ASSIGNMENT – 1

STUDENT INFORMATION SYSTEM

J701-Deva R

Task 1. Database Design:

1. Create the database named "SISDB"

   CREATE DATABASE SISDB;

   USE SISDB;

2. Define the schema for the Students, Courses, Enrollments, Teacher, and Payments tables based on the provided schema. Write SQL scripts to create the mentioned tables with appropriate data types, constraints, and relationships.
   a. Students
   b. Courses
   c. Enrollments
   d. Teacher
   e. Payments

```
CREATE TABLE Students (
    -> student_id INT  PRIMARY KEY AUTO_INCREMENT,
    -> first_name VARCHAR(50) NOT NULL,
    -> last_name VARCHAR(50) NOT NULL,
    -> date_of_birth DATE,
    -> email VARCHAR(100) UNIQUE NOT NULL,
    -> phone_number VARCHAR(15) UNIQUE
    -> );
```

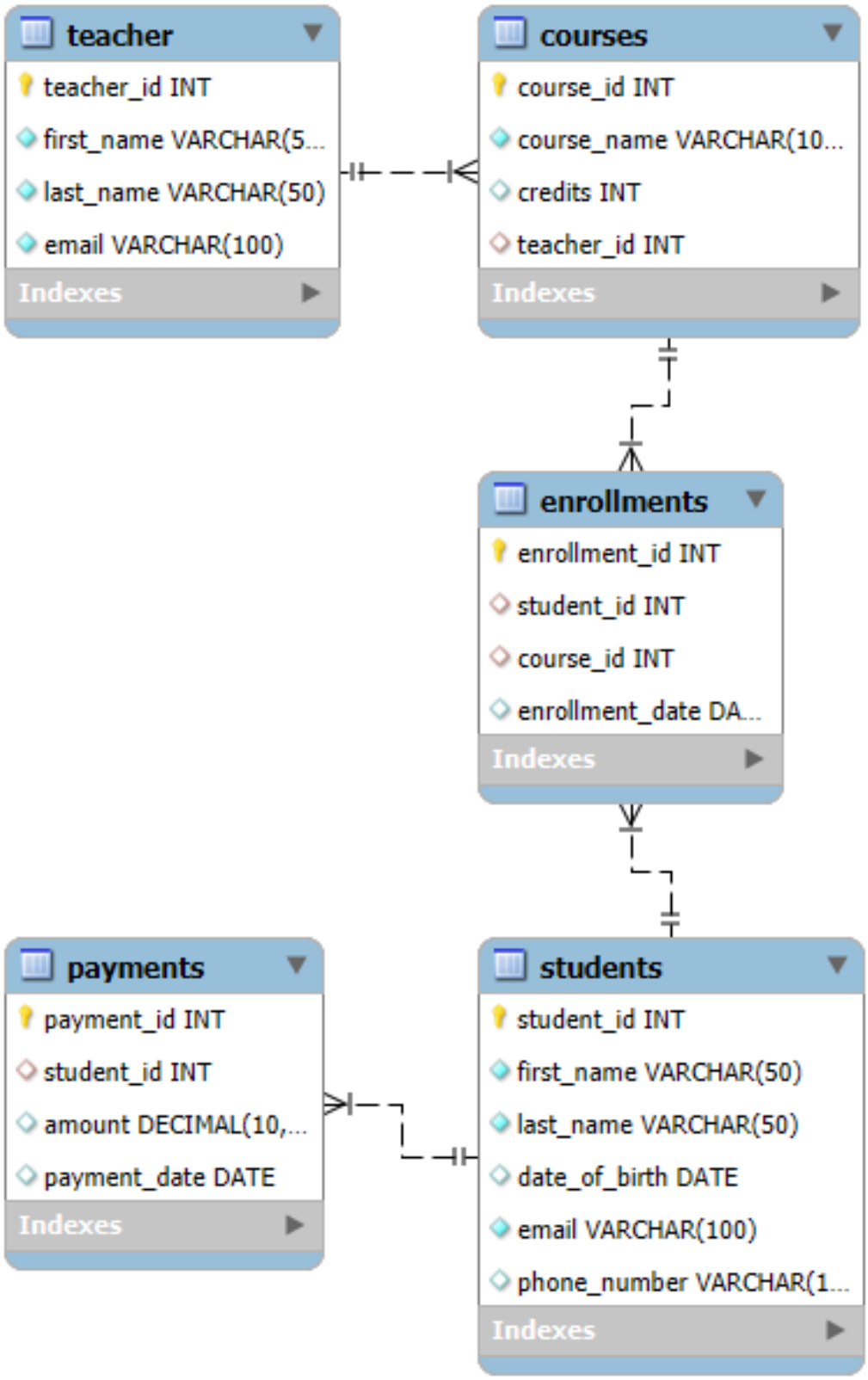
```
CREATE TABLE Teacher (
    -> teacher_id INT PRIMARY KEY AUTO_INCREMENT ,
    -> first_name VARCHAR(50) NOT NULL,
    -> last_name VARCHAR(50) NOT NULL,
    -> email VARCHAR(100) UNIQUE NOT NULL
    -> );
```

```
CREATE TABLE Courses (
    ->    course_id INT PRIMARY KEY AUTO_INCREMENT ,
    ->    course_name VARCHAR(100) NOT NULL,
    ->    credits INT CHECK (credits > 0),
    ->    teacher_id INT,
    ->    FOREIGN KEY (teacher_id) REFERENCES Teacher(teacher_id) ON DELETE CASCADE);

 CREATE TABLE Enrollments (
    ->    enrollment_id INT PRIMARY KEY AUTO_INCREMENT ,
    ->    student_id INT,
    ->    course_id INT,
    ->    enrollment_date DATE DEFAULT (CURRENT_DATE),
    ->    FOREIGN KEY (student_id) REFERENCES Students(student_id) ON DELETE CASCADE,
    ->    FOREIGN KEY (course_id) REFERENCES Courses(course_id) ON DELETE CASCADE
    -> );

CREATE TABLE Payments (
    ->    payment_id INT PRIMARY KEY AUTO_INCREMENT ,
    ->    student_id INT,
    ->    amount DECIMAL(10,2) CHECK (amount > 0),
    ->    payment_date DATE DEFAULT (CURRENT_DATE),
    ->    FOREIGN KEY (student_id) REFERENCES Students(student_id) ON DELETE CASCADE
    -> );
```

