"Heaven's Light is Our Guide"

Rajshahi University of Engineering & Technology, Rajshahi

Department of Electrical & Computer Engineering

Course Title : Data Base Systems Sessional

Course Code : ECE 2216

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Experiment No: 01

Experiment Name:

Create a database containing the following information for 10 students:
1. Roll Number
2. Name
3. Semester
4. Major/Favorite Subject
5. Obtained Marks (Out of 75)

Instructions:
1. Create a database and table
2. Change a specific column name and its data type.
3. Add a new column named log. Set the values as "Applicable" or "Not Applicable" based on whether the student's marks are greater than or equal to 30.
4. Delete the students' information whose obtained marks are below 30.

Theory:

The task involves creating a database to store and manage information for 10 students, covering their roll number, name, semester, major or favorite subject, and obtained marks out of 75. After setting up the initial table in the database, the next step is to modify one of the columns by renaming it and potentially changing its data type. This step is crucial in database management when the structure needs adjustment based on new requirements. Additionally, a new column named `log` is introduced. This column is used to indicate whether each student's status is "Applicable" or "Not Applicable," depending on their obtained marks. Students who score 30 marks or more are labeled as "Applicable," while those scoring below 30 are labeled "Not Applicable." The database is then further refined by removing the records of students who have obtained marks below 30, ensuring that only relevant information is retained. This task illustrates the essential aspects of working with databases, such as creating tables, modifying data structures, adding new information, and applying conditions to update and delete records, all using SQL commands. Such operations are critical in various real-world applications where structured data management, updates, and deletion based on specific criteria are required.

Objective:

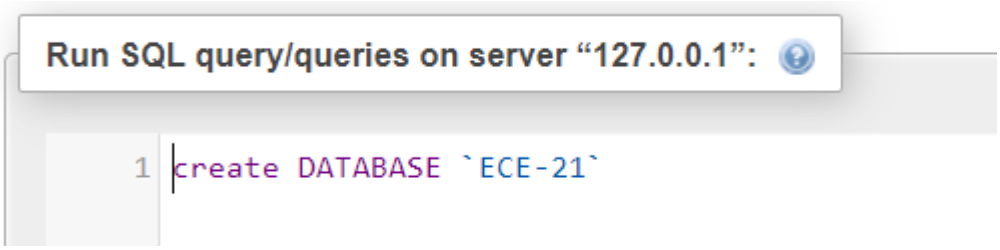
i. To create a structured database that stores essential student information such as roll numbers, name, semester, major subject, and obtained marks.
ii. To modify the structure of the database by renaming and adjusting the data type of specific columns as needed.
iii. To add a new column (`log`) that evaluates and labels students as "Applicable" or "Not Applicable" based on their obtained marks.
iv. To delete records of students whose marks fall below a specified threshold (below 30), ensuring only relevant data is retained.
v. To demonstrate the use of SQL commands for creating, updating, modifying, and deleting records, showcasing core database management skills.

Tools:

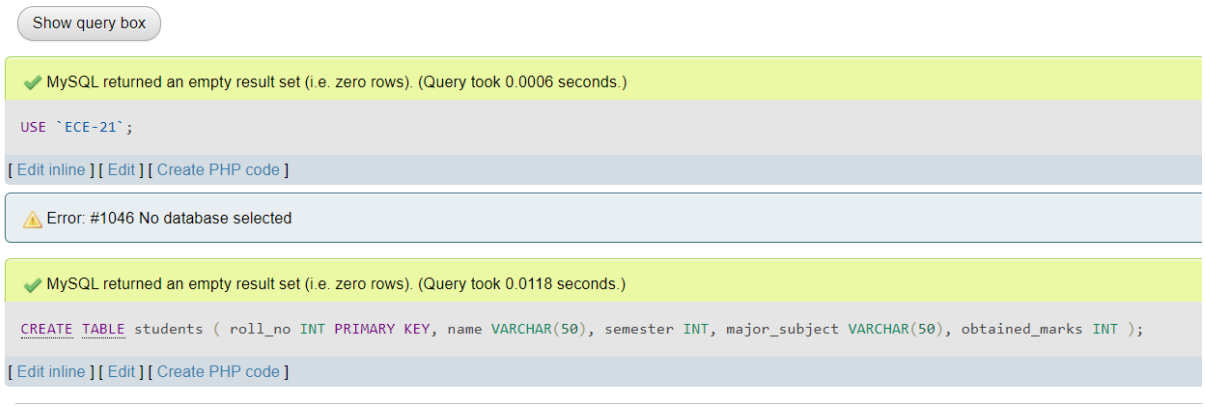
i. Computer
ii. XAMPP
iii. Chrome Browser

