*"Heaven's Light is Our Guide"*

# Rajshahi University of Engineering & Technology, Rajshahi



## Department of Electrical & Computer Engineering

Course Code      : ECE 2216

Course Title      : Data Base Systems Sessional

Submission Date   : 23 September 2024

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|---|---|
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**Lab No. 1**

**Lab Task:**

Create a database containing following info for 10 students.

1. Roll
2. Name
3. Semester
4. Major / Far subject
5. Obtained (75)

**Problems:**

1. Create database and table
2. Change a specific column name and data type
3. Add a new column named as log , set the values applicable and not applicable for the condition (<30)
4. Delete the students whose marks are below 30.

**Objectives:**

1. To install XAMPP in computer and to learn how to use it.
2. To learn about different SQL queries and to use them to create a database and a table within it.
3. To insert data, alter table and delete data using SQL queries.
4. To delete the data of the table and the entire table after completing all four given problems.

**Solution:**

**Problem 1: Creating database and Table**

**1. Creating database:**

**Query:**

```
CREATE DATABASE student_info
```

**Output:**

Database: student_info

**Creating Table:**

**Query:**

```sql
CREATE TABLE student_table (
    roll INT,
    name TEXT,
    semester INT,
    major TEXT,
    obtained INT
    );
```

**Output:**

roll  name  semester  major  obtained

**Inserting information of 10 students:**

**Query:**

```sql
INSERT INTO student_table ( roll , name , semester , major , obtained )
VALUES
('1', 'rose', '3', 'ece', '67'),
('2', 'lily', '2', 'ece', '54'),
('3', 'tulip', '4', 'ece', '72'),
('4', 'orchid', '3', 'ece', '29'),
('5', 'daisy', '2', 'ece', '61'),
('6', 'sunflower', '4', 'ece', '27'),
('7', 'jasmine', '3', 'ece', '70'),
('8', 'lavender', '2', 'ece', '25'),
('9', 'marigold', '4', 'ece', '75'),
('10', 'violet', '3', 'ece', '22');
```

**Output:**

| roll | name | semester | major | obtained |
|---|---|---|---|---|
| 1 | rose | 3 | ece | 67 |
| 2 | lily | 2 | ece | 54 |
| 3 | tulip | 4 | ece | 72 |
| 4 | orchid | 3 | ece | 29 |
| 5 | daisy | 2 | ece | 61 |
| 6 | sunflower | 4 | ece | 27 |
| 7 | jasmine | 3 | ece | 70 |
| 8 | lavender | 2 | ece | 25 |
| 9 | marigold | 4 | ece | 75 |
| 10 | violet | 3 | ece | 22 |

## Problem 2: Changing a specific column name and data type

Here we are changing the 'major' column to 'subject' and data type TEXT to VARCHAR.

**Query:**

```
ALTER TABLE student_table CHANGE major subject VARCHAR(255) ;
```

**Output:**

| roll | name | semester | subject | obtained |
|---|---|---|---|---|
| 1 | rose | 3 | ece | 67 |
| 2 | lily | 2 | ece | 54 |
| 3 | tulip | 4 | ece | 72 |
| 4 | orchid | 3 | ece | 29 |
| 5 | daisy | 2 | ece | 61 |
| 6 | sunflower | 4 | ece | 27 |
| 7 | jasmine | 3 | ece | 70 |
| 8 | lavender | 2 | ece | 25 |
| 9 | marigold | 4 | ece | 75 |
| 10 | violet | 3 | ece | 22 |

**Problem 3: Adding a new column named as log , setting the values applicable and not applicable for the condition (<30)**

**Query:**

```
ALTER TABLE student_table ADD COLUMN log TEXT;
UPDATE student_table SET log = 'applicable' WHERE obtained < 30;
UPDATE student_table SET log = 'not applicable' WHERE obtained = 30 OR obtained
>30;
```

**Output:**

| roll | name | semester | subject | obtained | log |
|------|------|----------|---------|----------|-----|
| 1 | rose | 3 | ece | 67 | not applicable |
| 2 | lily | 2 | ece | 54 | not applicable |
| 3 | tulip | 4 | ece | 72 | not applicable |
| 4 | orchid | 3 | ece | 29 | applicable |
| 5 | daisy | 2 | ece | 61 | not applicable |
| 6 | sunflower | 4 | ece | 27 | applicable |
| 7 | jasmine | 3 | ece | 70 | not applicable |
| 8 | lavender | 2 | ece | 25 | applicable |
| 9 | marigold | 4 | ece | 75 | not applicable |
| 10 | violet | 3 | ece | 22 | applicable |

**Problem 4: Deleting the students whose marks are below 30:**

**Query:**

```
DELETE FROM student_table WHERE obtained < 30;
```

**Output:**

| roll | name | semester | subject | obtained | log |
|------|------|----------|---------|----------|-----|
| 1 | rose | 3 | ece | 67 | not applicable |
| 2 | lily | 2 | ece | 54 | not applicable |
| 3 | tulip | 4 | ece | 72 | not applicable |
| 5 | daisy | 2 | ece | 61 | not applicable |
| 7 | jasmine | 3 | ece | 70 | not applicable |
| 9 | marigold | 4 | ece | 75 | not applicable |

**Difference between DROP and TRUNCATE:**

TRUNCATE is used to remove the data of the table.

**Query:**

```
TRUNCATE TABLE student_table;
```

**Output:**

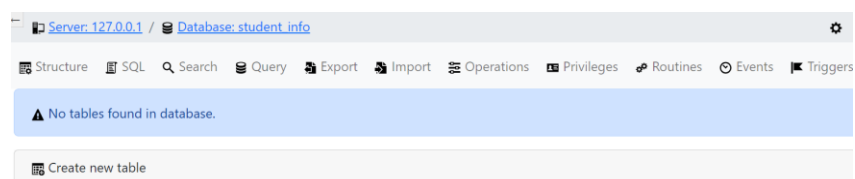roll  name  semester  subject  obtained  log

All data from the table were removed.

DROP is used to remove the entire table.

**Query:**

```
DROP TABLE student_table;
```

**Output:**



The table itself was removed from the database.