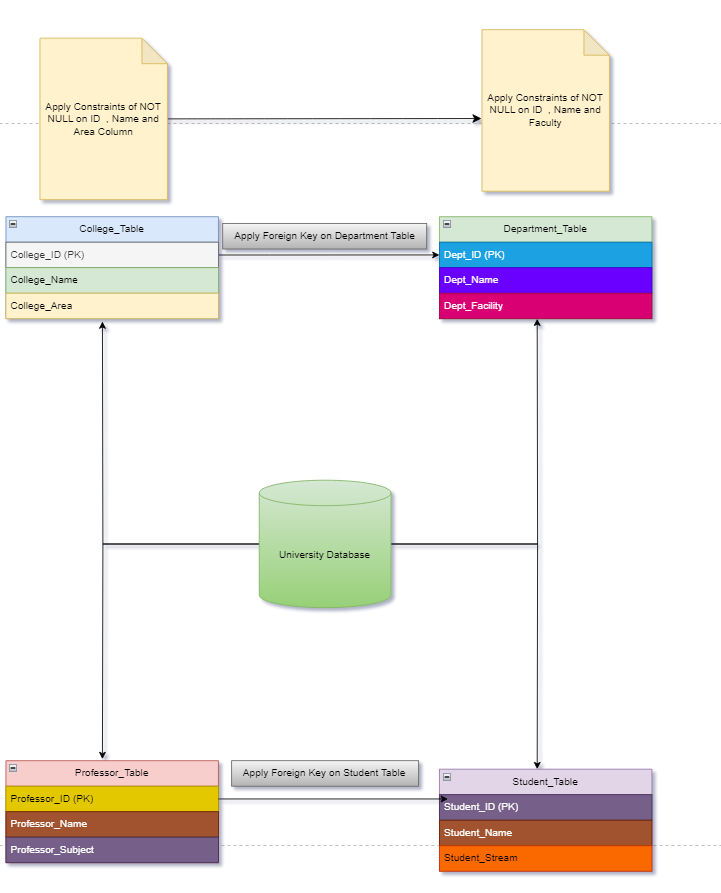


**Capstone Project**

**(University DataBase Management System)**



University Database Management System is one of the Fundamental and Intermediate level SQL project

Here in this Project you have to create an efficient DBMS for the any University .

Inorder to create this system Perform the following task:-

**Task 1:-**

1.Create University Database give any University name you want

Answer- CREATE DATABASE University

2. Under this University Create four tables and each table should have following three Column named as:-

A. College\_Table

College\_ID(PK)

College\_Name

College\_Area

B. Department\_Table

Dept\_ID(PK)

Dept\_Name

Dept\_Facility

C. Professor\_Table

Professor\_ID(PK)

Professor\_Name

Professor\_Subject

D. Student\_Table

Student\_ID(PK)

Student\_Name

Student\_Stream

Answer- CREATE TABLE College\_Table (

College\_ID INT PRIMARY KEY,

College\_Name VARCHAR(255),

College\_Area VARCHAR(255)

)

CREATE TABLE Department\_Table (

Dept\_ID INT PRIMARY KEY,

Dept\_Name VARCHAR(255),

Dept\_Facility VARCHAR(255))

-- Task 2: Create Professor\_Table

CREATE TABLE Professor\_Table (

Professor\_ID INT PRIMARY KEY,

Professor\_Name VARCHAR(255),

Professor\_Subject VARCHAR(255))

-- Task 2: Create Student\_Table

CREATE TABLE Student\_Table (

Student\_ID INT PRIMARY KEY,

Student\_Name VARCHAR(255),

Student\_Stream VARCHAR(255))

3. Apply foreign key on Department key from College\_table

Answer- ALTER TABLE Department\_Table

ADD CONSTRAINT College\_ID

FOREIGN KEY (College\_ID)

REFERENCES College\_Table (College\_Id)

4. Apply foreign Key on Student\_Table from Professor\_Table

Answer-

ALTER TABLE Student\_Table

ADD CONSTRAINT Professor\_ID

FOREIGN KEY (Professor\_ID)

REFERENCES Professor\_Table(Professor\_ID)

5. Insert atleast 10 Records in each table

Answer- - Task 5: Insert records into College\_Table

INSERT INTO College\_Table(College\_Name, College\_Area) VALUES

('Engineering College', 'Science and Technology Park'),

('Arts College', 'Downtown Area'),

('Business College', 'Financial District'),

('Medical College', 'Hospital Campus')

-- Task 5: Insert records into Department\_Table

INSERT INTO Department\_Table (Dept\_Name, Dept\_Facility, College\_ID) VALUES

('Computer Science', 'Computer Lab', 1),

('Mechanical Engineering', 'Engineering Lab', 1),

('English Literature', 'Library', 2),

('Economics', 'Research Center', 2),

('Finance', 'Trading Floor', 3),

('Marketing', 'Marketing Lab', 3),

('Internal Medicine', 'Hospital Ward', 4),

('Pediatrics', 'Pediatric Ward', 4)

