Project Title: Academic Management System (using SQL)

1. Database Creation

```
CREATE DATABASE student_database;

USE student_database;
```

a)

```
CREATE TABLE StudentInfo (
   STU_ID int PRIMARY KEY,
   STU_NAME varchar(100),
   DOB DATE,
   PHONE_NO varchar(15),
   EMAIL_ID varchar(50),
   ADDRESS varchar(250)
);
```

b)

```
CREATE TABLE CourseInfo (
   COURSE_ID INT,
   COURSE_NAME VARCHAR(100),
   COURSE_INSTRUCTOR_NAME VARCHAR(100),
   PRIMARY KEY (COURSE_ID)
);
```

c)

```
CREATE TABLE EnrollmentInfo (
   ENROLLMENT_ID INT,
   STU_ID INT,
   COURSE_ID INT,
   ENROLL_STATUS VARCHAR(20),
   PRIMARY KEY (ENROLLMENT_ID),
   FOREIGN KEY (STU_ID) REFERENCES
StudentInfo(STU_ID),
   FOREIGN KEY (COURSE_ID) REFERENCES
CourseInfo(COURSE_ID)
);
```

2. Data Creation:

```
INSERT INTO StudentInfo (STU_ID, STU_NAME, DOB, PHONE_NO, EMAIL_ID, ADDRESS) VALUES
(101, 'Tom Hardy', '1993-07-23', '9999999991', 'tom101@gmail.com', 'Chennai'),
(102, 'Sam Joseph', '1994-06-23', '9999999992', 'sam102@gmail.com', 'Bangalore'),
(103, 'Ben Issac', '1993-08-25', '9999999993', 'ben103@gmail.com', 'Bangalore'),
(104, 'Kane Lewis', '1993-10-23', '9999999994', 'kane104@gmail.com', 'Pune'),
(105, 'Ian Robert', '1994-06-14', '9999999995', 'ian105@gmail.com', 'Delhi'),
(106, 'John Austin', '1991-07-17', '9999999996', 'john106@gmail.com', 'Indore');
```

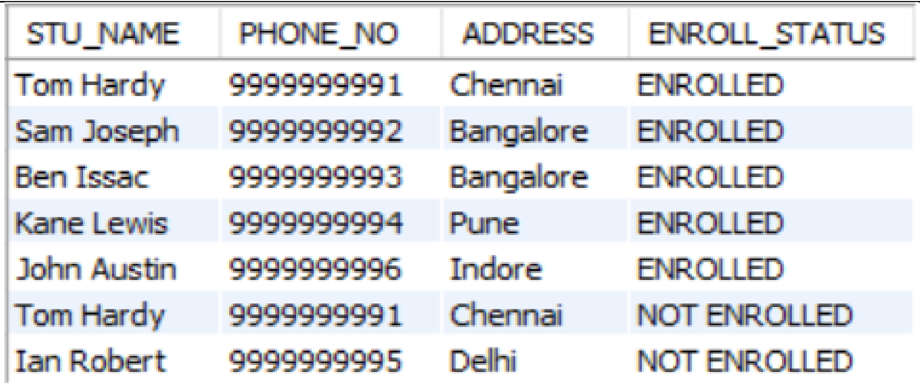
```
INSERT INTO CourseInfo (COURSE_ID, COURSE_NAME, COURSE_INSTRUCTOR_NAME) VALUES
(1, 'SQL', 'Hayden'),
(2, 'Python', 'Ashish'),
(3, 'AWS', 'Tim'),
(4, 'JAVA', 'Harry'),
(5, 'CSS', 'Nathan');

INSERT INTO EnrollmentInfo (ENROLLMENT_ID, STU_ID, COURSE_ID, ENROLL_STATUS) VALUES
(10001, 101, 1, 'ENROLLED'),
(10002, 103, 2, 'ENROLLED'),
(10003, 104, 4, 'ENROLLED'),
(10004, 102, 3, 'ENROLLED'),
(10005, 105, 3, 'NOT ENROLLED'),
(10006, 106, 5, 'ENROLLED')
(10007, 101, 5, 'NOT ENROLLED');
```

3) **Retrieve the Student Information**

a) Write a query to retrieve student details, such as student name, contact informations, and Enrollment status.

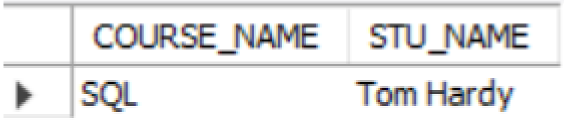
```
SELECT s.STU_NAME,
s.PHONE_NO,
s.ADDRESS,
e.ENROLL_STATUS
FROM StudentInfo s
JOIN EnrollmentInfo e
ON s.STU_ID =
e.STU_ID
ORDER BY
e.ENROLL_STATUS
ASC;
```



