

## Assignment 2: Student Record Management System

### Part A: Theory

Answer the following questions:

1. What is the difference between DATE and DATETIME?

ans -: 1) Date -: it can store only the year , month , day (yyyy-mm-dd)

it use when store the birth\_date .

Eg. ("2026-02-05")

2) Datetime -: it can store the date as well as the time include hour , minute , second

(yyyy-mm-dd hh-mm-ss)

it use when store the bank transaction .

Eg. ("2026-02-05-02-02-20")

2. Why should email or phone number fields often be marked as UNIQUE?

ans -: 1) it not the duplicate .

2) The number and email as the unique the not repeated use not allow because they unique values.

3. Can a table have multiple UNIQUE constraints? Explain

ans -: yes , every table as unique key

Eg. 1) Id

2) Email

4. What happens if you try to insert a NULL value into a NOT NULL column?

ans -: It gives error.

5. Why is proper data type selection important while designing tables?

ans -: 1) storing the values efficiently.

2) avoid the extra space .

Screenshots -:

## Part B: SQL Coding

Perform the following tasks:

1. Create a database named student\_db.

The screenshot shows a SQL script editor with the following code:

```
37 -- 1. Create a database named student_db.  
38 • create database student_db;  
39
```

Below the editor is the 'Output' pane, which is currently showing 'Action Output'. It contains a table with the following data:

| # | Time     | Action                     | Message           | Duration / Fetch |
|---|----------|----------------------------|-------------------|------------------|
| 1 | 22:41:17 | create database student_db | 1 row(s) affected | 0.031 sec        |

2. Show all databases .

The screenshot shows a SQL script editor with the following code:

```
43 -- 2. Show all databases and switch to student_db.  
44  
45 • show databases;
```

Below the editor is the 'Result Grid' showing a list of databases:

| Database           |
|--------------------|
| performance_schema |
| student_course_db  |
| student_db         |
| sys                |

Below the result grid is the 'Action Output' pane, which contains a table with the following data:

| # | Time     | Action                     | Message            | Duration / Fetch      |
|---|----------|----------------------------|--------------------|-----------------------|
| 1 | 22:41:17 | create database student_db | 1 row(s) affected  | 0.031 sec             |
| 2 | 22:43:21 | show databases             | 10 row(s) returned | 0.000 sec / 0.000 sec |

3. switch to student\_db.

The screenshot shows a SQL script editor with the following code:

```
47  
48 -- switch to student_db  
49  
50 • use student_db;  
51  
52
```

Below the editor is the 'Action Output' pane, which contains a table with the following data:

| # | Time     | Action   | Message   | Duration / Fetch      |
|---|----------|--|---|-----------------------|
| 1 | 22:41:17 | create database student_db   | 1 row(s) affected   | 0.031 sec             |
| 2 | 22:43:21 | show databases   | 10 row(s) returned  | 0.000 sec / 0.000 sec |
| 3 | 22:48:07 | create table students(student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHAR(50)) | Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCH... | 0.032 sec             |
| 4 | 22:49:17 | use student_db   | 0 row(s) affected   | 0.031 sec             |

#### 4. Create a table named students with the following columns:

```
53
54 -- 4. Create a table named students with the following columns:
55
56 • create table students(
57     student_id INT PRIMARY KEY,
58     full_name VARCHAR(50) NOT NULL,
59     email VARCHAR(100) UNIQUE,
60     phone_number BIGINT,
61     course VARCHAR(30),
62     date_of_birth DATE,
63     registration_date DATETIME
64 );
65
66
67
```

Context Help Snippets

Output

| # | Time     | Action  | Message   | Duration / Fetch      |
|---|----------|---|---|-----------------------|
| 1 | 22:41:17 | create database student_db  | 1 row(s) affected   | 0.031 sec             |
| 2 | 22:43:21 | show databases  | 10 row(s) returned  | 0.000 sec / 0.000 sec |
| 3 | 22:48:07 | create table students(student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHAR(100) UNIQUE, phone_number BIGINT, course VARCHAR(30), date_of_birth DATE, registration_date DATETIME) | Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCH... | 0.032 sec             |
| 4 | 22:49:17 | use student_db  | 0 row(s) affected   | 0.031 sec             |
| 5 | 22:50:36 | create table students(student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHAR(100) UNIQUE, phone_number BIGINT, course VARCHAR(30), date_of_birth DATE, registration_date DATETIME) | 0 row(s) affected   | 0.109 sec             |

