

## SET 1

Q.) Consider a table called Students which contains student\_id, first\_name, last\_name, department, and age as Columns. Create a simple select stored procedure that will select and display student records based on a specified department.

Solution :-

```
CREATE TABLE Students (student_id INT AUTO_INCREMENT PRIMARY KEY, first_name VARCHAR(50), last_name VARCHAR(50), department VARCHAR(50), age INT);
```

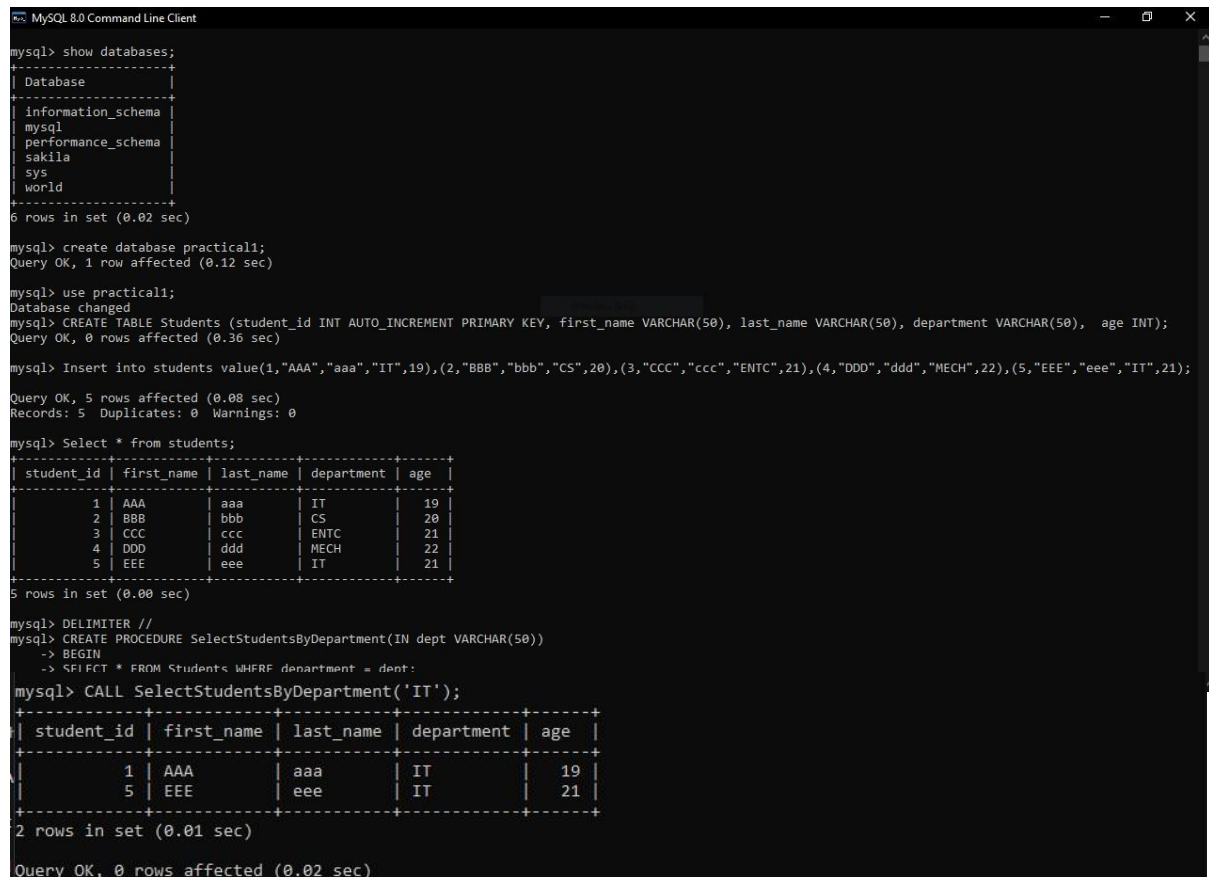
Insert into students

```
value(1,"AAA","aaa","IT",19),(2,"BBB","bbb","CS",20),(3,"CCC","ccc","ENTC",21),(4,"DDD","ddd","MECH",22),(5,"EEE","eee","IT",21);
```

Select \* from students;

