProjectID, ProjectName, Budget, Status
FROM Employees AS A
LEFT JOIN Projects AS B
ON A.EmployeeID = B.EmployeeID;

output: completed in lesson 24/07.

3. SELECT ProjectID, ProjectName, Budget, Status, EmployeeID, FirstName, LastName, Department, Salary
FROM Employee AS A
RIGHT JOIN Projects AS B
ON A.EmployeeID = B.EmployeeID;

4. SELECT EmployeeID, FirstName, LastName, Department, Salary, ProjectID, ProjectName, Budget, Status
FROM Employees AS A
FULL OUTER JOIN AS B
ON A.EmployeeID = B.Employee.ID;

5. SELECT DISTINCT City AS Location
FROM Employees
UNION
SELECT DISTINCT Status
FROM Projects;

output:

City	Status
New York	Completed
Los Angeles	Ongoing
Toronto	Pending
London	
Sydney	

6. SELECT City AS Location
FROM Employees
UNION
SELECT Status
FROM Projects;

output:

City	Status
New York	Completed
Los Angeles	Ongoing
Toronto	Pending
London	Ongoing
Sydney	Completed
New York	Pending

7. SELECT EmployeeID, FirstName, LastName, Department, Salary
WHERE Salary > 70 000
FROM Employees;

EmployeeID	FirstName	LastName	Department	Salary
3	Bob	Johnson	Finance	75
4	David	Brown	IT	72
6	Michael	Clark	Finance	80

8. SELECT EmployeeID, FirstName, LastName, Department, Salary
FROM Employees
WHERE department = 'IT' OR department = 'Finance';

EmployeeID	FirstName	LastName	Department	Salary
1	John	Doe	IT	70
3	Bob	Johnson	Finance	75
4	David	Brown	IT	72
6	Michael	Clark	Finance	80

9. SELECT ProjectID, ProjectName, Budget, Status
FROM Projects
WHERE Status != 'completed';

ProjectID	ProjectName	Budget	Status
102	Employee Training	50	Ongoing
103	Cybersecurity Audit	75	Pending
104	Financial Analysis	90	Ongoing
106	Risk management	80	Pending

10. SELECT ProjectID, ProjectName, Budget, Status
FROM Projects
WHERE Budget > 70 000 AND Status != 'Completed';

ProjectID	ProjectName	Budget	Status
103	Cybersecurity Audit	75	Pending
104	Financial Audit	90	Ongoing
106	Risk management	80	Pending

11. SELECT EmployeeID, FirstName, LastName, Department, Salary, City
FROM Employees
WHERE City = 'New York' OR City = 'Toronto'
ORDER BY Salary DESC;

EmployeeID	FirstName	LastName	Department	Salary	City
6	Michael	Clark	Finance	80 000	New York
3	Bob	Johnson	Finance	75 000	Toronto
1	John	Doe	IT	70 000	New York

12. SELECT EmployeeID, FirstName, LastName, Department, Salary
FROM Employees
ORDER BY Salary DESC
LIMIT 3;

EmployeeID	FirstName	LastName	Department	Salary
6	Michael	Clark	Finance	80 000
4	David	Brown	IT	72 000
3	Bob	Johnson	Finance	75 000
4	David	Brown	IT	72 000

13. SELECT Department, SUM(Salary) AS total_salary
FROM Employees
GROUP BY department
ORDER BY DESC;

Department	Total_Salary
Finance	155000
IT	142 000
Sales	65 000
HR	60 000

14. SELECT City, AVG(Salary) AS Avg_Sal
FROM Employees
WHERE Avg_Sal > 65 000
GROUP BY City;

City	Avg_Sal
New York	75 000
Toronto	75 000
London	72 000

15. SELECT Department, COUNT(EmployeeID) AS Employee
FROM Employees
GROUP BY department
HAVING Employeecount > 1;

Department	Employeecount
IT	2
Finance	2

16.
```
SELECT Status, Count(ProjectID) AS ProjectCount
FROM Projects
GROUP BY status
HAVING ProjectCount >=2 ;
```

Status	ProjectCount
Completed	2
Pending	2
Ongoing	2

17.
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SELECT EmployeeID, FirstName, LastName, ~~Sum(Budget) AS~~
~~TotalProjectBudget~~ Sum(Budget) AS TotalProjectBudget
FROM employees AS A
INNER JOIN Projects AS B
ON A.EmployeeID = B.EmployeeID
GROUP BY EmployeeID
HAVING Sum(Budget) >150 000 ;
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EmployeeID	FirstName	LastName	TotalProjectBudget
1	thn	Doe	175 000