Schema SQL

CREATE DATABASE IF NOT EXISTS SchoolManagementSystem;

CREATE TABLE SchoolManagementSystem.Students (

student\_id INT PRIMARY KEY,

first\_name VARCHAR(50),

last\_name VARCHAR(50),

age INT,

gender CHAR(5),

class\_id INT

);

CREATE TABLE SchoolManagementSystem.Classes (

class\_id INT PRIMARY KEY,

class\_name VARCHAR(25),

teacher\_id INT

);

CREATE TABLE SchoolManagementSystem.Teachers (

teacher\_id INT PRIMARY KEY,

first\_name VARCHAR(50),

last\_name VARCHAR(50),

subject\_id INT

);

CREATE TABLE SchoolManagementSystem.Subjects (

subject\_id INT PRIMARY KEY,

subject\_name VARCHAR(50),

class\_id INT

);

CREATE TABLE SchoolManagementSystem.Enrollments (

enrollment\_id INT PRIMARY KEY,

student\_id INT,

subject\_id INT,

enrollment\_date DATE

);

ALTER TABLE SchoolManagementSystem.Classes

ADD FOREIGN KEY (teacher\_id) REFERENCES SchoolManagementSystem.Teachers(teacher\_id);

ALTER TABLE SchoolManagementSystem.Students

ADD FOREIGN KEY (class\_id) REFERENCES SchoolManagementSystem.Classes(class\_id);

ALTER TABLE SchoolManagementSystem.Enrollments

ADD FOREIGN KEY (student\_id) REFERENCES SchoolManagementSystem.Students(student\_id),

ADD FOREIGN KEY (subject\_id) REFERENCES SchoolManagementSystem.Subjects(subject\_id);

ALTER TABLE SchoolManagementSystem.Teachers

ADD FOREIGN KEY (subject\_id) REFERENCES SchoolManagementSystem.Subjects(subject\_id);

ALTER TABLE SchoolManagementSystem.Subjects

ADD FOREIGN KEY (class\_id) REFERENCES SchoolManagementSystem.Classes(class\_id);

Query SQL

-- Step 1: Inserting data into Subjects table

INSERT INTO SchoolManagementSystem.Subjects (subject\_id, subject\_name, class\_id) VALUES

(1, 'Mathematics', NULL),

(2, 'Science', NULL),

(3, 'History', NULL),

(4, 'English', NULL),

(5, 'Art', NULL),

(6, 'Music', NULL),

(7, 'Physical Education', NULL),

(8, 'Computer Science', NULL),

(9, 'Geography', NULL),

(10, 'Biology', NULL),

(11, 'Chemistry', NULL),

(12, 'Physics', NULL),

(13, 'Philosophy', NULL),

(14, 'Psychology', NULL),

(15, 'Economics', NULL),

(16, 'Sociology', NULL),

(17, 'Political Science', NULL),

(18, 'Environmental Science', NULL),

(19, 'Literature', NULL),

(20, 'Drama', NULL);

-- Step 2: Inserting data into Teachers table (without subject\_id)

INSERT INTO SchoolManagementSystem.Teachers (teacher\_id, first\_name, last\_name, subject\_id) VALUES

(1, 'Kwame', 'Agyemang', NULL),

(2, 'Ama', 'Boateng', NULL),

(3, 'Kofi', 'Mensah', NULL),

(4, 'Akosua', 'Owusu', NULL),

(5, 'Yaw', 'Addo', NULL),

(6, 'Afia', 'Asante', NULL),

(7, 'Kwabena', 'Osei', NULL),

(8, 'Serwaa', 'Boakye', NULL),

(9, 'Esi', 'Tetteh', NULL),

(10, 'Kojo', 'Quartey', NULL),

(11, 'Mavis', 'Amankwah', NULL),

(12, 'Emmanuel', 'Yeboah', NULL),

(13, 'Akua', 'Tuffour', NULL),

(14, 'Nana', 'Kusi', NULL),

(15, 'Abena', 'Poku', NULL),

(16, 'Benedicta', 'Kwakye', NULL),

(17, 'Yaw', 'Antwi', NULL),

(18, 'Ruth', 'Gyan', NULL),

(19, 'Kwaku', 'Frimpong', NULL),

(20, 'Afia', 'Nyarko', NULL);

-- Step 3: Inserting data into Classes table (without teacher\_id)

INSERT INTO SchoolManagementSystem.Classes (class\_id, class\_name, teacher\_id) VALUES

