**ASSIGNMENT TASK 1**

**1. Create the database named "SISDB"**

mysql> create database SISDB;

Query OK, 1 row affected (0.04 sec)

mysql> use SISDB

Database changed

**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.**

mysql> CREATE TABLE Students (student\_id INT PRIMARY KEY AUTO\_INCREMENT,first\_name VARCHAR(20) NOT NULL,last\_name VARCHAR(20) NOT NULL,date\_of\_birth DATE NOT NULL,email VARCHAR(20) UNIQUE NOT NULL,phone\_number VARCHAR(20) UNIQUE NOT NULL);

Query OK, 0 rows affected (0.10 sec)

mysql> CREATE TABLE Teachers (teacher\_id INT PRIMARY KEY AUTO\_INCREMENT,first\_name VARCHAR(20) NOT NULL,last\_name VARCHAR(20) NOT NULL,email VARCHAR(20) UNIQUE NOT NULL);

Query OK, 0 rows affected (0.10 sec)

mysql> CREATE TABLE Courses (course\_id INT PRIMARY KEY AUTO\_INCREMENT,course\_name VARCHAR(20) NOT NULL,credits INT NOT NULL,teacher\_id INT,FOREIGN KEY (teacher\_id) REFERENCES Teachers(teacher\_id) ON DELETE SET NULL);

Query OK, 0 rows affected (0.07 sec)

mysql> CREATE TABLE Enrollments (enrollment\_id INT PRIMARY KEY AUTO\_INCREMENT,student\_id INT,course\_id INT,enrollment\_date DATE NOT NULL,FOREIGN KEY (student\_id) REFERENCES Students(student\_id) ON DELETE CASCADE,FOREIGN KEY (course\_id) REFERENCES Courses(course\_id) ON DELETE CASCADE);

Query OK, 0 rows affected (0.08 sec)

mysql> CREATE TABLE Payments (payment\_id INT PRIMARY KEY AUTO\_INCREMENT,student\_id INT,amount DECIMAL(10,2) NOT NULL,payment\_date DATE NOT NULL,FOREIGN KEY (student\_id) REFERENCES Students(student\_id) ON DELETE CASCADE);

Query OK, 0 rows affected (0.08 sec)

mysql> desc Students;

+---------------+-------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+---------------+-------------+------+-----+---------+----------------+

| student\_id | int | NO | PRI | NULL | auto\_increment |

| first\_name | varchar(20) | NO | | NULL | |

| last\_name | varchar(20) | NO | | NULL | |

| date\_of\_birth | date | NO | | NULL | |

| email | varchar(20) | NO | UNI | NULL | |

| phone\_number | varchar(20) | NO | UNI | NULL | |

+---------------+-------------+------+-----+---------+----------------+

6 rows in set (0.05 sec)

mysql> desc Teachers;

+------------+-------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+------------+-------------+------+-----+---------+----------------+

| teacher\_id | int | NO | PRI | NULL | auto\_increment |

| first\_name | varchar(20) | NO | | NULL | |

| last\_name | varchar(20) | NO | | NULL | |

| email | varchar(20) | NO | UNI | NULL | |

+------------+-------------+------+-----+---------+----------------+

4 rows in set (0.00 sec)

mysql> desc Courses;

+-------------+-------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-------------+-------------+------+-----+---------+----------------+

| course\_id | int | NO | PRI | NULL | auto\_increment |

| course\_name | varchar(20) | NO | | NULL | |

| credits | int | NO | | NULL | |

| teacher\_id | int | YES | MUL | NULL | |

+-------------+-------------+------+-----+---------+----------------+

4 rows in set (0.00 sec)

mysql> desc Enrollments;

+-----------------+------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+------+------+-----+---------+----------------+

| enrollment\_id | int | NO | PRI | NULL | auto\_increment |

| student\_id | int | YES | MUL | NULL | |

| course\_id | int | YES | MUL | NULL | |

| enrollment\_date | date | NO | | NULL | |

+-----------------+------+------+-----+---------+----------------+

4 rows in set (0.00 sec)

mysql> desc Payments;

+--------------+---------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+--------------+---------------+------+-----+---------+----------------+

| payment\_id | int | NO | PRI | NULL | auto\_increment |

| student\_id | int | YES | MUL | NULL | |

| amount | decimal(10,2) | NO | | NULL | |

| payment\_date | date | NO | | NULL | |

+--------------+---------------+------+-----+---------+----------------+

4 rows in set (0.00 sec)

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

A screenshot of a computer

AI-generated content may be incorrect.