Query and Output:

Creating database named ECE-21.



Output:



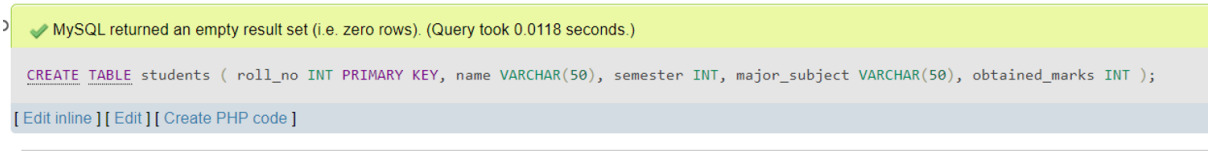
Creating a Table of Contents:

Run SQL query/queries on server “127.0.0.1”:

```sql
USE `ECE-21`;
CREATE TABLE students (
    roll_no INT PRIMARY KEY,
    name VARCHAR(50),
    semester INT,
    major_subject VARCHAR(50),
    obtained_marks INT
);

```

Output:



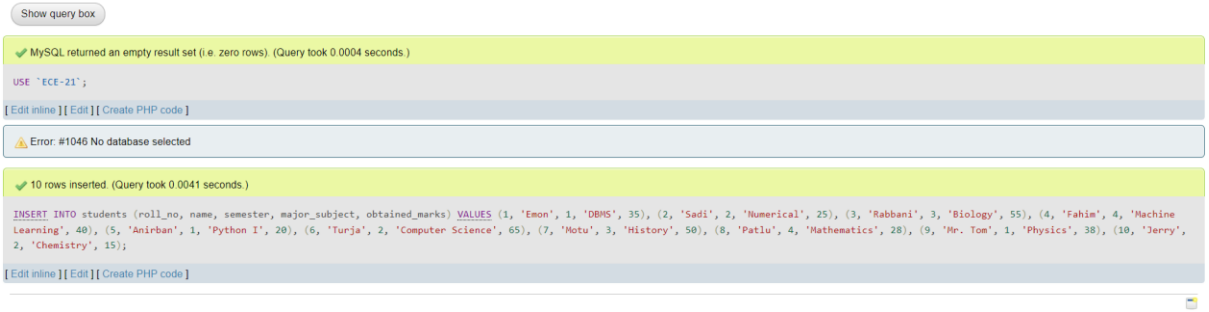
Inserting 10 students’ data:

Run SQL query/queries on server “127.0.0.1”:

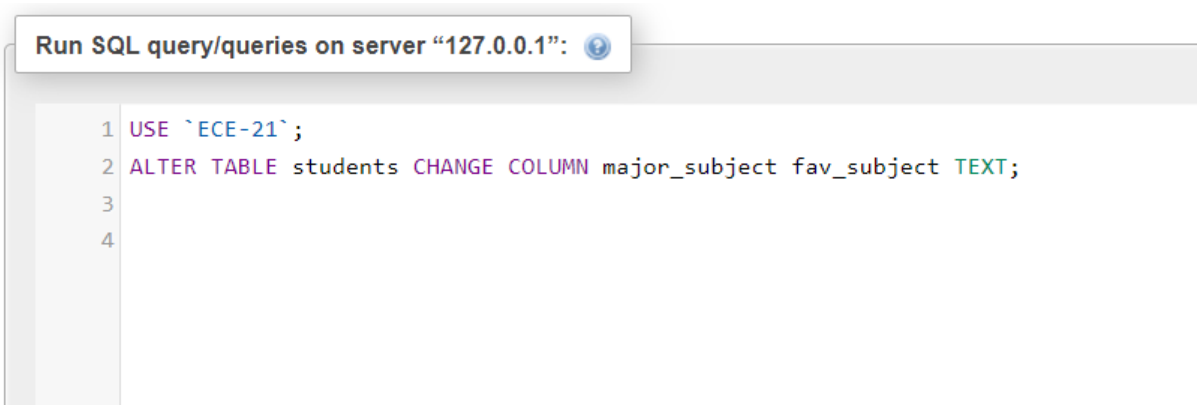
```sql
INSERT INTO students (roll_no, name, semester, major_subject, obtained_marks)
VALUES
(1, 'Emon', 1, 'DBMS', 35),
(2, 'Sadi', 2, 'Numerical', 25),
(3, 'Rabbani', 3, 'Biology', 55),
(4, 'Fahim', 4, 'Machine Learning', 40),
(5, 'Anirban', 1, 'Python I', 20),
(6, 'Turja', 2, 'Computer Science', 65),
(7, 'Motu', 3, 'History', 50),
(8, 'Patlu', 4, 'Mathematics', 28),
(9, 'Mr. Tom', 1, 'Physics', 38),
(10, 'Jerry', 2, 'Chemistry', 15);


```

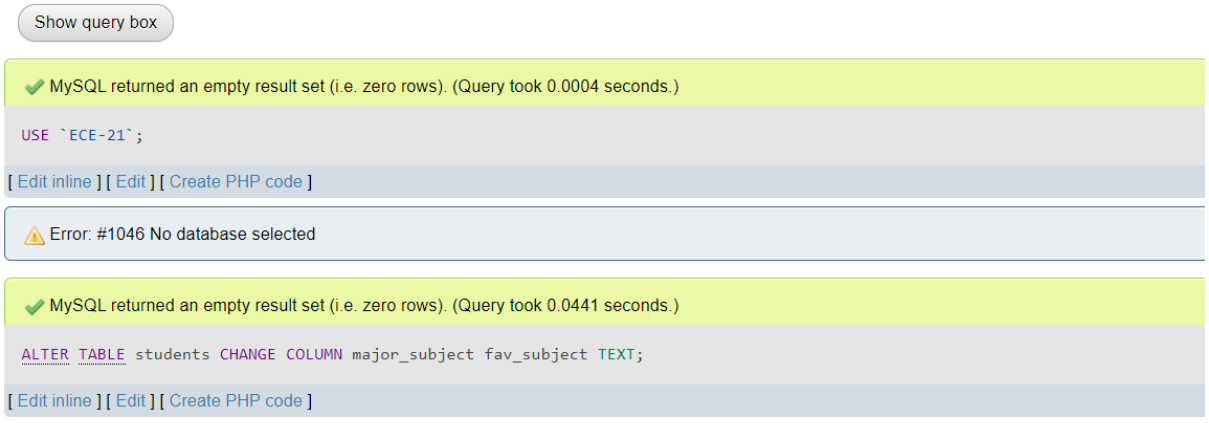
Output:



Changing Subject from Major to Favourite:



Output:



Adding column for eligible student in exam:

Run SQL query/queries on server “127.0.0.1”:

```
USE `ECE-21`;
ALTER TABLE students ADD COLUMN log VARCHAR(20);

UPDATE students
SET log = CASE
    WHEN obtained_marks >= 30 THEN 'Applicable'
    ELSE 'Not Applicable'
END;

```

Output:

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0006 seconds.)

```
USE `ECE-21`;
```

[Edit inline] [Edit] [Create PHP code]

Error: #1046 No database selected

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0083 seconds.)

```
ALTER TABLE students ADD COLUMN log VARCHAR(20);
```

[Edit inline] [Edit] [Create PHP code]

10 rows affected. (Query took 0.0020 seconds.)

```
UPDATE students SET log = CASE WHEN obtained_marks >= 30 THEN 'Applicable' ELSE 'Not Applicable' END;
```