-- Task 5: Insert records into Professor\_Table

INSERT INTO Professor\_Table (Professor\_Name, Professor\_Subject, Dept\_ID) VALUES

('Dr. Smith', 'Computer Science', 1),

('Prof. Johnson', 'Mechanical Engineering', 2),

('Dr. Adams', 'English Literature', 3),

('Prof. Brown', 'Economics', 4),

('Dr. Davis', 'Finance', 5),

('Prof. Wilson', 'Marketing', 6),

('Dr. Miller', 'Internal Medicine', 7),

('Prof. Taylor', 'Pediatrics', 8)

-- Task 5: Insert records into Student\_Table

INSERT INTO Student (Student\_Name, Student\_Stream, Professor\_ID) VALUES

('John Doe', 'Computer Science', 1),

('Jane Smith', 'Mechanical Engineering', 2),

('David Lee', 'English Literature', 3),

('Emily Johnson', 'Economics', 4),

('Michael Brown', 'Finance', 5),

('Sophia Davis', 'Marketing', 6),

('Emma Wilson', 'Internal Medicine', 7),

('William Taylor', 'Pediatrics', 8)

**Task 2:-**

1. Give the information of College\_ID and College\_name from College\_Table

Answer- SELECT College\_ID, College\_Name

FROM College\_Table

1. Show Top 5 rows from Student table.

Answer- SELECT TOP 5 \*

FROM Student\_Table

1. What is the name of professor whose ID is 5

Answer- SELECT Professor\_Name

FROM Professor\_Table

WHERE Professor\_ID = 5

1. Convert the name of the Professor into Upper case

Answer SELECT UPPER(Professor\_Name) AS Professor\_Name\_Upper

FROM Professor\_Table

1. Show me the names of those students whose name is start with a

Answer- SELECT Student\_Name

FROM Student\_Table

WHERE Student\_Name LIKE 'a%'

1. Give the name of those colleges whose end with a

Answer- SELECT College\_Name

FROM College\_Table

WHERE College\_Name LIKE '%a'

1. Add one Salary Column in Professor\_Table

Answer- ALTER TABLE Professor\_Table

ADD Salary DECIMAL(10,2)

1. Add one Contact Column in Student\_table

Answer- ALTER TABLE Student\_Table

ADD Contact VARCHAR(Max)

1. Find the total Salary of Professor

Answer- SELECT SUM(Salary) AS Total\_Salary

FROM Professor\_Table

1. Change datatype of any one column of any one Table

Answer- ALTER TABLE Professor\_Table

ALTER COLUMN Salary DECIMAL(10, 2)

**Task 3:-**

1. Show first 5 records from Students table and Professor table Combine

Amswer- (

SELECT Student\_ID, Student\_Name, Student\_Stream, NULL AS Professor\_ID, NULL AS Professor\_Name, NULL AS Professor\_Subject, NULL AS Salary, NULL AS Contact

FROM Student\_Table

LIMIT 5

)

UNION ALL

(

SELECT NULL AS Student\_ID, NULL AS Student\_Name, NULL AS Student\_Stream, Professor\_ID, Professor\_Name, Professor\_Subject, Salary, NULL AS Contact

FROM Professor\_Table

LIMIT 5

)

1. Apply Inner join on all 4 tables together

Answer-

SELECT \*

FROM College\_Table AS

INNER JOIN Department\_Table AS Department\_table ON College\_Table.College\_ID = Department\_table.College\_ID

INNER JOIN Professor\_Table AS Professor\_Table ON Department\_table.Dept\_ID = Professor\_Table.Dept\_ID

INNER JOIN Student\_Table AS Student\_Table ON Professor\_Table.Professor\_ID = Student\_Table.Professor\_ID

1. Show Some null values from Department table and Professor table.

Answer- -- Show null values from Department table

SELECT \*

FROM College\_Table AS

LEFT JOIN Department\_Table AS Department\_Table ON College\_Table.College\_ID = Department\_Table.College\_ID

WHERE Department\_Table.Dept\_ID IS NULL

-- Show null values from Professor table

SELECT \*

FROM Department\_Table AS

LEFT JOIN Professor\_Table AS Professor\_Table ON Department\_Table.Dept\_ID = Professor\_Table.Dept\_ID

WHERE Professor\_Table.Professor\_ID IS NULL

1. Create a View from College Table and give those records whose college name starts with C

Answer- CREATE VIEW College\_StartsWith\_College\_View AS

SELECT \*

FROM College\_Table

WHERE College\_Name LIKE 'C%'

1. Create Stored Procedure of Professor table whatever customer ID will be given by user it should show whole records of it.

Answer CREATE PROCEDURE GetProfessorByID

@ProfessorID INT

AS

BEGIN

SELECT \*

FROM Professor\_Table

WHERE Professor\_ID = @ProfessorID

END

1. Rename the College\_Table to College\_Tables\_Data .

Answer- EXEC sp\_rename 'College\_Table', 'College\_Tables\_Data'