**SQL Assignment 22nd Nov**

-- 1. Retrieve all employees in the IT department

SELECT E.FirstName, E.LastName

FROM Employees E

JOIN Departments D ON E.DepartmentID = D.DepartmentID

WHERE D.DepartmentName = 'IT';

-- 2. Find employees hired after 2010

SELECT FirstName, LastName, HireDate

FROM Employees

WHERE HireDate > '2010-01-01';

-- 3. List projects with a budget exceeding $80,000

SELECT ProjectName, Budget

FROM Projects

WHERE Budget > 80000;

-- 4. Sort employees by their hire date in descending order

SELECT FirstName, LastName, HireDate

FROM Employees

ORDER BY HireDate DESC;

-- 5. Show projects sorted by their budget in ascending order

SELECT ProjectName, Budget

FROM Projects

ORDER BY Budget ASC;

-- 6. Count the number of employees in each department

SELECT D.DepartmentName, COUNT(E.EmployeeID) AS NumberOfEmployees

FROM Employees E

JOIN Departments D ON E.DepartmentID = D.DepartmentID

GROUP BY D.DepartmentName;

-- 7. Display the top 3 employees with the highest base salary

SELECT FirstName, LastName, BaseSalary

FROM Employees E

JOIN Salaries S ON E.EmployeeID = S.EmployeeID

ORDER BY BaseSalary DESC

LIMIT 3;

-- 8. Retrieve employee names along with their department names

SELECT E.FirstName, E.LastName, D.DepartmentName

FROM Employees E

JOIN Departments D ON E.DepartmentID = D.DepartmentID;

-- 9. List all assignments, including employee and project details

SELECT E.FirstName, E.LastName, P.ProjectName, A.HoursWorked

FROM Assignments A

JOIN Employees E ON A.EmployeeID = E.EmployeeID

JOIN Projects P ON A.ProjectID = P.ProjectID;

-- 10. Find employees working on the project with the highest budget

SELECT E.FirstName, E.LastName

FROM Assignments A

JOIN Employees E ON A.EmployeeID = E.EmployeeID

JOIN Projects P ON A.ProjectID = P.ProjectID

WHERE P.Budget = (SELECT MAX(Budget) FROM Projects);

-- 11. Calculate the age of each employee

SELECT FirstName, LastName,

TIMESTAMPDIFF(YEAR, DateOfBirth, CURDATE()) AS Age

FROM Employees;

-- 12. Calculate the total salary (base + bonus) for each employee

SELECT E.FirstName, E.LastName, (S.BaseSalary + IFNULL(S.Bonus, 0)) AS TotalSalary

FROM Employees E

JOIN Salaries S ON E.EmployeeID = S.EmployeeID;

-- 13. Find all employees hired in 2015

SELECT FirstName, LastName, HireDate

FROM Employees

WHERE YEAR(HireDate) = 2015;

-- 14. Retrieve the names of projects ending before December 2023

SELECT ProjectName, EndDate

FROM Projects

WHERE EndDate < '2023-12-01';

-- 15. List employees with base salaries greater than $70,000

SELECT E.FirstName, E.LastName, S.BaseSalary

FROM Employees E

JOIN Salaries S ON E.EmployeeID = S.EmployeeID

WHERE S.BaseSalary > 70000;

-- 16. Count the number of projects handled by each employee

SELECT E.FirstName, E.LastName, COUNT(A.ProjectID) AS NumberOfProjects

FROM Employees E

JOIN Assignments A ON E.EmployeeID = A.EmployeeID

GROUP BY E.EmployeeID;

-- 17. List all departments located in "San Francisco"

SELECT DepartmentName

FROM Departments

WHERE Location = 'San Francisco';

-- 18. Display project names along with total hours worked on each

SELECT P.ProjectName, SUM(A.HoursWorked) AS TotalHoursWorked

FROM Assignments A

JOIN Projects P ON A.ProjectID = P.ProjectID

GROUP BY P.ProjectName;

-- 19. Find the highest bonus received by any employee

SELECT MAX(Bonus) AS HighestBonus

FROM Salaries;

-- 20. Identify projects that lasted for more than 12 months

SELECT ProjectName, DATEDIFF(EndDate, StartDate) AS DurationInDays

FROM Projects

WHERE DATEDIFF(EndDate, StartDate) > 365;

-- 21. Retrieve all projects starting in 2023

SELECT ProjectName, StartDate

FROM Projects

WHERE YEAR(StartDate) = 2023;

-- 22. Calculate the total hours worked by each employee across all projects

SELECT E.FirstName, E.LastName, SUM(A.HoursWorked) AS TotalHoursWorked

FROM Employees E

JOIN Assignments A ON E.EmployeeID = A.EmployeeID

GROUP BY E.EmployeeID;

-- 23. Find the department with the most employees

SELECT D.DepartmentName

FROM Departments D

JOIN Employees E ON D.DepartmentID = E.DepartmentID

GROUP BY D.DepartmentID

ORDER BY COUNT(E.EmployeeID) DESC

LIMIT 1;

-- 24. List employees who were born before 1985

SELECT FirstName, LastName, DateOfBirth

FROM Employees

WHERE DateOfBirth < '1985-01-01';