#### 4. Insert at least 5 student records.

```
67
68 -- 4. Insert at least 5 student records.
69
70 • insert into students values
71     (1,"Swapnil Pisal","swapnilpisal2004@gmail.com",9370172934,"Data Science","2004-10-14","2026-01-01"),
72     (2,"Vija Jadhav","vijay321@gmail.com",9874563210,"Machine Learning","2003-11-12","2025-01-21"),
73     (3,"Avinash Veer","avinash2323@gmail.com",9635287410,"Full Stack","2004-02-15","2026-02-01"),
74     (4,"Suraj neevase","suraj56@gmail.com",9785462301,"Machine Learning","2005-10-04","2026-01-23"),
75     (5,"Tushar Jadhav","tushar4545@gmail.com",9635421808,"Data Science","2004-10-23","2026-12-21");
76
```

Context Help Snippets

Output

| # | Time     | Action   | Message   | Duration / Fetch      |
|---|----------|--|---|-----------------------|
| 1 | 22:41:17 | create database student_db   | 1 row(s) affected   | 0.031 sec             |
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| 4 | 22:49:17 | use student_db   | 0 row(s) affected   | 0.031 sec             |
| 5 | 22:50:36 | create table students(student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHAR(100) UNIQUE, phone_number BIGINT, course VARCHAR(30), date_of_birth DATE, registration_date DATETIME)  | 0 row(s) affected   | 0.109 sec             |
| 6 | 23:00:39 | insert into students values (1,"Swapnil Pisal","swapnilpisal2004@gmail.com",9370172934,"Data Science","2004-10-14","2026-01-01"),(2,"Vija Jadhav","vijay321@gmail.com",9874563210,"Machine Learning","2003-11-12","2025-01-21"),(3,"Avinash Veer","avinash2323@gmail.com",9635287410,"Full Stack","2004-02-15","2026-02-01"),(4,"Suraj neevase","suraj56@gmail.com",9785462301,"Machine Learning","2005-10-04","2026-01-23"),(5,"Tushar Jadhav","tushar4545@gmail.com",9635421808,"Data Science","2004-10-23","2026-12-21"); | 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0  | 0.016 sec             |

#### 5. Display all records from the students table.

```
78
79 -- 5. Display all records from the students table.
80
81 • select * from students;
```

Result Grid

| student_id | full_name     | email                      | phone_number | course           | date_of_birth | registration_date   |
|------------|---------------|----------------------------|--------------|------------------|---------------|---------------------|
| 1          | Swapnil Pisal | swapnilpisal2004@gmail.com | 9370172934   | Data Science     | 2004-10-14    | 2026-01-01 00:00:00 |
| 2          | Vija Jadhav   | vijay321@gmail.com         | 9874563210   | Machine Learning | 2003-11-12    | 2025-01-21 00:00:00 |
| 3          | Avinash Veer  | avinash2323@gmail.com      | 9635287410   | Full Stack       | 2004-02-15    | 2026-02-01 00:00:00 |
| 4          | Suraj neevase | suraj56@gmail.com          | 9785462301   | Machine Learning | 2005-10-04    | 2026-01-23 00:00:00 |
| 5          | Tushar Jadhav | tushar4545@gmail.com       | 9635421808   | Data Science     | 2004-10-23    | 2026-12-21 00:00:00 |

