

# Assignment: SQL - Creating, Populating, and Altering Databases

## Objective:

This assignment is designed to help you understand the fundamentals of SQL by focusing on creating, populating, and altering databases. You will learn how to create tables, insert data, and modify the structure of an existing database.

**IMPORTANT: MAKE SURE YOU READ THE ENTIRE BRIEF BEFORE SOLVING.**

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## Instructions:

1. Write SQL queries for each of the tasks listed below and execute them on your database.

## 2. Submit:

Submit A zipped folder containing your SQL script file (.sql) on the submission tab on the portal.

### Part 1: Database and Table Creation

#### 1. Create a Database:

Create a database called CompanyDB.

#### 2. Create Tables:

Inside the CompanyDB database, create the following tables:

a) Employees

EmployeeID (Primary Key, Integer, Auto-increment)

FirstName (Varchar, up to 50 characters)

LastName (Varchar, up to 50 characters)

DateOfBirth (Date)

HireDate (Date)

Salary (Decimal, with 10 digits and 2 decimal places)

b) Departments

DepartmentID (Primary Key, Integer, Auto-increment)

DepartmentName (Varchar, up to 50

characters)

## c) Projects

ProjectID (Primary Key, Integer, Auto-increment)

ProjectName (Varchar, up to 50 characters)

StartDate (Date)

EndDate (Date)

## Part 2: Populating the Tables

Insert sample data into the tables:

1. Insert into Departments:

Add at least 3 departments (e.g., HR, IT,

Finance).

## 2. Insert into Employees:

Add at least 5 employees, each assigned to a department. Ensure their details are realistic (e.g., hire dates, salaries).

## 3. Insert into Projects:

Add at least 3 projects with realistic start and end dates.

# Part 3: Altering Tables

## 1. Add a Column:

Add a column named Email (Varchar, up to 100 characters) to the Employees table.

## 2. Modify a Column:

Change the data type of the  
DepartmentName column in the  
Departments table to allow up to 100  
characters.

### 3. Delete a Column:

Remove the EndDate column from the  
Projects table.

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Important:

### 1. Foreign Key Relationship:

Establish a foreign key relationship  
between:

Employees and Departments using the DepartmentID.

Projects and Employees using a column ManagerID in the Projects table.

## 2. Data Validation:

Add a constraint to ensure Salary in the Employees table cannot be less than 20,000.

Add a unique constraint to the Email column in the Employees table.

Evaluation Criteria:

Correctness of SQL queries (syntax and output).

Completion of all tasks.

Adherence to best practices (e.g., proper use of primary keys, data types, and constraints).



