CREATE DATABASE lab\_5;

--DROP DATABASE lab\_5;

USE lab\_5;

-- TASK 1

CREATE TABLE Client(

ClientID INT PRIMARY KEY IDENTITY(1,1),

ClientName VARCHAR(100) NOT NULL,

Address VARCHAR(200),

Email VARCHAR(30) UNIQUE,

Phone INT,

Business VARCHAR(100) NOT NULL,

);

CREATE TABLE Project(

ProjectID INT PRIMARY KEY IDENTITY(1,1),

Description VARCHAR(200) NOT NULL,

StartDate DATE,

PlannedEndDate DATE,

ActualEndDate DATE,

Budget INT,

ClientID INT,

CHECK (ActualEndDate > PlannedEndDate),

CHECK (Budget > 0),

FOREIGN KEY(ClientID) REFERENCES Client(ClientID)

);

CREATE TABLE Department(

DepartmentNo INT PRIMARY KEY IDENTITY(1,1),

DepartmentName VARCHAR(100) NOT NULL

);

CREATE TABLE Employee(

EmployeeNo INT PRIMARY KEY IDENTITY(1,1),

EmployeeName VARCHAR(100) NOT NULL,

Job VARCHAR(100),

Salary INT,

DepartmentNo INT,

CHECK (Salary > 1700),

FOREIGN KEY (DepartmentNo) REFERENCES Department(DepartmentNo)

);

CREATE TABLE EmployeeProjectTask(

ProjectID INT,

EmployeeNo INT,

StartDate DATE,

EndDate DATE,

Task VARCHAR(100),

Status VARCHAR(100),

FOREIGN KEY(ProjectID) REFERENCES Project(ProjectID),

FOREIGN KEY(EmployeeNo) REFERENCES Employee(EmployeeNo),

PRIMARY KEY(ProjectID,EmployeeNo)

);

INSERT INTO Client(ClientName,Address,Email,Phone,Business) VALUES

('John Doe', '123 Main Street, Cityville', 'johndoe@example.com', 555-1234, 'Manufacturer'),

('Jane Smith', '456 Elm Avenue, Townsville', 'janesmith@example.com', 555-5678, 'Reseller');

INSERT INTO Project(Description,StartDate,PlannedEndDate,ActualEndDate,Budget,ClientID) VALUES

('Accounting', '2023-01-01', '2023-03-31', '2023-04-10', 5000, 1),

('Payroll', '2023-02-15', '2023-04-30', '2023-05-15', 8000, 2);

INSERT INTO Department(DepartmentName) VALUES

('Accounting'),

('Sales');

INSERT INTO Employee(EmployeeName,Job,Salary,DepartmentNo) VALUES

('Michael Johnson', 'Sales Manager', 2500, 1),

('Emily Thompson', 'Software Engineer', 1900, 2);

INSERT INTO EmployeeProjectTask VALUES

(1, 1, '2023-01-15', '2023-02-28', 'Designing', 'In Progress'),

(2, 2, '2023-03-10', '2023-04-15', 'Coding', 'Complete');

-- TASK 2

SELECT employeeName

FROM employee

WHERE employeeName LIKE 'M%'

-- TASK 3

SELECT EmployeeNo,EmployeeName

FROM employee

WHERE LEN(employeeName) = (

SELECT MAX(LEN(employeeName))

FROM employee

);

-- TASK 4

SELECT d.DepartmentName,e.EmployeeName,e.Salary

FROM Employee e

INNER JOIN Department d

ON e.DepartmentNo = d.DepartmentNo

ORDER BY e.Salary DESC;

-- TASK 5

SELECT d.DepartmentNo, d.DepartmentName, COUNT(e.EmployeeNo) AS NumberOfEmployees

FROM Department d

LEFT JOIN Employee e

ON d.DepartmentNo = e.DepartmentNo

GROUP BY d.DepartmentNo, d.DepartmentName;

-- TASK 6

INSERT INTO Employee(EmployeeName,Job,Salary,DepartmentNo) VALUES

('Sarah Johnson', 'Marketing Specialist', 2200, 1),

('Robert Williams', 'Accountant', 1950, 2);

SELECT \* FROM Employee;

SELECT d.DepartmentNo, d.DepartmentName,SUM(e.Salary) AS SumSalary

FROM Department d

INNER JOIN Employee e

ON d.DepartmentNo = e.DepartmentNo

GROUP BY d.DepartmentNo, d.DepartmentName

HAVING SUM(e.Salary) = (

SELECT MAX(SumSalary)

FROM (

SELECT SUM(Salary) AS SumSalary

FROM Employee

GROUP BY DepartmentNo

) AS DepartmentSum

);