students 2 x

Output

| # | Time     | Action   | Message  | Duration / Fetch      |
|---|----------|--|--|-----------------------|
| 2 | 22:43:21 | show databases   | 10 row(s) returned   | 0.000 sec / 0.000 sec |
| 3 | 22:48:07 | create table students(student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHAR(100) UNIQUE, phone_number BIGINT, course VARCHAR(30), date_of_birth DATE, registration_date DATETIME)  | Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SC... | 0.032 sec             |
| 4 | 22:49:17 | use student_db   | 0 row(s) affected  | 0.031 sec             |
| 5 | 22:50:36 | create table students(student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHAR(100) UNIQUE, phone_number BIGINT, course VARCHAR(30), date_of_birth DATE, registration_date DATETIME)  | 0 row(s) affected  | 0.109 sec             |
| 6 | 23:00:39 | insert into students values (1,"Swapnil Pisal","swapnilpisal2004@gmail.com",9370172934,"Data Science","2004-10-14","2026-01-01"),(2,"Vija Jadhav","vijay321@gmail.com",9874563210,"Machine Learning","2003-11-12","2025-01-21"),(3,"Avinash Veer","avinash2323@gmail.com",9635287410,"Full Stack","2004-02-15","2026-02-01"),(4,"Suraj neevase","suraj56@gmail.com",9785462301,"Machine Learning","2005-10-04","2026-01-23"),(5,"Tushar Jadhav","tushar4545@gmail.com",9635421808,"Data Science","2004-10-23","2026-12-21"); | 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0   | 0.016 sec             |
| 7 | 23:02:07 | select * from students LIMIT 0, 1000   | 5 row(s) returned  | 0.000 sec / 0.000 sec |

## 6. Verify the table structure using DESCRIBE.

```
84
85 -- 6. Verify the table structure using DESCRIBE.
86
87 • describe table students;
88
```

Result Grid

| id | select_type | table    | partitions | type | possible_keys | key  | key_len | ref  | rows | filtered | Extra |
|----|-------------|----------|------------|------|---------------|------|---------|------|------|----------|-------|
| 1  | SIMPLE      | students | none       | ALL  | none          | none | none    | none | 5    | 100.00   | none  |

Result 3 x Read Only Context Help Snippets

Output

| # | Time     | Action   | Message  | Duration / Fetch      |
|---|----------|--|--|-----------------------|
| 3 | 22:48:07 | create table students( student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHA...             | Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SC... | 0.032 sec             |
| 4 | 22:49:17 | use student_db   | 0 row(s) affected  | 0.031 sec             |
| 5 | 22:50:36 | create table students( student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHA...             | 0 row(s) affected  | 0.109 sec             |
| 6 | 23:00:39 | insert into students values (1,"Swapnil Pisal","swapnilpisal2004@gmail.com","9370172934","Data Science","20... | 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0   | 0.016 sec             |
| 7 | 23:02:07 | select * from students LIMIT 0, 1000   | 5 row(s) returned  | 0.000 sec / 0.000 sec |
| 8 | 23:04:54 | describe table students  | 1 row(s) returned  | 0.016 sec / 0.000 sec |

## 7. Drop the database student\_db.

```
90 -- 7. Drop the database student_db.
91
92 • drop database student_db;
93
94
95
```

Context Help Snippets

Output

| # | Time     | Action   | Message  | Duration / Fetch      |
|---|----------|--|--|-----------------------|
| 4 | 22:49:17 | use student_db   | 0 row(s) affected                                      | 0.031 sec             |
| 5 | 22:50:36 | create table students( student_id INT PRIMARY KEY, full_name VARCHAR(50) NOT NULL, email VARCHA...             | 0 row(s) affected                                      | 0.109 sec             |
| 6 | 23:00:39 | insert into students values (1,"Swapnil Pisal","swapnilpisal2004@gmail.com","9370172934","Data Science","20... | 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0 | 0.016 sec             |
| 7 | 23:02:07 | select * from students LIMIT 0, 1000   | 5 row(s) returned                                      | 0.000 sec / 0.000 sec |
| 8 | 23:04:54 | describe table students  | 1 row(s) returned                                      | 0.016 sec / 0.000 sec |
| 9 | 23:06:42 | drop database student_db   | 1 row(s) affected                                      | 0.032 sec             |