**-- Create Database**

CREATE DATABASE test;

GO

USE test;

GO

**-- Create Department Table**

CREATE TABLE Department (

DeptID INT PRIMARY KEY,

DeptName VARCHAR(50),

Loc VARCHAR(50) DEFAULT 'Chicago'

);

**-- Show structure of Department (2 ways)**

EXEC sp\_help 'Department';

SELECT COLUMN\_NAME, DATA\_TYPE, CHARACTER\_MAXIMUM\_LENGTH, IS\_NULLABLE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Department';

**-- Create Employees Table**

CREATE TABLE Employees (

EmpID INT PRIMARY KEY,

EmpName VARCHAR(50) NOT NULL,

Gender CHAR(1),

Salary DECIMAL(10,2) CHECK (Salary > 0),

DeptID INT,

emailid VARCHAR(50) UNIQUE,

FOREIGN KEY (DeptID) REFERENCES Department(DeptID)

);

**-- Show structure of Employees (2 ways)**

EXEC sp\_help 'Employees';

SELECT COLUMN\_NAME, DATA\_TYPE, CHARACTER\_MAXIMUM\_LENGTH, IS\_NULLABLE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Employees';

**-- Insert into Department**

INSERT INTO Department VALUES

(1, 'IT', 'New York'),

(2, 'HR', 'Chicago'),

(3, 'Finance', 'San Francisco');

**-- Insert with DEFAULT value (Loc will become 'Chicago')**

INSERT INTO Department (DeptID, DeptName) VALUES

(4, 'Sales');

SELECT \* FROM Department;

**-- Insert Employees**

INSERT INTO Employees VALUES

(101, 'Alice', 'F', 75000, 1,'alice@coforge.com'),

(102, 'Bob', 'M', 60000, 2, 'bob@coforge.com'),

(103, 'Charlie', 'M', 85000, 1,'charlie@coforge.com'),

(104, 'Diana', 'F', 72000, 3,'diana@coforge.com');

SELECT \* FROM Employees;

**-- Try inserting invalid salary (will fail because of CHECK constraint)**

-- INSERT INTO Employees VALUES (105, 'Aly', 'F', -80000, 1,'aly@coforge.com');

------------------------------------------------------

**-- Rename Table**

EXEC sp\_rename 'Employees', 'Attendees';

EXEC sp\_rename 'Attendees', 'Employees';

------------------------------------------------------

**-- ALTER TABLE examples**

-- Add a new column

ALTER TABLE Employees ADD HireDate DATE DEFAULT GETDATE();

**-- Show structure (2 ways)**

EXEC sp\_help 'Employees';

SELECT COLUMN\_NAME, DATA\_TYPE, CHARACTER\_MAXIMUM\_LENGTH, IS\_NULLABLE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Employees';

**-- Drop a column**

ALTER TABLE Employees DROP COLUMN Gender;

**-- Show structure**

EXEC sp\_help 'Employees';

SELECT COLUMN\_NAME, DATA\_TYPE, CHARACTER\_MAXIMUM\_LENGTH, IS\_NULLABLE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Employees';

**-- Modify datatype and size**

ALTER TABLE Employees ALTER COLUMN EmpName VARCHAR(100);

**-- Show structure**

EXEC sp\_help 'Employees';

SELECT COLUMN\_NAME, DATA\_TYPE, CHARACTER\_MAXIMUM\_LENGTH, IS\_NULLABLE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Employees';

**-- Add a new constraint**

ALTER TABLE Employees ADD CONSTRAINT chk\_salary CHECK (Salary > 3000);

**-- Show structure**

EXEC sp\_help 'Employees';

SELECT COLUMN\_NAME, DATA\_TYPE, CHARACTER\_MAXIMUM\_LENGTH, IS\_NULLABLE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Employees';

------------------------------------------------------

**-- UPDATE with condition**

UPDATE Employees

SET Salary = Salary + 5000

WHERE DeptID = 1; -- Increase salary for IT employees

SELECT \* FROM Employees;

------------------------------------------------------

**-- DELETE with condition**

DELETE FROM Employees

WHERE EmpID = 104; -- Remove Diana

SELECT \* FROM Employees;

------------------------------------------------------

**-- DROP Tables**

DROP TABLE Employees;

DROP TABLE Department;