1. Create the database named "SISDB"

```
mysql> CREATE DATABASE SISDB;
Query OK, 1 row affected (0.02 sec)
```

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

```
mysql> CREATE TABLE Students(
    -> student_id int PRIMARY KEY,
    -> first_name text ,
    -> last_name text,
    -> date_of_birth date,
    -> email text,
    -> phone_number bigint);
Query OK, 0 rows affected (0.04 sec)

mysql> desc Students;
+---------------+--------+------+-----+---------+-------+
| Field         | Type   | Null | Key | Default | Extra |
+---------------+--------+------+-----+---------+-------+
| student_id    | int    | NO   | PRI | NULL    |       |
| first_name    | text   | YES  |     | NULL    |       |
| last_name     | text   | YES  |     | NULL    |       |
| date_of_birth | date   | YES  |     | NULL    |       |
| email         | text   | YES  |     | NULL    |       |
| phone_number  | bigint | YES  |     | NULL    |       |
+---------------+--------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

b. Courses

```
mysql> CREATE TABLE Teacher(
    -> teacher_id int PRIMARY KEY,
    -> first_name text,
    -> last_name text,
    -> email text);
Query OK, 0 rows affected (0.03 sec)

mysql> desc Teacher;
+------------+------+------+-----+---------+-------+
| Field      | Type | Null | Key | Default | Extra |
+------------+------+------+-----+---------+-------+
| teacher_id | int  | NO   | PRI | NULL    |       |
| first_name | text | YES  |     | NULL    |       |
| last_name  | text | YES  |     | NULL    |       |
| email      | text | YES  |     | NULL    |       |
+------------+------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

c. Enrollments

```
mysql> CREATE TABLE Enrollments(
    -> enrollment_id int PRIMARY KEY,
    -> student_id int,
    -> FOREIGN KEY(student_id) REFERENCES Students(student_id),
    -> course_id int,
    -> FOREIGN KEY(course_id) REFERENCES Courses(course_id),
    -> enrollment_date date)
    -> ;
Query OK, 0 rows affected (0.05 sec)

mysql> desc Enrollments;
+-----------------+-------+-------+------+----------+--------+
| Field           | Type  | Null  | Key  | Default  | Extra  |
+-----------------+-------+-------+------+----------+--------+
| enrollment_id   | int   | NO    | PRI  | NULL     |        |
| student_id      | int   | YES   | MUL  | NULL     |        |
| course_id       | int   | YES   | MUL  | NULL     |        |
| enrollment_date | date  | YES   |      | NULL     |        |
+-----------------+-------+-------+------+----------+--------+
4 rows in set (0.00 sec)
```

d. Teacher

```
mysql> CREATE TABLE Courses(
    ->      course_id int PRIMARY KEY,
    ->      course_name text,
    ->      credits int,
    ->      teacher_id int,
    ->      FOREIGN KEY(teacher_id) REFERENCES Teacher(teacher_id)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> desc Courses;
+-------------+-------+-------+------+----------+--------+
| Field       | Type  | Null  | Key  | Default  | Extra  |
+-------------+-------+-------+------+----------+--------+
| course_id   | int   | NO    | PRI  | NULL     |        |
| course_name | text  | YES   |      | NULL     |        |
| credits     | int   | YES   |      | NULL     |        |
| teacher_id  | int   | YES   | MUL  | NULL     |        |
+-------------+-------+-------+------+----------+--------+
4 rows in set (0.00 sec)
```
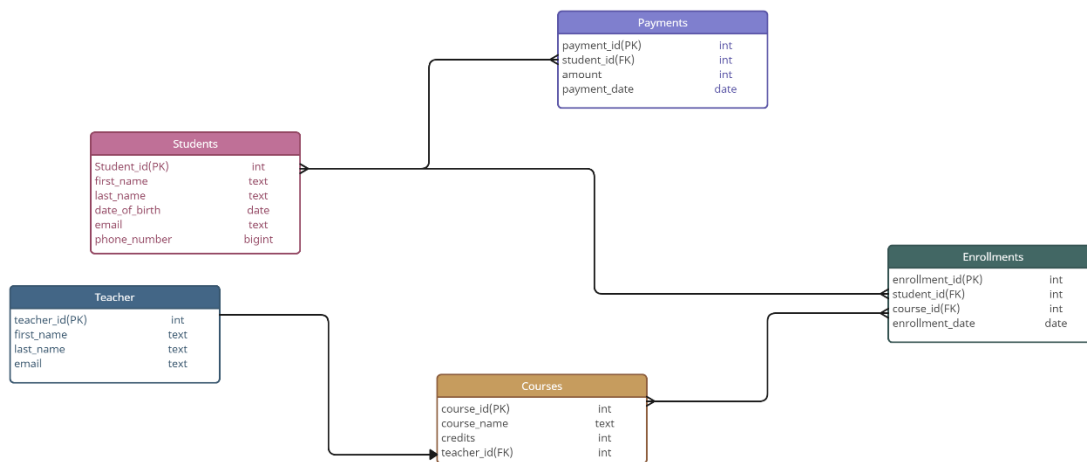
e. Payments

```
mysql> CREATE TABLE Payments(
    -> payment_id int PRIMARY KEY,
    -> student_id int,
    -> FOREIGN KEY(student_id) REFERENCES Students(student_id),
    -> amount int,
    -> payment_date date);
Query OK, 0 rows affected (0.04 sec)

mysql> desc Payments;
+--------------+-------+------+-----+---------+-------+
| Field        | Type  | Null | Key | Default | Extra |
+--------------+-------+------+-----+---------+-------+
| payment_id   | int   | NO   | PRI | NULL    |       |
| student_id   | int   | YES  | MUL | NULL    |       |
| amount       | int   | YES  |     | NULL    |       |
| payment_date | date  | YES  |     | NULL    |       |
+--------------+-------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

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

4. Create appropriate Primary Key and Foreign Key constraints for referential integrity.

