

## WEEK 1:

### Session 2:

```
mysql> USE University1_db;
Database changed
mysql> CREATE TABLE Student (
    ->     vtu_no VARCHAR(20) PRIMARY KEY,
    ->     name VARCHAR(50),
    ->     email VARCHAR(50),
    ->     phone VARCHAR(15),
    ->     department VARCHAR(30)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> CREATE TABLE Course (
    ->     course_code VARCHAR(10) PRIMARY KEY,
    ->     course_name VARCHAR(50),
    ->     faculty_id VARCHAR(20),
    ->     student_vtu_no VARCHAR(20),
    ->     faculty_email VARCHAR(50),
    ->     FOREIGN KEY (student_vtu_no) REFERENCES Student(vtu_no)
    -> );
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> INSERT INTO Student VALUES
-> ('VTU101', 'Amit', 'amit@gmail.com', '9876543210', 'CSE'),
-> ('VTU102', 'Riya', 'riya@gmail.com', '9876543211', 'ISE'),
-> ('VTU103', 'Rahul', 'rahul@gmail.com', '9876543212', 'CSE'),
-> ('VTU104', 'Sneha', 'sneha@gmail.com', '9876543213', 'ECE'),
-> ('VTU105', 'Arjun', 'arjun@gmail.com', '9876543214', 'CSE');
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Course VALUES
-> ('CS101', 'DBMS', 'FAC01', 'VTU101', 'fac01@vtu.edu'),
-> ('CS102', 'DSA', 'FAC02', 'VTU102', 'fac02@vtu.edu'),
-> ('CS103', 'OS', 'FAC01', 'VTU103', 'fac01@vtu.edu'),
-> ('EC101', 'Signals', 'FAC03', 'VTU104', 'fac03@vtu.edu'),
-> ('CS104', 'Java', 'FAC04', 'VTU105', 'fac04@vtu.edu');
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

### SESSION 3:

```
mysql> SELECT * FROM Student;
+-----+-----+-----+-----+-----+
| vtu_no | name   | email      | phone    | department |
+-----+-----+-----+-----+-----+
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
| VTU102 | Riya   | riya@gmail.com | 9876543211 | ISE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU104 | Sneha | sneha@gmail.com | 9876543213 | ECE
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> SELECT name, department FROM Student;
+-----+-----+
| name   | department |
+-----+-----+
| Amit   | CSE
| Riya   | ISE
| Rahul  | CSE
| Sneha | ECE
| Arjun  | CSE
+-----+-----+
5 rows in set (0.00 sec)
```

```

mysql> SELECT * FROM Student WHERE department = 'CSE';
+-----+-----+-----+-----+-----+
| vtu_no | name  | email   | phone   | department |
+-----+-----+-----+-----+-----+
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM Student WHERE vtu_no LIKE 'VTU10%';
+-----+-----+-----+-----+-----+
| vtu_no | name  | email   | phone   | department |
+-----+-----+-----+-----+-----+
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
| VTU102 | Riya   | riya@gmail.com | 9876543211 | ISE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU104 | Sneha  | sneha@gmail.com | 9876543213 | ECE
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> SELECT * FROM Student;
+-----+-----+-----+-----+-----+
| vtu_no | name  | email   | phone   | department |
+-----+-----+-----+-----+-----+
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
| VTU102 | Riya   | riya@gmail.com | 9876543211 | ISE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU104 | Sneha  | sneha@gmail.com | 9876543213 | ECE
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

```

```

mysql> SELECT * FROM Student ORDER BY vtu_no ASC;
+-----+-----+-----+-----+-----+
| vtu_no | name  | email   | phone   | department |
+-----+-----+-----+-----+-----+
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
| VTU102 | Riya   | riya@gmail.com | 9876543211 | ISE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU104 | Sneha  | sneha@gmail.com | 9876543213 | ECE
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> SELECT * FROM Student ORDER BY vtu_no DESC;
+-----+-----+-----+-----+-----+
| vtu_no | name  | email   | phone   | department |
+-----+-----+-----+-----+-----+
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
| VTU104 | Sneha  | sneha@gmail.com | 9876543213 | ECE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU102 | Riya   | riya@gmail.com | 9876543211 | ISE
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> SELECT * FROM Student WHERE department = 'CSE';
+-----+-----+-----+-----+-----+
| vtu_no | name  | email   | phone   | department |
+-----+-----+-----+-----+-----+
| VTU101 | Amit   | amit@gmail.com | 9876543210 | CSE
| VTU103 | Rahul  | rahul@gmail.com | 9876543212 | CSE
| VTU105 | Arjun  | arjun@gmail.com | 9876543214 | CSE
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