DELIMITER //

```
CREATE PROCEDURE SelectStudentsByDepartment(IN dept VARCHAR(50)) BEGIN
SELECT * FROM Students WHERE department = dept; END //
CALL SelectStudentsByDepartment('IT');
```



```
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
6 rows in set (0.02 sec)

mysql> create database practical1;
Query OK, 1 row affected (0.12 sec)

mysql> use practical1;
Database changed
mysql> CREATE TABLE Students (student_id INT AUTO_INCREMENT PRIMARY KEY, first_name VARCHAR(50), last_name VARCHAR(50), department VARCHAR(50), age INT);
Query OK, 0 rows affected (0.36 sec)

mysql> Insert into students value(1,"AAA","aaa","IT",19),(2,"BBB","bbb","CS",20),(3,"CCC","ccc","ENTC",21),(4,"DDD","ddd","MECH",22),(5,"EEE","eee","IT",21);
Query OK, 5 rows affected (0.08 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> Select * from students;
+-----+-----+-----+-----+-----+
| student_id | first_name | last_name | department | age |
+-----+-----+-----+-----+-----+
| 1 | AAA | aaa | IT | 19 |
| 2 | BBB | bbb | CS | 20 |
| 3 | CCC | ccc | ENTC | 21 |
| 4 | DDD | ddd | MECH | 22 |
| 5 | EEE | eee | IT | 21 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> DELIMITER //
mysql> CREATE PROCEDURE SelectStudentsByDepartment(IN dept VARCHAR(50))
-> BEGIN
-> SELECT * FROM Students WHERE department = dept;
mysql> CALL SelectStudentsByDepartment('IT');
+-----+-----+-----+-----+-----+
| student_id | first_name | last_name | department | age |
+-----+-----+-----+-----+-----+
| 1 | AAA | aaa | IT | 19 |
| 5 | EEE | eee | IT | 21 |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)
```

**OR**

**Q.) Create database, create table, give any 3 example query for arithmetic operator, any 3 boolean sql query, any three pattern matching operator. Demonstrate the difference between truncate table and drop table.**

**Solution :-**

**-- Step 1: Create a database**

```
CREATE DATABASE IF NOT EXISTS my_database;  
USE my_database;
```

**-- Step 2: Create a table**

```
CREATE TABLE IF NOT EXISTS my_table ( id  
INT,  
name VARCHAR(50),  
age INT, email  
VARCHAR(100)  
);
```

**-- Step 3: Insert some sample data**

```
INSERT INTO my_table (name, age, email) VALUES ('John', 25, 'john@example.com');  
INSERT INTO my_table (name, age, email) VALUES ('Alice', 30, 'alice@example.com');  
INSERT INTO my_table (name, age, email) VALUES ('Bob', 28, 'bob@example.com');
```