```
mysql> desc Students;
+---------------+--------+------+-----+---------+-------+
| Field         | Type   | Null | Key | Default | Extra |
+---------------+--------+------+-----+---------+-------+
| student_id    | int    | NO   | PRI | NULL    |       |
| first_name    | text   | YES  |     | NULL    |       |
| last_name     | text   | YES  |     | NULL    |       |
| date_of_birth | date   | YES  |     | NULL    |       |
| email         | text   | YES  |     | NULL    |       |
| phone_number  | bigint | YES  |     | NULL    |       |
+---------------+--------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql> desc Teacher;
+------------+------+------+-----+---------+-------+
| Field      | Type | Null | Key | Default | Extra |
+------------+------+------+-----+---------+-------+
| teacher_id | int  | NO   | PRI | NULL    |       |
| first_name | text | YES  |     | NULL    |       |
| last_name  | text | YES  |     | NULL    |       |
| email      | text | YES  |     | NULL    |       |
+------------+------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc Enrollments;
+-----------------+------+------+-----+---------+-------+
| Field           | Type | Null | Key | Default | Extra |
+-----------------+------+------+-----+---------+-------+
| enrollment_id   | int  | NO   | PRI | NULL    |       |
| student_id      | int  | YES  | MUL | NULL    |       |
| course_id       | int  | YES  | MUL | NULL    |       |
| enrollment_date | date | YES  |     | NULL    |       |
+-----------------+------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc Courses;
+-------------+------+------+-----+---------+-------+
| Field       | Type | Null | Key | Default | Extra |
+-------------+------+------+-----+---------+-------+
| course_id   | int  | NO   | PRI | NULL    |       |
| course_name | text | YES  |     | NULL    |       |
| credits     | int  | YES  |     | NULL    |       |
| teacher_id  | int  | YES  | MUL | NULL    |       |
+-------------+------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc Payments;
+--------------+------+------+-----+---------+-------+
| Field        | Type | Null | Key | Default | Extra |
+--------------+------+------+-----+---------+-------+
| payment_id   | int  | NO   | PRI | NULL    |       |
| student_id   | int  | YES  | MUL | NULL    |       |
| amount       | int  | YES  |     | NULL    |       |
| payment_date | date | YES  |     | NULL    |       |
+--------------+------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

