**SQL Assignment**

**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';

**Find employees hired after 2010.**

SELECT FirstName, LastName, HireDate

FROM Employees

WHERE HireDate > '2010-01-01';

List projects with a budget exceeding $80,000.

SELECT ProjectName, Budget

FROM Projects

WHERE Budget > 80000;

**Sort employees by their hire date in descending order.**

SELECT FirstName, LastName, HireDate

FROM Employees

ORDER BY HireDate DESC;

**Show projects sorted by their budget in ascending order.**

SELECT ProjectName, Budget

FROM Projects

ORDER BY Budget ASC;

**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;

**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;

**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;

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;

**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);

**Calculate the age of each employee.**

SELECT FirstName, LastName,

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

FROM Employees;

**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;

**Find all employees hired in 2015.**

SELECT FirstName, LastName, HireDate

FROM Employees

WHERE YEAR(HireDate) = 2015;

**Retrieve the names of projects ending before December 2023**.

SELECT ProjectName, EndDate

FROM Projects

WHERE EndDate < '2023-12-01';

**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;

**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;

**List all departments located in "San Francisco".**

SELECT DepartmentName

FROM Departments

WHERE Location = 'San Francisco';

**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;

**Find the highest bonus received by any employee.**

SELECT MAX(Bonus) AS HighestBonus

FROM Salaries;

**Identify projects that lasted for more than 12 months.**

SELECT ProjectName, DATEDIFF(EndDate, StartDate) AS DurationInDays

FROM Projects

WHERE DATEDIFF(EndDate, StartDate) > 365;

**Retrieve all projects starting in 2023.**

SELECT ProjectName, StartDate

FROM Projects

WHERE YEAR(StartDate) = 2023;

**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;

**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;

**List employees who were born before 1985.**

SELECT FirstName, LastName, DateOfBirth