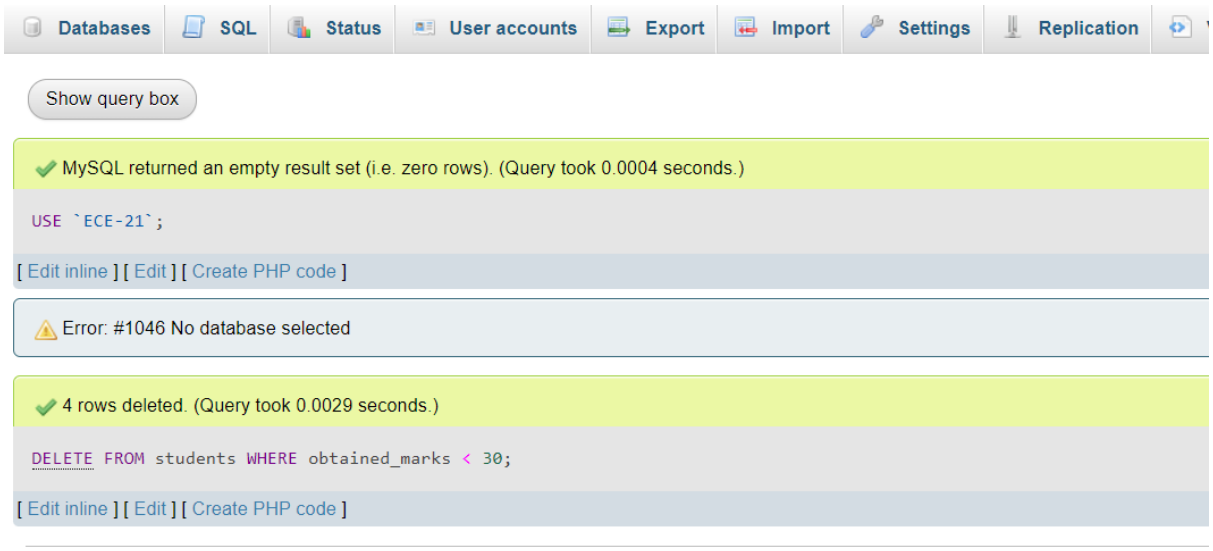
[Edit inline] [Edit] [Create PHP code]

Deleting non-eligible student:

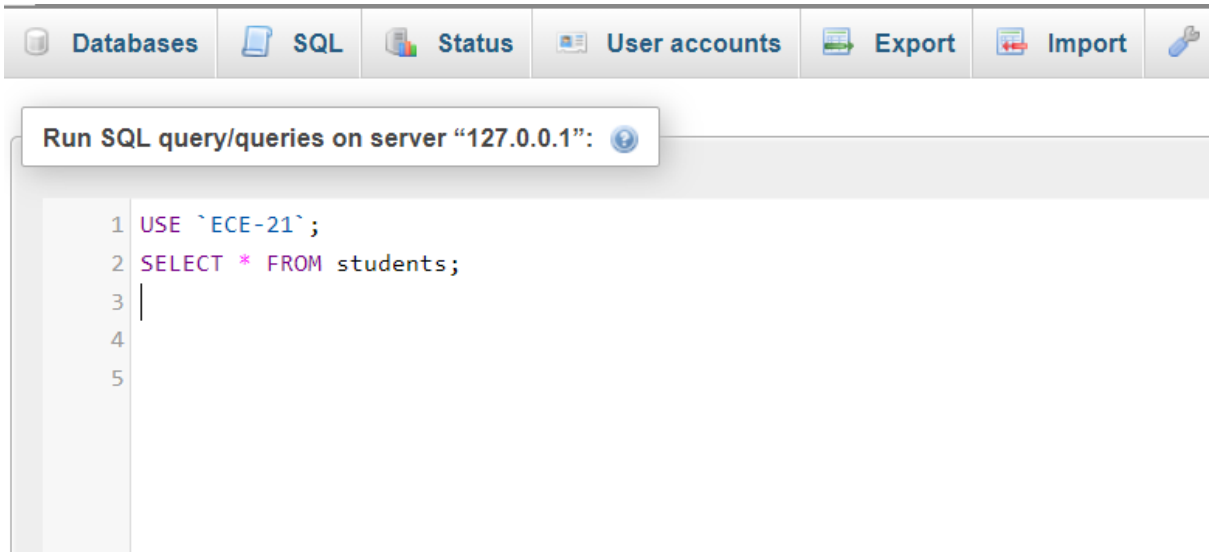
Run SQL query/queries on server "127.0.0.1":

```
USE `ECE-21`;
DELETE FROM students WHERE obtained_marks < 30;
```