**-- Step 4: Alter the table to add a new column**

```
ALTER TABLE my_table ADD COLUMN address VARCHAR(200);
```

**-- Step 5: Alter the table to modify a column**

```
ALTER TABLE my_table MODIFY COLUMN name VARCHAR(100);
```

**-- Step 6: Alter the table to drop a column ALTER TABLE my\_table DROP COLUMN email;**

**-- Step 7: Rename the table**

```
RENAME TABLE my_table TO new_table;
```

-- Step 8: Rename the database

**ALTER DATABASE my\_database RENAME TO new\_database;**

-- Step 9: Set primary key after table creation

**ALTER TABLE new\_table MODIFY COLUMN id INT AUTO\_INCREMENT PRIMARY KEY;**

```
MySQL 8.0 Command Line Client

mysql> -- Step 1: Create a database
mysql> CREATE DATABASE IF NOT EXISTS my_database;
Query OK, 1 row affected, 1 warning (0.04 sec)

mysql> USE my_database;
Database changed
mysql>
mysql> -- Step 2: Create a table
mysql> CREATE TABLE IF NOT EXISTS my_table (
  ->   id INT,
  ->   name VARCHAR(50),
  ->   age INT,
  ->   email VARCHAR(100)
  -> );
Query OK, 0 rows affected (0.41 sec)

mysql>
mysql> -- Step 3: Insert some sample data
mysql> INSERT INTO my_table (name, age, email) VALUES ('John', 25, 'john@example.com');
Query OK, 1 row affected (0.09 sec)

mysql> INSERT INTO my_table (name, age, email) VALUES ('Alice', 30, 'alice@example.com');
Query OK, 1 row affected (0.18 sec)

mysql> INSERT INTO my_table (name, age, email) VALUES ('Bob', 28, 'bob@example.com');
Query OK, 1 row affected (0.28 sec)

mysql>
mysql> -- Step 4: Alter the table to add a new column
mysql> ALTER TABLE my_table ADD COLUMN address VARCHAR(200);
Query OK, 0 rows affected (0.73 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
mysql> -- Step 5: Alter the table to modify a column
mysql> ALTER TABLE my_table MODIFY COLUMN name VARCHAR(100);
Query OK, 3 rows affected (0.87 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql>
mysql> -- Step 6: Alter the table to drop a column
mysql> ALTER TABLE my_table DROP COLUMN email;
Query OK, 0 rows affected (0.28 sec)
```

```
MySQL 8.0 Command Line Client

mysql>
mysql> -- Step 7: Rename the table
mysql> RENAME TABLE my_table TO new_table;
Query OK, 0 rows affected (0.29 sec)

mysql>
mysql> -- Step 8: Rename the database
mysql> ALTER DATABASE my_database RENAME TO new_database;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'RENAME TO new_database' at line 1
mysql>
mysql> -- Step 9: Set primary key after table creation
mysql> ALTER TABLE new_table MODIFY COLUMN id INT AUTO_INCREMENT PRIMARY KEY;
Query OK, 3 rows affected (0.99 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql>
mysql> select * from new_table;
+----+-----+-----+-----+
| id | name | age | address |
+----+-----+-----+-----+
| 1  | John | 25  | NULL    |
| 2  | Alice| 30  | NULL    |
| 3  | Bob  | 28  | NULL    |
+----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| my_database        |
| mysql              |
| performance_schema |
| practical1         |
| sakila              |
| sys                |
| world               |
+-----+
8 rows in set (0.00 sec)
```

## SET 8

**Q.) Write a SQL statement**

- to add a primary key for a combination of columns `location_id` and `country_id`.

**Solution :**

**create table** locations(location\_id int,street\_address varchar(40),pin\_code varchar(12),city varchar(30),state varchar(25),country\_id varchar(2));

**ALTER TABLE** locations **ADD PRIMARY KEY**(location\_id,country\_id); **show columns from** locations;

- to drop the existing primary from the table locations on a combination of columns `location_id` and `country_id`.

**Solution :**

**ALTER TABLE** locations **DROP PRIMARY KEY**; **show columns from** locations;

- c) to add a foreign key on job id column of job\_history table referencing to the primary key job id of jobs table

**Solution :-**

**ALTER TABLE jobs ADD PRIMARY KEY(job\_id); alter table job\_history add foreign key(job\_id) references jobs(job\_id); show columns from job\_history;**

### **SET 9**

**Write a SQL statement to change salary of employee to 8000 whose ID is 105, if the existing salary is less than 5000,**

**Solution :- create table employee(emp\_id int , first\_name varchar(25), last\_name varchar(25), salary int ,job\_title varchar(40)); insert into employee values(105 , "DIPALI" , "KHAIRNAR" , 4000 , 'CEO' ); update employee set salary = 8000 where emp\_id = 105 and salary < 5000;\ select \* from employee;**

**B) change job title of employee which ID is 118, to SH\_CLERK if the employee belongs to department, which ID is 30 and the existing job title does not start with SH.**

**Solution :- create table employee(employee\_id int,first\_name varchar(25), last\_name varchar(25),salary int ,job\_id varchar(40) , department\_id int); insert into employee values(118 , "DIPALI" , "KHAIRNAR" , 4000 , 'jn\_clerk' ,30); select \* from employee; update employee set job\_id = "SH\_CLERK" WHERE employee\_id = 118 AND department\_id = 30 AND NOT job\_id LIKE 'SH%'; select \* from employee;**

**SET 17 : (\*\*)**

Display name, credit\_rating, sales\_rep\_id from S\_customer table of those customer who either satisfies the condition that credit\_rating is greater than 5 out of 10 and sales\_rep\_id is equal to 4232. Demonstrate pattern matching and logical operator.

**Solution :-**

```
CREATE TABLE S_customer ( name VARCHAR(50), credit_rating INT, sales_rep_id INT);
INSERT INTO S_customer VALUES('Arun', 7, 4231), ('Atharva', 6, 4231);
SELECT name, credit_rating, sales_rep_id FROM S_customer
WHERE (credit_rating > 5 AND sales_rep_id = 4232);
```

**SET 18 : (\*\*)**

Display the id, name and phone number of the customer

Whose id falls in the range 303 to 306

Whose id is greater than 300 and customer belongs to Pune display the id, names of employee whose names contains fourth and fifth letters are 'sh' followed by anything and also belongs to pune city.