STU_NAME	PHONE_NO	ADDRESS	ENROLL_STATUS
Tom Hardy	9999999991	Chennai	ENROLLED
Sam Joseph	9999999992	Bangalore	ENROLLED
Ben Issac	9999999993	Bangalore	ENROLLED
Kane Lewis	9999999994	Pune	ENROLLED
John Austin	9999999996	Indore	ENROLLED
Tom Hardy	9999999991	Chennai	NOT ENROLLED
Ian Robert	9999999995	Delhi	NOT ENROLLED

b) Write a query to retrieve a list of courses in which a specific student is enrolled.

```
SELECT
c.COURSE_NAME,
s.STU_NAME
FROM EnrollmentInfo
e
JOIN CourseInfo c ON
e.COURSE_ID =
c.COURSE_ID
JOIN StudentInfo s ON
s.STU_ID = e.STU_ID
WHERE e.STU_ID =
101
```

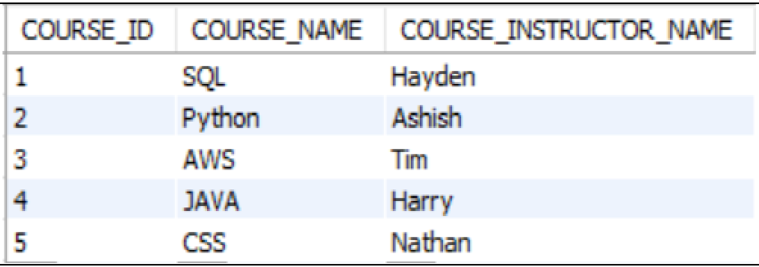


COURSE_NAME	STU_NAME
SQL	Tom Hardy

AND
e.ENROLL_STATUS =
'ENROLLED';

c) Write a query to retrieve course information, including course name, instructor information.

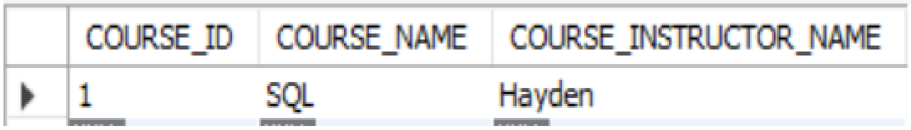
*SELECT **
FROM CourseInfo;



COURSE_ID	COURSE_NAME	COURSE_INSTRUCTOR_NAME
1	SQL	Hayden
2	Python	Ashish
3	AWS	Tim
4	JAVA	Harry
5	CSS	Nathan

d) Write a query to retrieve course information for a specific course.

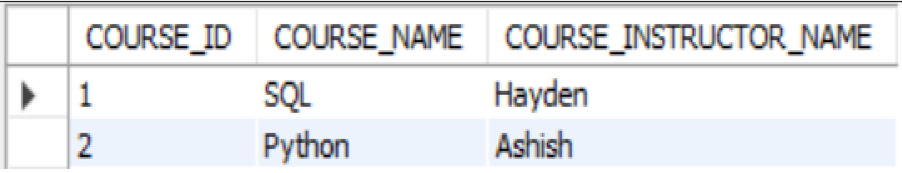
*SELECT **
FROM CourseInfo
WHERE
COURSE_NAME =
'SQL';



COURSE_ID	COURSE_NAME	COURSE_INSTRUCTOR_NAME
1	SQL	Hayden

e) Write a query to retrieve course information for multiple courses.

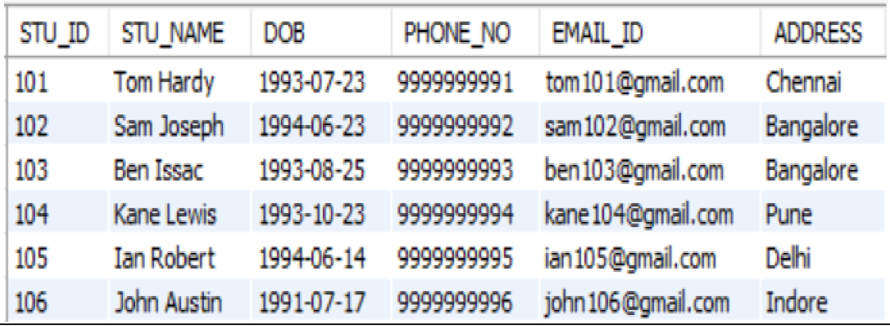
*SELECT **
FROM CourseInfo
WHERE
COURSE_NAME IN
('SQL', 'Python');



COURSE_ID	COURSE_NAME	COURSE_INSTRUCTOR_NAME
1	SQL	Hayden
2	Python	Ashish

f) Test the queries to ensure accurate retrieval of student information. (Execute the queries and verify the results against the expected output.)