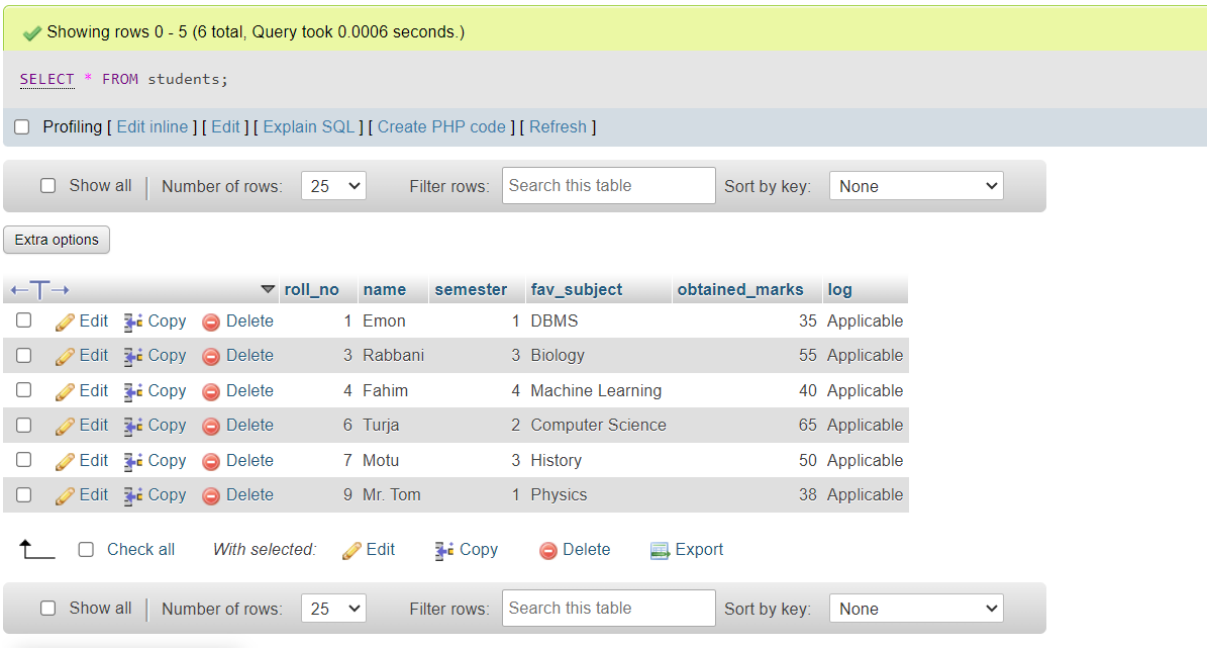
Output:



Display full database:



Output:


Showing rows 0 - 5 (6 total, Query took 0.0006 seconds.)
SELECT * FROM students;
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
Extra options
roll_no name semester fav_subject obtained_marks log
Edit Copy Delete 1 Emon 1 DBMS 35 Applicable
Edit Copy Delete 3 Rabbani 3 Biology 55 Applicable
Edit Copy Delete 4 Fahim 4 Machine Learning 40 Applicable
Edit Copy Delete 6 Turja 2 Computer Science 65 Applicable
Edit Copy Delete 7 Motu 3 History 50 Applicable
Edit Copy Delete 9 Mr. Tom 1 Physics 38 Applicable
Check all With selected: Edit Copy Delete Export
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None