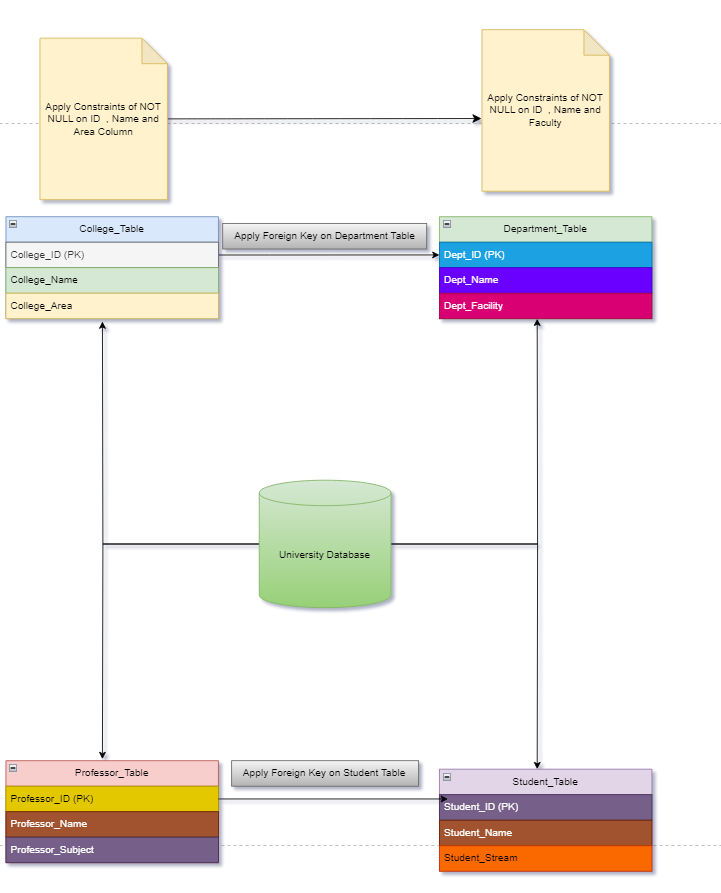


**Capstone Project**

**(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

CREATE DATABASE University\_DB;

USE University\_DB;

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

CREATE TABLE College\_Table (

College\_ID INT PRIMARY KEY,

College\_Name VARCHAR(100) NOT NULL,

College\_Area VARCHAR(100) NOT NULL

);

B. Department\_Table

Dept\_ID(PK)

Dept\_Name

Dept\_Facility

CREATE TABLE Department\_Table (

Dept\_ID INT PRIMARY KEY,

Dept\_Name VARCHAR(100) NOT NULL,

Dept\_Facility VARCHAR(100) NOT NULL,

College\_ID INT

);

C. Professor\_Table

Professor\_ID(PK)

Professor\_Name

Professor\_Subject

CREATE TABLE Professor\_Table (

Professor\_ID INT PRIMARY KEY,

Professor\_Name VARCHAR(100) NOT NULL,

Professor\_Subject VARCHAR(100) NOT NULL

);

D. Student\_Table

Student\_ID(PK)

Student\_Name

Student\_Stream

CREATE TABLE Student\_Table (

Student\_ID INT PRIMARY KEY,

Student\_Name VARCHAR(100) NOT NULL,

Student\_Stream VARCHAR(100) NOT NULL,

Professor\_ID INT

);

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

ALTER TABLE Department\_Table ADD CONSTRAINT FK\_College\_Department FOREIGN KEY (College\_ID) REFERENCES College\_Table(College\_ID)

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

ALTER TABLE Student\_Table ADD CONSTRAINT FK\_Professor\_Student FOREIGN KEY (Professor\_ID) REFERENCES Professor\_Table(Professor\_ID)

5. Insert atleast 10 Records in each table

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

(1, 'Engineering College', 'North Campus'),

(2, 'Arts College', 'South Campus'),

(3, 'Science College', 'West Campus'),

(4, 'Management College', 'East Campus'),

(5, 'Law College', 'Central Campus'),

(6, 'Medical College', 'North East Campus'),

(7, 'Architecture College', 'South East Campus'),

(8, 'Design College', 'Central West Campus'),

(9, 'Agriculture College', 'South West Campus'),

(10, 'Pharmacy College', 'East West Campus');