**INSERTION OF VALUES IN SISDB:**

mysql> use SISDB;

Database changed

mysql> desc students;

+---------------+-------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+---------------+-------------+------+-----+---------+----------------+

| student\_id | int | NO | PRI | NULL | auto\_increment |

| first\_name | varchar(20) | NO | | NULL | |

| last\_name | varchar(20) | NO | | NULL | |

| date\_of\_birth | date | NO | | NULL | |

| email | varchar(20) | NO | UNI | NULL | |

| phone\_number | varchar(20) | NO | UNI | NULL | |

+---------------+-------------+------+-----+---------+----------------+

6 rows in set (0.03 sec)

mysql> alter table students modify email varchar(50);

Query OK, 0 rows affected (0.25 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Students (first\_name, last\_name, date\_of\_birth, email, phone\_number) VALUES('Arun', 'Kumar', '2000-02-10', 'arun.kumar@gmail.com', '9123456780'),('Meera', 'Venkatesh', '1999-05-15', 'meera.venkatesh@gmail.com', '9234567891'),('Vikram', 'Reddy', '2001-07-21', 'vikram.reddy@gmail.com', '9345678902'),('Divya', 'Natarajan', '2002-09-30', 'divya.natarajan@gmail.com', '9456789013'),('Ravi', 'Chandran', '2000-12-05', 'ravi.chandran@gmail.com', '9567890124'),('Lakshmi', 'Subramanian', '2001-03-18', 'lakshmi.subramanian@gmail.com', '9678901235'),('Hari', 'Narayan', '1998-08-25', 'hari.narayan@gmail.com', '9789012346'),('Priya', 'Madhavan', '1999-06-12', 'priya.madhavan@gmail.com', '9890123457'),('Santhosh', 'Sivam', '2000-04-22', 'santhosh.sivam@gmail.com', '9901234568'),('Keerthi', 'Rajagopal', '2001-11-17', 'keerthi.rajagopal@gmail.com', '9012345679');

Query OK, 10 rows affected (0.04 sec)

Records: 10 Duplicates: 0 Warnings: 0

**mysql> select \* from students;**

+------------+------------+-------------+---------------+-------------------------------+--------------+

| student\_id | first\_name | last\_name | date\_of\_birth | email | phone\_number |

+------------+------------+-------------+---------------+-------------------------------+--------------+

| 11 | Arun | Kumar | 2000-02-10 | arun.kumar@gmail.com | 9123456780 |

| 12 | Meera | Venkatesh | 1999-05-15 | meera.venkatesh@gmail.com | 9234567891 |

| 13 | Vikram | Reddy | 2001-07-21 | vikram.reddy@gmail.com | 9345678902 |

| 14 | Divya | Natarajan | 2002-09-30 | divya.natarajan@gmail.com | 9456789013 |

| 15 | Ravi | Chandran | 2000-12-05 | ravi.chandran@gmail.com | 9567890124 |

| 16 | Lakshmi | Subramanian | 2001-03-18 | lakshmi.subramanian@gmail.com | 9678901235 |

| 17 | Hari | Narayan | 1998-08-25 | hari.narayan@gmail.com | 9789012346 |

| 18 | Priya | Madhavan | 1999-06-12 | priya.madhavan@gmail.com | 9890123457 |

| 19 | Santhosh | Sivam | 2000-04-22 | santhosh.sivam@gmail.com | 9901234568 |

| 20 | Keerthi | Rajagopal | 2001-11-17 | keerthi.rajagopal@gmail.com | 9012345679 |

+------------+------------+-------------+---------------+-------------------------------+--------------+

10 rows in set (0.00 sec)

mysql> alter table students auto\_increment=1;

Query OK, 0 rows affected (0.06 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Teachers (first\_name, last\_name, email) VALUES('Sundar', 'Krishnan', 'sundar.krishnan@gmail.com'),('Lakshmi', 'Raghavan', 'lakshmi.raghavan@gmail.com'),('Ganesh', 'Prasad', 'ganesh.prasad@gmail.com'),('Uma', 'Shankar', 'uma.shankar@gmail.com'),('Rajesh', 'Varma', 'rajesh.varma@gmail.com'),('Anitha', 'Selvam', 'anitha.selvam@gmail.com'),('Mohan', 'Vasudevan', 'mohan.vasudevan@gmail.com'),('Deepa', 'Balakrishnan', 'deepa.balakrishnan@gmail.com'),('Karthik', 'Srinivasan', 'karthik.srinivasan@gmail.com'),('Revathi', 'Iyer', 'revathi.iyer@gmail.com');

Query OK, 10 rows affected (0.05 sec)

Records: 10 Duplicates: 0 Warnings: 0

**mysql> select \* from teachers;**

+------------+------------+--------------+------------------------------+

| teacher\_id | first\_name | last\_name | email |

+------------+------------+--------------+------------------------------+

| 1 | Sundar | Krishnan | sundar.krishnan@gmail.com |

| 2 | Lakshmi | Raghavan | lakshmi.raghavan@gmail.com |

| 3 | Ganesh | Prasad | ganesh.prasad@gmail.com |

| 4 | Uma | Shankar | uma.shankar@gmail.com |

| 5 | Rajesh | Varma | rajesh.varma@gmail.com |

| 6 | Anitha | Selvam | anitha.selvam@gmail.com |

| 7 | Mohan | Vasudevan | mohan.vasudevan@gmail.com |

| 8 | Deepa | Balakrishnan | deepa.balakrishnan@gmail.com |

| 9 | Karthik | Srinivasan | karthik.srinivasan@gmail.com |

| 10 | Revathi | Iyer | revathi.iyer@gmail.com |

+------------+------------+--------------+------------------------------+

10 rows in set (0.00 sec)