5. Insert at least 10 sample records into each of the following tables.

i. Students

```
mysql> INSERT INTO Students (student_id, first_name, last_name, date_of_birth, email, phone_number)
    -> VALUES
    -> (1, 'Alice', 'Smith', '2001-01-01', 'alice.smith@email.com', '1234567890'),
    -> (2, 'Bob', 'Johnson', '2001-02-02', 'bob.johnson@email.com', '2345678901'),
    -> (3, 'Carol', 'Williams', '2001-03-03', 'carol.williams@email.com', '3456789012'),
    -> (4, 'David', 'Brown', '2001-04-04', 'david.brown@email.com', '4567890123'),
    -> (5, 'Emma', 'Davis', '2001-05-05', 'emma.davis@email.com', '5678901234'),
    -> (6, 'Frank', 'Miller', '2001-06-06', 'frank.miller@email.com', '6789012345'),
    -> (7, 'Grace', 'Wilson', '2001-07-07', 'grace.wilson@email.com', '7890123456'),
    -> (8, 'Henry', 'Moore', '2001-08-08', 'henry.moore@email.com', '8901234567'),
    -> (9, 'Isabel', 'Taylor', '2001-09-09', 'isabel.taylor@email.com', '9014345678'),
    -> (10, 'Jack', 'Anderson', '2001-10-10', 'jack.anderson@email.com', '0123456789');
Query OK, 10 rows affected (0.02 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Students;
+------------+------------+-----------+---------------+--------------------------+--------------+
| student_id | first_name | last_name | date_of_birth | email                    | phone_number |
+------------+------------+-----------+---------------+--------------------------+--------------+
|          1 | Alice      | Smith     | 2001-01-01    | alice.smith@email.com    |   1234567890 |
|          2 | Bob        | Johnson   | 2001-02-02    | bob.johnson@email.com    |   2345678901 |
|          3 | Carol      | Williams  | 2001-03-03    | carol.williams@email.com |   3456789012 |
|          4 | David      | Brown     | 2001-04-04    | david.brown@email.com    |   4567890123 |
|          5 | Emma       | Davis     | 2001-05-05    | emma.davis@email.com     |   5678901234 |
|          6 | Frank      | Miller    | 2001-06-06    | frank.miller@email.com   |   6789012345 |
|          7 | Grace      | Wilson    | 2001-07-07    | grace.wilson@email.com   |   7890123456 |
|          8 | Henry      | Moore     | 2001-08-08    | henry.moore@email.com    |   8901234567 |
|          9 | Isabel     | Taylor    | 2001-09-09    | isabel.taylor@email.com  |   9014345678 |
|         10 | Jack       | Anderson  | 2001-10-10    | jack.anderson@email.com  |    123456789 |
+------------+------------+-----------+---------------+--------------------------+--------------+
10 rows in set (0.00 sec)
```

ii. Courses

```
mysql> INSERT INTO Courses (course_id, course_name, credits, teacher_id)
    -> VALUES
    -> (101, 'Mathematics', 4, 1),
    -> (102, 'Physics', 3, 2),
    -> (103, 'Chemistry', 4, 3),
    -> (104, 'Biology', 4, 4),
    -> (105, 'English Literature', 3, 5),
    -> (106, 'Computer Science', 3, 6),
    -> (107, 'Art History', 2, 7),
    -> (108, 'Economics', 3, 8),
    -> (109, 'Psychology', 3, 9),
    -> (110, 'Sociology', 3, 10);
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Courses;
+-----------+--------------------+---------+------------+
| course_id | course_name        | credits | teacher_id |
+-----------+--------------------+---------+------------+
|       101 | Mathematics        |       4 |          1 |
|       102 | Physics            |       3 |          2 |
|       103 | Chemistry          |       4 |          3 |
|       104 | Biology            |       4 |          4 |
|       105 | English Literature |       3 |          5 |
|       106 | Computer Science   |       3 |          6 |
|       107 | Art History        |       2 |          7 |
|       108 | Economics          |       3 |          8 |
|       109 | Psychology         |       3 |          9 |
|       110 | Sociology          |       3 |         10 |
+-----------+--------------------+---------+------------+
10 rows in set (0.00 sec)
```