3. Create an ERD (Entity Relationship Diagram) for the database



5. Insert at least 10 sample records into each of the following tables.
    i. Students
    ii. Courses
    iii. Enrollments
    iv. Teacher
    v. Payments

INSERT INTO Students (first_name, last_name,date_of_birth, email, phone_number) VALUES

-> ('Deva', 'Ramesh', '2003-09-29', 'deva@gmail.com', '1234567890'),

-> ('Deepak', 'Raj', '2003-09-19', 'deepak@gmail.com', '1234567891'),

-> ('Sri', 'Ganesh', '2004-09-30', 'sri@gmail.com', '1234567892'),

-> ('Deva', 'Balaji', '2003-06-06', 'pavi@gmail.com', '1234567893'),

-> ('Pavithra', 'Balaji', '2003-09-29', 'pavipb@gmail.com', '1234567894'),

-> ('Madhu', 'Deva', '2003-05-26', 'madhu@gmail.com', '1234567895'),

-> ('Shruthi', 'Shanmugam', '2002-09-29', 'shruthi@gmail.com', '1234567896'),

-> ('Karthick', 'Raj', '2000-02-21', 'karthick@gmail.com', '1234567897'),

-> ('Ramesh', 'Ramesh', '2002-08-12', 'ramesh@gmail.com', '1234567898'),

-> ('Madhavan', 'Magesh', '2003-05-06', 'madhavan@gmail.com', '1234567899');

INSERT INTO Teacher (first_name, last_name, email) VALUES

-> ('Dr. Nithya', 'Brown', 'nithya.brown@gmail.com'),

-> ('Dr. Deva', 'Raj', 'devaraj@gmail.com'),

-> ('Dr. Lavanya', 'James', 'lavanya@gmail.com'),

-> ('Dr. Chandru', 'Suresh', 'chandru@gmail.com'),

-> ('Dr. Sariga', 'Deva', 'sariga@gmail.com'),

-> ('Dr. Madhu', 'Bala', 'madhubala@gmail.com'),

-> ('Dr. Jonah', 'Jonie', 'jona@gmail.com'),

-> ('Dr. Abi', 'Abi', 'abi@gmail.com'),

-> ('Dr. Nithin', 'Khan', 'nithin@gmail.com'),

-> ('Dr. Swetha', 'Suresh', 'swetha@gmail.com');

```
INSERT INTO Courses (course_name, credits, teacher_id) VALUES
    -> ('Mathematics', 3, 1),
    -> ('Physics', 4, 2),
    -> ('Chemistry', 3, 3),
    -> ('Biology', 4, 4),
    -> ('Computer Science', 3, 5),
    -> ('History', 2, 6),
    -> ('Economics', 3, 7),
    -> ('English Literature', 3, 8),
    -> ('Psychology', 3, 9),
    -> ('Business Management', 4, 10);

INSERT INTO Enrollments (student_id, course_id, enrollment_date) VALUES
    -> (1, 1, '2024-01-15'),
    -> (2, 2, '2024-01-16'),
    -> (3, 3, '2024-01-17'),
    -> (4, 4, '2024-01-18'),
    -> (5, 5, '2024-01-19'),
    -> (6, 6, '2024-01-20'),
    -> (7, 7, '2024-01-21'),
    -> (8, 8, '2024-01-22'),
    -> (9, 9, '2024-01-23'),
    -> (10, 10, '2024-01-24');

INSERT INTO Payments (student_id, amount, payment_date) VALUES
    -> (1, 500.00, '2024-02-01'),
    -> (2, 450.00, '2024-02-02'),
    -> (3, 550.00, '2024-02-03'),
    -> (4, 600.00, '2024-02-04'),
```