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

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

(2, 'Mechanical Engineering', 'Workshop Facility', 1),

(3, 'Physics', 'Research Labs', 3),

(4, 'Chemistry', 'Research Labs', 3),

(5, 'Business Administration', 'Conference Rooms', 4),

(6, 'Economics', 'Library Access', 2),

(7, 'Biotechnology', 'Advanced Labs', 6),

(8, 'Design', 'Studios', 8),

(9, 'Law', 'Court Rooms', 5),

(10, 'Pharmacy', 'Medicine Labs', 10);

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

(1, 'Dr. Smith', 'Artificial Intelligence'),

(2, 'Dr. Taylor', 'Thermodynamics'),

(3, 'Dr. White', 'Organic Chemistry'),

(4, 'Dr. Green', 'Quantum Physics'),

(5, 'Dr. Brown', 'Microeconomics'),

(6, 'Dr. Black', 'Civil Law'),

(7, 'Dr. Adams', 'Pharmacology'),

(8, 'Dr. Lee', 'Interior Design'),

(9, 'Dr. Allen', 'Agronomy'),

(10, 'Dr. Harris', 'Data Structures');

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

(1, 'Alice', 'Computer Science', 1),

(2, 'Bob', 'Mechanical Engineering', 2),

(3, 'Charlie', 'Organic Chemistry', 3),

(4, 'David', 'Quantum Physics', 4),

(5, 'Eve', 'Microeconomics', 5),

(6, 'Frank', 'Civil Law', 6),

(7, 'Grace', 'Pharmacology', 7),

(8, 'Hank', 'Interior Design', 8),

(9, 'Ivy', 'Agronomy', 9),

(10, 'Jack', 'Data Structures', 10);

**Task 2:-**

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

SELECT College\_ID, College\_Name

FROM College\_Table;

1. Show Top 5 rows from Student table.

SELECT \*

FROM Student\_Table

LIMIT 5;

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

SELECT Professor\_Name

FROM Professor\_Table

WHERE Professor\_ID = 5;

1. Convert the name of the Professor into Upper case

SELECT UPPER(Professor\_Name) AS Uppercase\_Professor\_Name

FROM Professor\_Table;

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

SELECT Student\_Name

FROM Student\_Table

WHERE Student\_Name LIKE 'A%';

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

SELECT College\_Name

FROM College\_Table

WHERE College\_Name LIKE '%a';

1. Add one Salary Column in Professor\_Table

ALTER TABLE Professor\_Table

ADD Salary DECIMAL(10, 2);

1. Add one Contact Column in Student\_table

ALTER TABLE Student\_Table

ADD Contact VARCHAR(15);

1. Find the total Salary of Professor

SELECT SUM(Salary) AS Total\_Salary

FROM Professor\_Table;

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

ALTER TABLE College\_Table

MODIFY College\_Area VARCHAR(50);

**Task 3:-**

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

SELECT Student\_ID AS ID, Student\_Name AS Name, Student\_Stream AS Stream\_Subject

FROM Student\_Table

LIMIT 5

UNION ALL

SELECT Professor\_ID AS ID, Professor\_Name AS Name, Professor\_Subject AS Stream\_Subject

FROM Professor\_Table

LIMIT 5;

1. Apply Inner join on all 4 tables together

SELECT

C.College\_ID, C.College\_Name, C.College\_Area,

D.Dept\_ID, D.Dept\_Name, D.Dept\_Facility,

P.Professor\_ID, P.Professor\_Name, P.Professor\_Subject,

S.Student\_ID, S.Student\_Name, S.Student\_Stream

FROM College\_Table C

INNER JOIN Department\_Table D ON C.College\_ID = D.Dept\_ID

INNER JOIN Professor\_Table P ON D.Dept\_ID = P.Professor\_ID

INNER JOIN Student\_Table S ON P.Professor\_ID = S.Student\_ID;

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

SELECT \*

FROM Department\_Table

WHERE Dept\_Name IS NULL OR Dept\_Facility IS NULL;

SELECT \*

FROM Professor\_Table

WHERE Professor\_Name IS NULL OR Professor\_Subject IS NULL;

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

CREATE VIEW College\_View AS

SELECT \*

FROM College\_Table

WHERE College\_Name LIKE 'C%';

SELECT \* FROM College\_View;

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

DELIMITER //

CREATE PROCEDURE GetProfessorDetails(IN ProfessorID INT)

BEGIN

SELECT \*

FROM Professor\_Table

WHERE Professor\_ID = ProfessorID;

END //

DELIMITER ;

CALL GetProfessorDetails(5);

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

RENAME TABLE College\_Table TO College\_Tables\_Data;