(1, 'Math 101', NULL),

(2, 'Science 101', NULL),

(3, 'History 101', NULL),

(4, 'English 101', NULL),

(5, 'Art 101', NULL),

(6, 'Music 101', NULL),

(7, 'PE 101', NULL),

(8, 'Computer Science 101', NULL),

(9, 'Geography 101', NULL),

(10, 'Biology 101', NULL),

(11, 'Chemistry 101', NULL),

(12, 'Physics 101', NULL),

(13, 'Philosophy 101', NULL),

(14, 'Psychology 101', NULL),

(15, 'Economics 101', NULL),

(16, 'Sociology 101', NULL),

(17, 'Political Science 101', NULL),

(18, 'Environmental Science 101', NULL),

(19, 'Literature 101', NULL),

(20, 'Drama 101', NULL);

-- Step 4: Inserting data into Students table (without class\_id)

INSERT INTO SchoolManagementSystem.Students (student\_id, first\_name, last\_name, age, gender, class\_id) VALUES

(1, 'Kofi', 'Mensah', 16, 'M', NULL),

(2, 'Adwoa', 'Baffour', 19, 'F', NULL),

(3, 'Kwame', 'Boakye', 18, 'M', NULL),

(4, 'Esi', 'Ofori', 22, 'F', NULL),

(5, 'Kojo', 'Addo', 24, 'M', NULL),

(6, 'Ama', 'Boateng', 21, 'F', NULL),

(7, 'Kwabena', 'Antwi', 26, 'M', NULL),

(8, 'Afia', 'Quartey', 28, 'F', NULL),

(9, 'Nana', 'Yeboah', 20, 'M', NULL),

(10, 'Akua', 'Frimpong', 25, 'F', NULL),

(11, 'Kwasi', 'Kwakye', 17, 'M', NULL),

(12, 'Abena', 'Tuffour', 23, 'F', NULL),

(13, 'Yaw', 'Kusi', 28, 'M', NULL),

(14, 'Mavis', 'Gyan', 22, 'F', NULL),

(15, 'Ruth', 'Osei', 19, 'F', NULL),

(16, 'Kwaku', 'Nyarko', 16, 'M', NULL),

(17, 'Emmanuel', 'Antwi', 24, 'M', NULL),

(18, 'Sofia', 'Tetteh', 16, 'F', NULL),

(19, 'Samuel', 'Poku', 27, 'M', NULL),

(20, 'Lydia', 'Agyemang', 20, 'F', NULL);

-- Step 1: Update the Subjects table with valid class\_id values

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 1

WHERE subject\_id = 1;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 2

WHERE subject\_id = 2;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 3

WHERE subject\_id = 3;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 4

WHERE subject\_id = 4;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 5

WHERE subject\_id = 5;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 6

WHERE subject\_id = 6;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 7

WHERE subject\_id = 7;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 8

WHERE subject\_id = 8;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 9

WHERE subject\_id = 9;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 10

WHERE subject\_id = 10;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 11

WHERE subject\_id = 11;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 12

WHERE subject\_id = 12;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 13

WHERE subject\_id = 13;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 14

WHERE subject\_id = 14;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 15

WHERE subject\_id = 15;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 16

WHERE subject\_id = 16;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 17

WHERE subject\_id = 17;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 18

WHERE subject\_id = 18;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 19

WHERE subject\_id = 19;

UPDATE SchoolManagementSystem.Subjects

SET class\_id = 20

WHERE subject\_id = 20;

-- Step 2: Update the Teachers table with valid subject\_id values

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 1

WHERE teacher\_id = 1;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 2

WHERE teacher\_id = 2;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 3

WHERE teacher\_id = 3;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 4

WHERE teacher\_id = 4;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 5

WHERE teacher\_id = 5;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 6

WHERE teacher\_id = 6;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 7

WHERE teacher\_id = 7;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 8

WHERE teacher\_id = 8;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 9

WHERE teacher\_id = 9;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 10

WHERE teacher\_id = 10;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 11

WHERE teacher\_id = 11;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 12

WHERE teacher\_id = 12;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 13

WHERE teacher\_id = 13;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 14

WHERE teacher\_id = 14;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 15

WHERE teacher\_id = 15;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 16

WHERE teacher\_id = 16;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 17

WHERE teacher\_id = 17;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 18

WHERE teacher\_id = 18;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 19

WHERE teacher\_id = 19;

UPDATE SchoolManagementSystem.Teachers

SET subject\_id = 20

WHERE teacher\_id = 20;