**Solution :-**

```
CREATE TABLE customers ( id INT PRIMARY KEY,
name VARCHAR(100), phone_number
VARCHAR(15), city VARCHAR(50)
);
```

```
CREATE TABLE employees ( id INT PRIMARY KEY, name
VARCHAR(100), city VARCHAR(50)
);
```

```
INSERT INTO customers (id, name, phone_number, city) VALUES
(301, 'John Doe', '123-456-7890', 'Pune'),
(302, 'Jane Smith', '987-654-3210', 'Mumbai'),
(303, 'Alice Wonderland', '555-123-4567', 'Pune'),
(304, 'Bob Builder', '777-888-9999', 'Pune'),
(305, 'Charlie Chaplin', '444-555-6666', 'Pune'),
```

**(306, 'David Beckham', '111-222-3333', 'Delhi');**

**INSERT INTO employees (id, name, city) VALUES**

**(101, 'Ashley Johnson', 'Pune'), (102, 'Michelle Sharma', 'Mumbai'), (103, 'Joshua Smith', 'Pune'),**

**(104, 'Nisha Shah', 'Pune'),**

**(105, 'Rajesh Patel', 'Mumbai'),**

**(106, 'Rakesh Kumar', 'Pune');**

**SELECT \* FROM customers WHERE id BETWEEN 303 AND 306;**

**SELECT \* FROM customers WHERE id > 300 AND city = 'Pune';**

**SELECT \* FROM employees**

**WHERE name LIKE '\_sh%' AND city = 'Pune';**

**SET 16<sup>TH</sup> AND 19<sup>TH</sup> (\*\*)**

**Step 1 = Create database,**

**CREATE DATABASE IF NOT EXISTS MyDatabase;**

**Step 2 = Use database,**

**USE MyDatabase;**

**Step 3 = Create Table,**

**CREATE TABLE IF NOT EXISTS Employees ( employee\_id INT PRIMARY KEY,  
employee\_name VARCHAR(100) NOT NULL, department VARCHAR(100), salary  
DECIMAL(10, 2));**

**Step 4 = Insert Values,**

**INSERT INTO Employees (employee\_id, employee\_name, department, salary)VALUES (1,  
'John Doe', 'IT', 50000.00),(2, 'Jane Smith', 'HR', 45000.00),(3, 'Alice Johnson', 'Finance',  
55000.00);**