*SELECT * FROM*
StudentInfo;

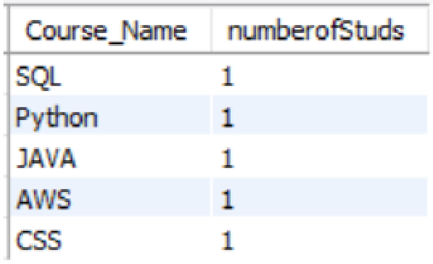


STU_ID	STU_NAME	DOB	PHONE_NO	EMAIL_ID	ADDRESS
101	Tom Hardy	1993-07-23	9999999991	tom101@gmail.com	Chennai
102	Sam Joseph	1994-06-23	9999999992	sam102@gmail.com	Bangalore
103	Ben Issac	1993-08-25	9999999993	ben103@gmail.com	Bangalore
104	Kane Lewis	1993-10-23	9999999994	kane104@gmail.com	Pune
105	Ian Robert	1994-06-14	9999999995	ian105@gmail.com	Delhi
106	John Austin	1991-07-17	9999999996	john106@gmail.com	Indore

4. Reporting and Analytics (Using joining queries)

a) Write a query to retrieve the number of students enrolled in each course

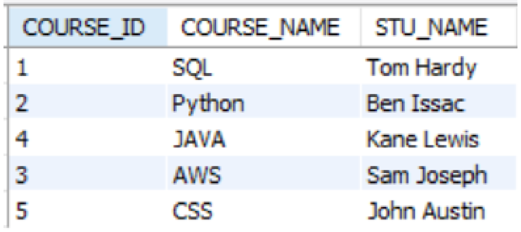
```
SELECT c.Course_Name,
COUNT(e.course_id) AS numberofStud
FROM CourseInfo c
JOIN EnrollmentInfo e ON c.course_id = e.course_ID
WHERE e.enroll_status = 'ENROLLED'
GROUP BY c.Course_Name;
```



Course_Name	numberofStuds
SQL	1
Python	1
JAVA	1
AWS	1
CSS	1

b) Write a query to retrieve the list of students enrolled in a specific course

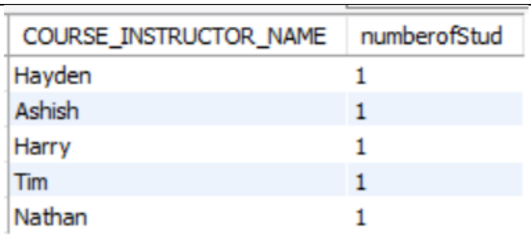
```
SELECT e.COURSE_ID, c.COURSE_NAME,
s.STU_NAME
FROM CourseInfo c
JOIN EnrollmentInfo e ON c.course_id = e.course_ID
JOIN StudentInfo s ON s.STU_ID = e.STU_ID
WHERE e.enroll_status = 'ENROLLED';
```



COURSE_ID	COURSE_NAME	STU_NAME
1	SQL	Tom Hardy
2	Python	Ben Issac
4	JAVA	Kane Lewis
3	AWS	Sam Joseph
5	CSS	John Austin

c) Write a query to retrieve the count of enrolled students for each instructor.

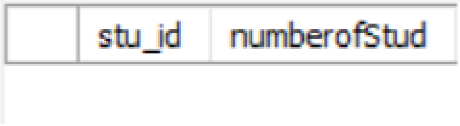
```
SELECT c.COURSE_INSTRUCTOR_NAME,
COUNT(e.STU_ID) AS numberofStud
FROM CourseInfo c
JOIN EnrollmentInfo e ON c.course_id = e.course_ID
WHERE e.enroll_status = 'ENROLLED'
GROUP BY c.COURSE_INSTRUCTOR_NAME;
```



COURSE_INSTRUCTOR_NAME	numberofStud
Hayden	1
Ashish	1
Harry	1
Tim	1
Nathan	1

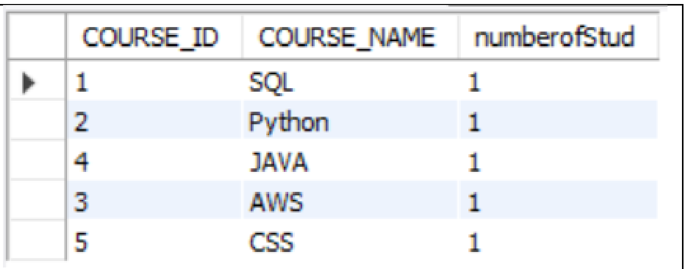
d) Write a query to retrieve the list of students who are enrolled in multiple courses

```
SELECT e.stu_id, COUNT(c.course_id) AS
numberofStud
FROM CourseInfo c
JOIN EnrollmentInfo e ON c.course_id = e.course_ID
WHERE e.enroll_status = 'ENROLLED'
GROUP BY e.stu_id
HAVING COUNT(c.course_id) > 1;
```



	stu_id	numberofStud

e) Write a query to retrieve the courses that have the highest number of enrolled students (arranging from highest to lowest)

*SELECT c.COURSE_ID, c.COURSE_NAME,
COUNT(e.STU_ID) AS numberofStud
FROM CourseInfo c
JOIN EnrollmentInfo e ON c.course_id =
e.course_ID
WHERE e.enroll_status = 'ENROLLED'
GROUP BY c.COURSE_ID, c.COURSE_NAME
ORDER BY COUNT(e.STU_ID) DESC;*
	
	COURSE_ID COURSE_NAME numberofStud
	1 SQL 1
	2 Python 1
	4 JAVA 1
	3 AWS 1
	5 CSS 1