SQL Model 1  
Class 2 homework  
  
Each category contains **10 assignments** covering:  
 ✅ **Creating SQL objects** ✅ **Different ways of data insertion** ✅ **Altering SQL objects** ✅ **Applying DROP, TRUNCATE, and DELETE** ✅ **Using SSMS graphical tools**

## **🟢 Easy-Level Tasks (10)**

1. **Define and explain** DDL and DML. Give two examples of each.
2. **Write a query** to create a table Employees with columns: EmpID (INT, PRIMARY KEY), Name (VARCHAR(50)), Salary (DECIMAL(10,2)).
3. **Insert three records** into the Employees table using the INSERT INTO statement.
4. **Write a query** to update the Salary of an employee where EmpID = 1.
5. **Delete a record** from the Employees table where EmpID = 2.
6. **Explain the difference** between DELETE, DROP, and TRUNCATE with examples.
7. **Modify the Name column** in the Employees table to VARCHAR(100).
8. **Use the ALTER TABLE statement** to add a new column Department (VARCHAR(50)) to the Employees table.
9. **Use SSMS graphical tools** to create a database named CompanyDB. Take a screenshot.
10. **Describe the purpose** of the TRUNCATE TABLE command.

## **🟠 Medium-Level Tasks (10)**

1. **Create a table** Departments with a PRIMARY KEY on DeptID and a FOREIGN KEY referencing Employees.EmpID.
2. **Insert five records** into the Departments table using INSERT INTO SELECT from another table.
3. **Write a query** that updates the Department of all employees where Salary > 5000 to 'Management'.
4. **Write a query** to remove all records from the Employees table without removing its structure.
5. **Explain the difference** between VARCHAR and NVARCHAR when creating tables.
6. **Modify an existing column** Salary to change its data type to FLOAT.
7. **Drop the column Department** from the Employees table using ALTER TABLE.
8. **Use SSMS graphical tools** to modify the Employees table by adding a new column JoinDate (DATE). Take a screenshot.
9. **Create a temporary table** and insert two records into it.
10. **Write a query** to remove the Departments table completely from the database.

## **🔴 Hard-Level Tasks (10)**

1. **Write a script** that creates a Customers table with a CHECK constraint ensuring Age > 18.
2. **Write a query** to delete all employees who have not received a salary increase in the last two years.
3. **Create a stored procedure** that inserts a new employee record into the Employees table.
4. **Write a query** that creates a backup table Employees\_Backup with the same structure as Employees.
5. **Write a query** to insert multiple rows using MERGE INTO from another table.
6. **Drop the CompanyDB database** and recreate it using a script.
7. **Use SSMS graphical tools** to rename the Employees table to StaffMembers. Take a screenshot.
8. **Explain the difference** between CASCADE DELETE and CASCADE UPDATE with an example.
9. **Write a query** to reset the IDENTITY column seed of Employees after deleting all records.
10. **Write a query** that creates a table with both PRIMARY KEY and UNIQUE constraints on different columns.

Try to solve as much as possible. If you face a new thing, try googling, researching