**Step 5 = Showing Table, select**

**\* from Employees;**

**step 6 = Adding not null constraint,**

**ALTER TABLE Employees MODIFY COLUMN employee\_name VARCHAR(100) NOT NULL;**

**Step 7 = Insert Value into table,**

**INSERT INTO Employees (employee\_id, employee\_name, department, salary)VALUES (4, null, 'IT', 50000.00);**

**( NOTE : It shows an error means part a is completed )**

**Step 8 = Remove not null constraint,**

**ALTER TABLE Employees MODIFY COLUMN employee\_name VARCHAR(100) NULL;**

**Step 9 = Insert value into table,**

**INSERT INTO Employees (employee\_id, employee\_name, department, salary)VALUES (4, null, 'IT', 50000.00);**

**Step 10 = Showing table, select**

**\* from Employees;**

**step 11 = Adding a new column,**

**ALTER TABLE Employees ADD COLUMN email VARCHAR(100);**

**Step 12 = showing table, select \* from Employees;**



```
Command Prompt - mysql -u root -p

+-----+-----+-----+-----+
| employee_id | employee_name | department | salary |
+-----+-----+-----+-----+
| 1 | John Doe | IT | 50000.00 |
| 2 | Jane Smith | HR | 45000.00 |
| 3 | Alice Johnson | Finance | 55000.00 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> ALTER TABLE Employees MODIFY COLUMN employee_name VARCHAR(100) NOT NULL;
ERROR 1364 (HY000): Field 'employee_name' doesn't have a default value
mysql> ALTER TABLE Employees MODIFY COLUMN employee_name VARCHAR(100) NOT NULL;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'COLUMN employ
ee_name VARCHAR(100) NOT NULL' at line 1
mysql> ALTER TABLE Employees MODIFY COLUMN employee_name VARCHAR(100) NULL;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Employees (employee_id, department, salary) VALUES (1, 'IT', 50000.00);
mysql> INSERT INTO Employees (employee_id, employee_name, department, salary) VALUES (4, null, 'IT', 50000.00);
ERROR 1048 (23000): Column 'employee_name' cannot be null
mysql> ALTER TABLE Employees MODIFY COLUMN employee_name VARCHAR(100) NULL;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'COLUMN employ
ee_name VARCHAR(100) NULL' at line 1
mysql> ALTER TABLE Employees MODIFY COLUMN employee_name VARCHAR(100) NULL;
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Employees (employee_id, employee_name, department, salary) VALUES (4, null, 'IT', 50000.00);
Query OK, 1 row affected (0.00 sec)

mysql> select * from Employees;
+-----+-----+-----+-----+
| employee_id | employee_name | department | salary |
+-----+-----+-----+-----+
| 1 | John Doe | IT | 50000.00 |
| 2 | Jane Smith | HR | 45000.00 |
| 3 | Alice Johnson | Finance | 55000.00 |
| 4 | NULL | IT | 50000.00 |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> ALTER TABLE Employees ADD COLUMN email VARCHAR(100);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'COLUMN email
VARCHAR(100)' at line 1
mysql> ALTER TABLE Employees ADD COLUMN email VARCHAR(100);
```

```
Command Prompt - mysql -u root -p

+-----+-----+-----+-----+
| 1 | John Doe | IT | 50000.00 |
| 2 | Jane Smith | HR | 45000.00 |
| 3 | Alice Johnson | Finance | 55000.00 |
| 4 | NULL | IT | 50000.00 |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> ALTER TABLE Employees ADD COLUMN email VARCHAR(100);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'COLUMN email
VARCHAR(100)' at line 1
mysql> ALTER TABLE Employees ADD COLUMN email VARCHAR(100);
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from Employees;
+-----+-----+-----+-----+-----+
| employee_id | employee_name | department | salary | email |
+-----+-----+-----+-----+-----+
| 1 | John Doe | IT | 50000.00 | NULL |
| 2 | Jane Smith | HR | 45000.00 | NULL |
| 3 | Alice Johnson | Finance | 55000.00 | NULL |
| 4 | NULL | IT | 50000.00 | NULL |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

## Set : 20 (OR WITH ERRORS)

mysql> create table EmployeeDetails

- > (
- > EmpId int primary key,
- > FullName varchar(50),
- > ManagerId int,
- > DateOfJoining date,
- > City varchar(20)
- > );

Query OK, 0 rows affected (0.20 sec)

mysql> insert into EmployeeDetails values ->

- (121,'John Snow',321,'2019-01-31','Toronto'),
- > (321,'Walter White',986,'2020-01-30','California'),
- > (421,'Kuldeep Rana',876,'2021-11-27','New Delhi');

Query OK, 3 rows affected (0.05 sec)  
Records: 3 Duplicates: 0 Warnings: 0

🚦 Reference Table to solve following SQL queries :-

mysql> select \* from EmployeeDetails;

EmpId	FullName	ManagerId	DateOfJoining	City
121	John Snow	321	2019-01-31	Toronto
321	Walter White	986	2020-01-30	California
421	Kuldeep Rana	876	2021-11-27	New Delhi

3 rows in set (0.01 sec)

A) Write an SQL query to fetch the EmpId and FullName of all the employees working under the Manager Id – '986'.

mysql> select EmpId,FullName from EmployeeDetails where ManagerId = '986';

EmpId	FullName
321	Walter White

1 row in set (0.06 sec)

B) write an sql query to fetch the employees whose name begins with any two characters, followed by text 'hn' and ends with any sequence of characters. mysql>

select \* from EmployeeDetails

-> where FullName like 'hn%';

Empty set (0.05 sec)

C) write an sql query to fetch the employees full names and replace the space with '-' mysql> select replace(FullName, ' ','-') as modified\_full\_name

-> from EmployeeDetails;

modified_full_name
John-Snow
Walter-White
Kuldeep-Rana

3 rows in set (0.01 sec)

**OR**

```
mysql> DELIMITER //  
mysql>  
mysql> CREATE PROCEDURE AddTwoNumbers (IN num1 INT, IN num2 INT, OUT  
result INT)  -> BEGIN  
    -> SET result = num1 + num2;  
    -> END //  
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> mysql>  
DELIMITER ;  
mysql> CALL AddTwoNumbers(10, 5, @sum);  
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> SELECT @sum AS SumResult;  
+-----+  
| SumResult |  
+-----+  
|      15 |  
+-----+  
1 row in set (0.00 sec)
```