## SESSION 4:

```
mysql> SELECT * FROM Course;
+-----+-----+-----+-----+-----+
| course_code | course_name | faculty_id | student_vtu_no | faculty_email |
+-----+-----+-----+-----+-----+
| CS101 | DBMS | FAC01 | VTU101 | fac01@vtu.edu |
| CS102 | DSA | FAC02 | VTU102 | fac02@vtu.edu |
| CS103 | OS | FAC01 | VTU103 | fac01@vtu.edu |
| CS104 | Java | FAC04 | VTU105 | fac04@vtu.edu |
| EC101 | Signals | FAC03 | VTU104 | fac03@vtu.edu |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
mysql> ^C
mysql> SELECT COUNT(*) AS total_students FROM Student;
+-----+
| total_students |
+-----+
|      5 |
+-----+
1 row in set (0.00 sec)

mysql> SELECT COUNT(*) AS cse_students FROM Student WHERE department = 'CSE';
+-----+
| cse_students |
+-----+
|      3 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT
    ->     s.vtu_no,
    ->     s.name,
    ->     c.course_name,
    ->     c.faculty_id,
    ->     c.faculty_email
    -> FROM Student s
    -> JOIN Course c
    -> ON s.vtu_no = c.student_vtu_no;
+-----+-----+-----+-----+-----+
| vtu_no | name | course_name | faculty_id | faculty_email |
+-----+-----+-----+-----+-----+
| VTU101 | Amit | DBMS | FAC01 | fac01@vtu.edu |
| VTU102 | Riya | DSA | FAC02 | fac02@vtu.edu |
| VTU103 | Rahul | OS | FAC01 | fac01@vtu.edu |
| VTU104 | Sneha | Signals | FAC03 | fac03@vtu.edu |
| VTU105 | Arjun | Java | FAC04 | fac04@vtu.edu |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```

mysql> SELECT course_name, COUNT(student_vtu_no) AS student_count
-> FROM Course
-> GROUP BY course_name;
+-----+-----+
| course_name | student_count |
+-----+-----+
| DBMS        |          1 |
| DSA         |          1 |
| OS          |          1 |
| Java         |          1 |
| Signals      |          1 |
+-----+-----+
5 rows in set (0.00 sec)

```

```

mysql> CREATE TABLE Faculty_Courses (
->     faculty_id VARCHAR(20),
->     course_name VARCHAR(50)
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO Faculty_Courses
->     SELECT faculty_id, course_name
->     FROM Course
->     WHERE faculty_id = 'FAC01';
Query OK, 2 rows affected (0.01 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> UPDATE Student
->     SET phone = CONCAT('+91', phone)
->     WHERE department = 'CSE'
->     LIMIT 5;
Query OK, 3 rows affected (0.01 sec)
Rows matched: 3  Changed: 3  Warnings: 0

```

## SESSION 5:

```

mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> INSERT INTO Student VALUES
->     ('VTU106', 'Kiran', 'kiran@gmail.com', '9876543220', 'ISE');
Query OK, 1 row affected (0.00 sec)

```

```
mysql>
mysql> COMMIT;
Query OK, 0 rows affected (0.01 sec)

mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> SAVEPOINT sp1;
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> UPDATE Student
      -> SET phone = '0000000000'
      -> WHERE vtu_no = 'VTU101';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
mysql> ROLLBACK TO sp1;
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> COMMIT;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION add_numbers(a INT, b INT)  
    -> RETURNS INT  
    -> DETERMINISTIC  
    -> BEGIN  
    ->     RETURN a + b;  
    -> END$$  
Query OK, 0 rows affected (0.04 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT add_numbers(10, 20);  
+-----+  
| add_numbers(10, 20) |  
+-----+  
|            30 |  
+-----+  
1 row in set (0.00 sec)  
  
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION get_student_count(dept VARCHAR(30))  
    -> RETURNS INT  
    -> DETERMINISTIC  
    -> BEGIN  
    ->     DECLARE total INT;  
    ->     SELECT COUNT(*) INTO total  
    ->     FROM Student  
    ->     WHERE department = dept;  
    ->     RETURN total;  
    -> END$$  
Query OK, 0 rows affected (0.01 sec)  
  
mysql>  
mysql> DELIMITER ;
```

```
mysql> SELECT get_student_count('CSE');  
+-----+  
| get_student_count('CSE') |  
+-----+  
|            3 |  
+-----+  
1 row in set (0.00 sec)
```