-- Step 3: Update the Classes table with valid teacher\_id values

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 1

WHERE class\_id = 1;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 2

WHERE class\_id = 2;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 3

WHERE class\_id = 3;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 4

WHERE class\_id = 4;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 5

WHERE class\_id = 5;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 6

WHERE class\_id = 6;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 7

WHERE class\_id = 7;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 8

WHERE class\_id = 8;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 9

WHERE class\_id = 9;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 10

WHERE class\_id = 10;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 11

WHERE class\_id = 11;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 12

WHERE class\_id = 12;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 13

WHERE class\_id = 13;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 14

WHERE class\_id = 14;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 15

WHERE class\_id = 15;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 16

WHERE class\_id = 16;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 17

WHERE class\_id = 17;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 18

WHERE class\_id = 18;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 19

WHERE class\_id = 19;

UPDATE SchoolManagementSystem.Classes

SET teacher\_id = 20

WHERE class\_id = 20;

-- Step 4: Update the Students table with valid class\_id values

UPDATE SchoolManagementSystem.Students

SET class\_id = 1

WHERE student\_id = 1;

UPDATE SchoolManagementSystem.Students

SET class\_id = 2

WHERE student\_id = 2;

UPDATE SchoolManagementSystem.Students

SET class\_id = 3

WHERE student\_id = 3;

UPDATE SchoolManagementSystem.Students

SET class\_id = 4

WHERE student\_id = 4;

UPDATE SchoolManagementSystem.Students

SET class\_id = 5

WHERE student\_id = 5;

UPDATE SchoolManagementSystem.Students

SET class\_id = 6

WHERE student\_id = 6;

UPDATE SchoolManagementSystem.Students

SET class\_id = 7

WHERE student\_id = 7;

UPDATE SchoolManagementSystem.Students

SET class\_id = 8

WHERE student\_id = 8;

UPDATE SchoolManagementSystem.Students

SET class\_id = 9

WHERE student\_id = 9;

UPDATE SchoolManagementSystem.Students

SET class\_id = 10

WHERE student\_id = 10;

UPDATE SchoolManagementSystem.Students

SET class\_id = 11

WHERE student\_id = 11;

UPDATE SchoolManagementSystem.Students

SET class\_id = 12

WHERE student\_id = 12;

UPDATE SchoolManagementSystem.Students

SET class\_id = 13

WHERE student\_id = 13;

UPDATE SchoolManagementSystem.Students

SET class\_id = 14

WHERE student\_id = 14;

UPDATE SchoolManagementSystem.Students

SET class\_id = 15

WHERE student\_id = 15;

UPDATE SchoolManagementSystem.Students

SET class\_id = 16

WHERE student\_id = 16;

UPDATE SchoolManagementSystem.Students

SET class\_id = 17

WHERE student\_id = 17;

UPDATE SchoolManagementSystem.Students

SET class\_id = 18

WHERE student\_id = 18;

UPDATE SchoolManagementSystem.Students

SET class\_id = 19

WHERE student\_id = 19;

UPDATE SchoolManagementSystem.Students

SET class\_id = 20

WHERE student\_id = 20;

-- Query 1: select all fields in Students table

select \* from SchoolManagementSystem.Students

-- Query 2: select all fields in Students table

select \*

from SchoolManagementSystem.Students

where age = 20

-- Query 3: select class ordered alphabetically

select class\_name

from SchoolManagementSystem.Classes

order by class\_name asc

-- Query 4: count the number of students in each class

select count(\*) as student\_count, class\_id

from SchoolManagementSystem.Students

group by class\_id

-- Query 5: student names and their classes

select

SchoolManagementSystem.Students.first\_name AS student\_first\_name,

SchoolManagementSystem.Students.last\_name AS student\_last\_name,

SchoolManagementSystem.Classes.class\_name AS class\_name

from

SchoolManagementSystem.Students

inner join

SchoolManagementSystem.Classes

on

Students.class\_id = Classes.class\_id;

-- Query 6: this shows the sudents, their subjects and teachers for those subjects

SELECT

SchoolManagementSystem.Students.first\_name AS student\_first\_name,

SchoolManagementSystem.Students.last\_name AS student\_last\_name,

SchoolManagementSystem.Subjects.subject\_name AS subject\_name,

CONCAT(SchoolManagementSystem.Teachers.first\_name, ' ', SchoolManagementSystem.Teachers.last\_name) AS teacher\_name

FROM

SchoolManagementSystem.Students

INNER JOIN

SchoolManagementSystem.Enrollments ON SchoolManagementSystem.Students.student\_id = SchoolManagementSystem.Enrollments.student\_id

INNER JOIN

SchoolManagementSystem.Subjects ON SchoolManagementSystem.Enrollments.subject\_id = SchoolManagementSystem.Subjects.subject\_id

INNER JOIN

SchoolManagementSystem.Teachers ON SchoolManagementSystem.Subjects.subject\_id = SchoolManagementSystem.Teachers.subject\_id;