mysql> INSERT INTO Courses (course\_id, course\_name, credits, teacher\_id) VALUES(1001, 'Python Basics', 4, 1),(1002, 'Data Structures', 3, 2),(1003, 'Database Systems', 4, 3),(1004, 'Networking', 3, 4),(1005, 'Operating Systems', 4, 5),(1006, 'AI & ML', 3, 6),(1007, 'Cyber Security', 4, 7),(1008, 'Software Engineering', 3, 8),(1009, 'Web Development', 4, 9),(1010, 'Cloud Computing', 3, 10);

Query OK, 10 rows affected (0.05 sec)

Records: 10 Duplicates: 0 Warnings: 0

**mysql> select \* from courses;**

+-----------+----------------------+---------+------------+

| course\_id | course\_name | credits | teacher\_id |

+-----------+----------------------+---------+------------+

| 1001 | Python Basics | 4 | 1 |

| 1002 | Data Structures | 3 | 2 |

| 1003 | Database Systems | 4 | 3 |

| 1004 | Networking | 3 | 4 |

| 1005 | Operating Systems | 4 | 5 |

| 1006 | AI & ML | 3 | 6 |

| 1007 | Cyber Security | 4 | 7 |

| 1008 | Software Engineering | 3 | 8 |

| 1009 | Web Development | 4 | 9 |

| 1010 | Cloud Computing | 3 | 10 |

+-----------+----------------------+---------+------------+

10 rows in set (0.00 sec)

mysql> INSERT INTO Enrollments (enrollment\_id, student\_id, course\_id, enrollment\_date) VALUES(101, 11, 1001, '2024-03-01'),(102, 12, 1002, '2024-03-02'),(103, 13, 1003, '2024-03-03'),(104, 14, 1004, '2024-03-04'),(105, 15, 1005, '2024-03-05'),(106, 16, 1006, '2024-03-06'),(107, 17, 1007, '2024-03-07'),(108, 18, 1008, '2024-03-08'),(109, 19, 1009, '2024-03-09'),(110, 20, 1010, '2024-03-10');

Query OK, 10 rows affected (0.05 sec)

Records: 10 Duplicates: 0 Warnings: 0

**mysql> select \* from enrollments;**

+---------------+------------+-----------+-----------------+

| enrollment\_id | student\_id | course\_id | enrollment\_date |

+---------------+------------+-----------+-----------------+

| 101 | 11 | 1001 | 2024-03-01 |

| 102 | 12 | 1002 | 2024-03-02 |

| 103 | 13 | 1003 | 2024-03-03 |

| 104 | 14 | 1004 | 2024-03-04 |

| 105 | 15 | 1005 | 2024-03-05 |

| 106 | 16 | 1006 | 2024-03-06 |

| 107 | 17 | 1007 | 2024-03-07 |

| 108 | 18 | 1008 | 2024-03-08 |

| 109 | 19 | 1009 | 2024-03-09 |

| 110 | 20 | 1010 | 2024-03-10 |

+---------------+------------+-----------+-----------------+

10 rows in set (0.00 sec)

mysql> INSERT INTO Payments (payment\_id, student\_id, amount, payment\_date) VALUES(4001, 11, 1500.00, '2024-03-11'),(4002, 12, 1200.00, '2024-03-12'),(4003, 13, 1800.00, '2024-03-13'),(4004, 14, 2100.00, '2024-03-14'),(4005, 15, 1300.00, '2024-03-15'),(4006, 16, 1700.00, '2024-03-16'),(4007, 17, 1400.00, '2024-03-17'),(4008, 18, 1600.00, '2024-03-18'),(4009, 19, 1900.00, '2024-03-19'),(4010, 20, 2000.00, '2024-03-20');

Query OK, 10 rows affected (0.04 sec)

Records: 10 Duplicates: 0 Warnings: 0

**mysql> select \* from payments;**

+------------+------------+---------+--------------+

| payment\_id | student\_id | amount | payment\_date |

+------------+------------+---------+--------------+

| 4001 | 11 | 1500.00 | 2024-03-11 |

| 4002 | 12 | 1200.00 | 2024-03-12 |

| 4003 | 13 | 1800.00 | 2024-03-13 |

| 4004 | 14 | 2100.00 | 2024-03-14 |

| 4005 | 15 | 1300.00 | 2024-03-15 |

| 4006 | 16 | 1700.00 | 2024-03-16 |

| 4007 | 17 | 1400.00 | 2024-03-17 |

| 4008 | 18 | 1600.00 | 2024-03-18 |

| 4009 | 19 | 1900.00 | 2024-03-19 |

| 4010 | 20 | 2000.00 | 2024-03-20 |

+------------+------------+---------+--------------+

10 rows in set (0.00 sec)