

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 the MySQL Workbench interface. In the SQL editor, line 38 contains the command `create database student_db;`. The output pane shows a single row affected by the command. The message says "1 row(s) affected" and the duration is "0.031 sec".

#	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 the MySQL Workbench interface. In the SQL editor, line 45 contains the command `show databases;`. The results grid displays a list of databases: performance_schema, student_course_db, student_db, swapnil, and sys. The output pane shows two rows: one for creating the database and one for running the show databases command. Both rows have a duration of "0.031 sec".

#	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 the MySQL Workbench interface. In the SQL editor, line 50 contains the command `use student_db;`. The output pane shows four rows: the creation of the database, the show databases command, the creation of the students table (which failed due to no default database selected), and the use of the student_db database. The failed table creation has an error code of 1046 and a message about no default database selected. The use command has a duration of "0.031 sec".

#	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(..	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

```

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 nevase","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

```

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
6	23:00:39	insert into students values (1,"Swapnil Pisal","swapnilpisal2004@gmail.com",9370172934,"Data Science","2004-10-14","2026-01-01")	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;

```

Output:

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 nevase	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

Output:

#	Time	Action	Message	Duration / Fetch
1	22:43:21	show databases	10 row(s) returned	0.000 sec / 0.000 sec
2	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
3	22:49:17	use student_db	0 row(s) affected	0.031 sec
4	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
5	23:00:39	insert into students values (1,"Swapnil Pisal","swapnilpisal2004@gmail.com",9370172934,"Data Science","2004-10-14","2026-01-01")	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.016 sec
6	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 | Filter Rows: Export: Wrap Cell Content: Result Grid

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	students	NULL	ALL	NULL	NULL	NULL	NULL	5	100.00	NULL

Result 3 x Read Only Context Help Snippets

Action 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 VARCHAR(50) NOT NULL, address VARCHAR(100), city VARCHAR(50), state VARCHAR(50), zip_code INT, phone_number INT, birth_date DATE, gender CHAR(1), created_at TIMESTAMP, updated_at TIMESTAMP)	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(50) NOT NULL, address VARCHAR(100), city VARCHAR(50), state VARCHAR(50), zip_code INT, phone_number INT, birth_date DATE, gender CHAR(1), created_at TIMESTAMP, updated_at TIMESTAMP)	0 row(s) affected	0.109 sec
6	23:00:39	insert into students values (1,"Swapnil Patel","swapnilp1204@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.

```
97
98 -- 7. Drop the database student_db.
99
100 • drop database student_db;
101
102
```

Context Help Snippets

Action 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 VARCHAR(50) NOT NULL, address VARCHAR(100), city VARCHAR(50), state VARCHAR(50), zip_code INT, phone_number INT, birth_date DATE, gender CHAR(1), created_at TIMESTAMP, updated_at TIMESTAMP)	0 row(s) affected	0.109 sec
6	23:00:39	insert into students values (1,"Swapnil Patel","swapnilp1204@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