-> (5, 400.00, '2024-02-05'),

-> (6, 700.00, '2024-02-06'),

-> (7, 500.00, '2024-02-07'),

-> (8, 650.00, '2024-02-08'),

-> (9, 750.00, '2024-02-09'),

-> (10, 800.00, '2024-02-10');

Output:

```
mysql> select * from students;
+------------+------------+-----------+---------------+--------------------+--------------+
| student_id | first_name | last_name | date_of_birth | email              | phone_number |
+------------+------------+-----------+---------------+--------------------+--------------+
|          1 | Deva       | Ramesh    | 2003-09-29    | deva@gmail.com     | 1234567890   |
|          2 | Deepak     | Raj       | 2003-09-19    | deepak@gmail.com   | 1234567891   |
|          3 | Sri        | Ganesh    | 2004-09-30    | sri@gmail.com      | 1234567892   |
|          4 | Deva       | Balaji    | 2003-06-06    | pavi@gmail.com     | 1234567893   |
|          5 | Pavithra   | Balaji    | 2003-09-29    | pavipb@gmail.com   | 1234567894   |
|          6 | Madhu      | Deva      | 2003-05-26    | madhu@gmail.com    | 1234567895   |
|          7 | Shruthi    | Shanmugam | 2002-09-29    | shruthi@gmail.com  | 1234567896   |
|          8 | Karthick   | Raj       | 2000-02-21    | karthick@gmail.com | 1234567897   |
|          9 | Ramesh     | Ramesh    | 2002-08-12    | ramesh@gmail.com   | 1234567898   |
|         10 | Madhavan   | Magesh    | 2003-05-06    | madhavan@gmail.com | 1234567899   |
+------------+------------+-----------+---------------+--------------------+--------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from teacher;
+------------+-------------+-----------+-----------------------+
| teacher_id | first_name  | last_name | email                 |
+------------+-------------+-----------+-----------------------+
|          1 | Dr. Nithya  | Brown     | nithya.brown@gmail.com |
|          2 | Dr. Deva    | Raj       | devaraj@gmail.com      |
|          3 | Dr. Lavanya | James     | lavanya@gmail.com      |
|          4 | Dr. Chandru | Suresh    | chandru@gmail.com      |
|          5 | Dr. Sariga  | Deva      | sariga@gmail.com       |
|          6 | Dr. Madhu   | Bala      | madhubala@gmail.com    |
|          7 | Dr. Jonah   | Jonie     | jona@gmail.com         |
|          8 | Dr. Abi     | Abi       | abi@gmail.com          |
|          9 | Dr. Nithin  | Khan      | nithin@gmail.com       |
|         10 | Dr. Swetha  | Suresh    | swetha@gmail.com       |
+------------+-------------+-----------+-----------------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from courses;
+-----------+--------------------+---------+------------+
| course_id | course_name        | credits | teacher_id |
+-----------+--------------------+---------+------------+
|         1 | Mathematics        |       3 |          1 |
|         2 | Physics            |       4 |          2 |
|         3 | Chemistry          |       3 |          3 |
|         4 | Biology            |       4 |          4 |
|         5 | Computer Science   |       3 |          5 |
|         6 | History            |       2 |          6 |
|         7 | Economics          |       3 |          7 |
|         8 | English Literature |       3 |          8 |
|         9 | Psychology         |       3 |          9 |
|        10 | Business Management |       4 |         10 |
+-----------+--------------------+---------+------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from enrollments;
+---------------+------------+-----------+-----------------+
| enrollment_id | student_id | course_id | enrollment_date |
+---------------+------------+-----------+-----------------+
|             1 |          1 |         1 | 2024-01-15      |
|             2 |          2 |         2 | 2024-01-16      |
|             3 |          3 |         3 | 2024-01-17      |
|             4 |          4 |         4 | 2024-01-18      |
|             5 |          5 |         5 | 2024-01-19      |
|             6 |          6 |         6 | 2024-01-20      |
|             7 |          7 |         7 | 2024-01-21      |
|             8 |          8 |         8 | 2024-01-22      |
|             9 |          9 |         9 | 2024-01-23      |
|            10 |         10 |        10 | 2024-01-24      |
+---------------+------------+-----------+-----------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from payments;
+------------+------------+--------+--------------+
| payment_id | student_id | amount | payment_date |
+------------+------------+--------+--------------+
|          1 |          1 | 500.00 | 2024-02-01   |
|          2 |          2 | 450.00 | 2024-02-02   |
|          3 |          3 | 550.00 | 2024-02-03   |
|          4 |          4 | 600.00 | 2024-02-04   |
|          5 |          5 | 400.00 | 2024-02-05   |
|          6 |          6 | 700.00 | 2024-02-06   |
|          7 |          7 | 500.00 | 2024-02-07   |
|          8 |          8 | 650.00 | 2024-02-08   |
|          9 |          9 | 750.00 | 2024-02-09   |
|         10 |         10 | 800.00 | 2024-02-10   |
+------------+------------+--------+--------------+
10 rows in set (0.00 sec)
```