"Heaven's Light is Our Guide"

# Rajshahi University of Engineering & Technology

Rajshahi, Bangladesh


## Department of Electrical & Computer Engineering

Course Code: ECE 2216

Course Title: Database System Sessional

Experiment No: 01

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Submitted To

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## Lab No: 01

**Lab Task:** Create a database containing following info for students.

1. Roll
2. Name
3. Semester
4. Major / Far subject
5. Obtained Marks

## 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.

## Objective:

The objective of these problems is to demonstrate the use of essential SQL operations, both Data Definition Language (DDL) and Data Manipulation Language (DML), to manage a student database. [1]Starting with the creation of a database and a table to store student information, the task highlights how to modify the database schema by renaming and changing the data type of a specific column. This involves altering the table structure and adding a new column named "Log," which stores the values 'Applicable' or 'Not Applicable' based on a condition (marks less than 30). Furthermore, the problem emphasizes the use of DML commands to update and manage data, including deleting records of students whose obtained marks fall below 30. By addressing these tasks, the exercise provides a comprehensive understanding of how to create, modify, and maintain a database effectively using SQL.

## Problem Statement 1: Create Database and table.

## Query:

## Create Table:

Run SQL query/queries on server "127.0.0.1":

```
CREATE TABLE student_data (
    st_name VARCHAR,
    st_roll INT,
    st_semester VARCHAR,
    major_subject VARCHAR,
    obtained_marks INT );
```

## Insert Information:

Run SQL query/queries on table student_info_table.student_data:

```
INSERT INTO student_data (st_name, st_roll, st_semester,major_subject, obtained_marks)
VALUES ('Md.Kamal', 11, '1st', 'Mathematics', 28),
       ('Jolly', 42, '2nd', 'Science', 75),
       ('S.M.Michael ', 23,' 1st', 'Literature', 45),
       ('A.Koly ', 14,' 2nd', 'History', 15),
       ('M. Theroja', 52,' 2nd', 'Science', 85);
```

## Output :

Profiling [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

| st_name | st_roll | st_semester | major_subject | obtained_marks |
|---|---|---|---|---|
| Md.Kamal | 11 | 1st | Mathematics | 28 |
| Jolly | 42 | 2nd | Science | 75 |
| S.M.Michael | 23 | 1st | Literature | 45 |
| A.Koly | 14 | 2nd | History | 15 |
| M. Theroja | 52 | 2nd | Science | 85 |

**Problem Statement 2: Change a specific column name and datatype.**

1. **Change Column Name and Data Type Together**

**Query:**

Run SQL query/queries on table student_info_table.student_data:

```
1 ALTER TABLE student_data
2 CHANGE COLUMN obtained_marks cgpa INT(255);
```

**Output:**

Extra options

| st_name | st_roll | st_semester | major_subject | cgpa |
|---|---|---|---|---|
| Md.Kamal | 11 | 1st | Mathematics | 28 |
| Jolly | 42 | 2nd | Science | 75 |
| S.M.Michael | 23 | 1st | Literature | 45 |
| A.Koly | 14 | 2nd | History | 15 |
| M. Theroja | 52 | 2nd | Science | 85 |

2. **Change Only Data Type (Without Renaming the Column)**

**Query:**

Run SQL query/queries on table student_info_table.student_data:

```
1 ALTER TABLE student_data
2 MODIFY COLUMN cgpa FLOAT;
3
```

**Problem Statement 3: Add a new column named as log . Set the value applicable and not applicable for the condition (<30).**

**Query:**

Run SQL query/queries on table student_info_table.student_data:

```
ALTER TABLE student_data
ADD Log VARCHAR(50);
UPDATE student_data
SET Log = CASE
    WHEN obtained_marks >= 30 THEN 'Applicable'
    ELSE 'Not Applicable'
END;
```

**Output:**

Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

| st_name | st_roll | st_semester | major_subject | obtained_marks | Log |
|---|---|---|---|---|---|
| Md.Kamal | 11 | 1st | Mathematics | 28 | Not Applicable |
| Jolly | 42 | 2nd | Science | 75 | Applicable |
| S.M.Michael | 23 | 1st | Literature | 45 | Applicable |
| A.Koly | 14 | 2nd | History | 15 | Not Applicable |
| M. Theroja | 52 | 2nd | Science | 85 | Applicable |

Show all | Number of rows: 25 | Filter rows: Search this table

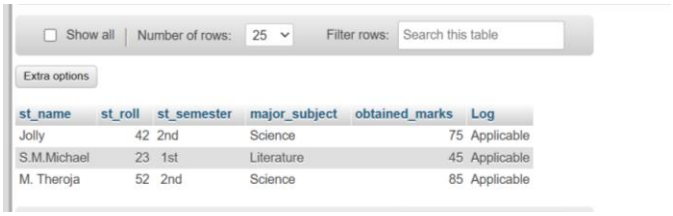
**Problem Statement 4: Delete the Students info. Whose marks are below 30.**

**Query:**

Run SQL query/queries on table student_info_table.student_data:

```
DELETE FROM student_data
WHERE obtained_marks < 30;
```

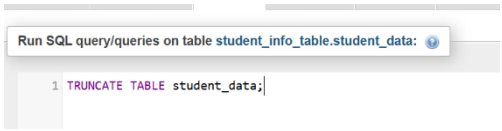
**Output:**



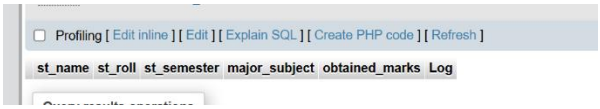

| st_name | st_roll | st_semester | major_subject | obtained_marks | Log |
|---|---|---|---|---|---|
| Jolly | 42 | 2nd | Science | 75 | Applicable |
| S.M.Michael | 23 | 1st | Literature | 45 | Applicable |
| M. Theroja | 52 | 2nd | Science | 85 | Applicable |

**Truncate :**

**Query:**

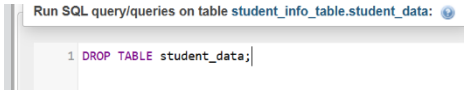



**Output:**

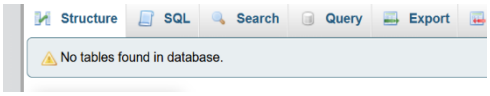



**Drop:**

**Query:**




**Output:**




**Reference:**

[1] "What is DBMS (Database management system) ? | OVHcloud Worldwide." Accessed: Sep. 22, 2024. [Online]. Available: https://www.ovhcloud.com/en/learn/what-is-dbms/