iii. Enrollments

```
mysql> INSERT INTO Enrollments (enrollment_id, student_id, course_id, enrollment_date)
    -> VALUES
    -> (1, 1, 101, '2024-01-15'),
    -> (2, 2, 102, '2024-01-16'),
    -> (3, 3, 103, '2024-01-17'),
    -> (4, 4, 104, '2024-01-18'),
    -> (5, 5, 105, '2024-01-19'),
    -> (6, 6, 106, '2024-01-20'),
    -> (7, 7, 107, '2024-01-21'),
    -> (8, 8, 108, '2024-01-22'),
    -> (9, 9, 109, '2024-01-23'),
    -> (10, 10, 110, '2024-01-24');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Enrollments;
+---------------+------------+-----------+-----------------+
| enrollment_id | student_id | course_id | enrollment_date |
+---------------+------------+-----------+-----------------+
|             1 |          1 |       101 | 2024-01-15      |
|             2 |          2 |       102 | 2024-01-16      |
|             3 |          3 |       103 | 2024-01-17      |
|             4 |          4 |       104 | 2024-01-18      |
|             5 |          5 |       105 | 2024-01-19      |
|             6 |          6 |       106 | 2024-01-20      |
|             7 |          7 |       107 | 2024-01-21      |
|             8 |          8 |       108 | 2024-01-22      |
|             9 |          9 |       109 | 2024-01-23      |
|            10 |         10 |       110 | 2024-01-24      |
+---------------+------------+-----------+-----------------+
10 rows in set (0.00 sec)
```

iv. Teacher

```
mysql> INSERT INTO Teacher (teacher_id, first_name, last_name, email)
    -> VALUES
    -> (1, 'John', 'Doe', 'john.doe@email.com'),
    -> (2, 'Jane', 'Doe', 'jane.doe@email.com'),
    -> (3, 'Jim', 'Beam', 'jim.beam@email.com'),
    -> (4, 'Sara', 'Conor', 'sara.conor@email.com'),
    -> (5, 'Luke', 'Skywalker', 'luke.skywalker@email.com'),
    -> (6, 'Leia', 'Organa', 'leia.organa@email.com'),
    -> (7, 'Han', 'Solo', 'han.solo@email.com'),
    -> (8, 'Anakin', 'Skywalker', 'anakin.skywalker@email.com'),
    -> (9, 'Obi-Wan', 'Kenobi', 'obiwan.kenobi@email.com'),
    -> (10, 'Yoda', 'Master', 'master.yoda@email.com');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Teacher;
+------------+------------+-----------+----------------------------+
| teacher_id | first_name | last_name | email                      |
+------------+------------+-----------+----------------------------+
|          1 | John       | Doe       | john.doe@email.com         |
|          2 | Jane       | Doe       | jane.doe@email.com         |
|          3 | Jim        | Beam      | jim.beam@email.com         |
|          4 | Sara       | Conor     | sara.conor@email.com       |
|          5 | Luke       | Skywalker | luke.skywalker@email.com   |
|          6 | Leia       | Organa    | leia.organa@email.com      |
|          7 | Han        | Solo      | han.solo@email.com         |
|          8 | Anakin     | Skywalker | anakin.skywalker@email.com |
|          9 | Obi-Wan    | Kenobi    | obiwan.kenobi@email.com    |
|         10 | Yoda       | Master    | master.yoda@email.com      |
+------------+------------+-----------+----------------------------+
10 rows in set (0.00 sec)
```

v. Payments

```
mysql> INSERT INTO Payments (payment_id, student_id, amount, payment_date)
    -> VALUES
    -> (1, 1, 1000, '2024-01-01'),
    -> (2, 2, 1500, '2024-01-02'),
    -> (3, 3, 1200, '2024-01-03'),
    -> (4, 4, 1300, '2024-01-04'),
    -> (5, 5, 1400, '2024-01-05'),
    -> (6, 6, 1100, '2024-01-06'),
    -> (7, 7, 1600, '2024-01-07'),
    -> (8, 8, 1700, '2024-01-08'),
    -> (9, 9, 1800, '2024-01-09'),
    -> (10, 10, 1900, '2024-01-10');
Query OK, 10 rows affected (0.05 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Payments;
+------------+------------+--------+--------------+
| payment_id | student_id | amount | payment_date |
+------------+------------+--------+--------------+
|          1 |          1 |   1000 | 2024-01-01   |
|          2 |          2 |   1500 | 2024-01-02   |
|          3 |          3 |   1200 | 2024-01-03   |
|          4 |          4 |   1300 | 2024-01-04   |
|          5 |          5 |   1400 | 2024-01-05   |
|          6 |          6 |   1100 | 2024-01-06   |
|          7 |          7 |   1600 | 2024-01-07   |
|          8 |          8 |   1700 | 2024-01-08   |
|          9 |          9 |   1800 | 2024-01-09   |
|         10 |         10 |   1900 | 2024-01-10   |
+------------+------------+--------+--------------+
10 rows in set (0.00 sec)
```