Heaven's Light is Our Guide

Rajshahi University of Engineering & Technology

Department of Electrical & Computer Engineering

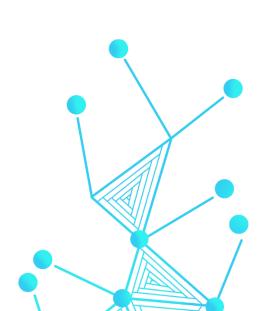Course Title: Database Systems Sessional

Course Code**:** ECE 2214

Date of submission: 21/09/2024

Lab report no : 01

Submitted To:

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Assistant Professor,Department of

Electrical & Computer Engineering

Submitted By:

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Roll No.   : 2110058

Experiment No: 01

Experiment Name: Create a database containing following info for 10 students

1. Roll

2. Name

3. Semester

4. Major subject

5. Obtained Marks

Objectives : The objective of this project is to create a relational database for managing student records, capturing essential information such as Roll Number, Name, Semester, Major Subject, and Obtained Marks. This database aims to ensure accurate storage, easy retrieval, and effective management of academic performance data for ten students.

problem-1:create a relational database for managing student records, capturing essential information such as Roll Number, Name, Semester, Major Subject, and Obtained Marks
Code:

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

CREATE TABLE IF NOT EXISTS students (

    Roll INT PRIMARY KEY,

    Name VARCHAR(100),

    Semester INT,

    Major_Subject VARCHAR(100),

    Obtained_Marks DECIMAL(5, 2)

);

INSERT INTO students (Roll, Name, Semester, Major_Subject, Obtained_Marks) VALUES
(1, 'Ayesha Sultana', 1, 'Computer Science', 89.50), (2, 'Rafiq Ahmed', 1, 'Mathematics', 92.75),
(3, 'Mita Das', 2, 'Physics', 85.00),

(4, 'Rumana Begum', 2, 'Chemistry', 90.25),
```
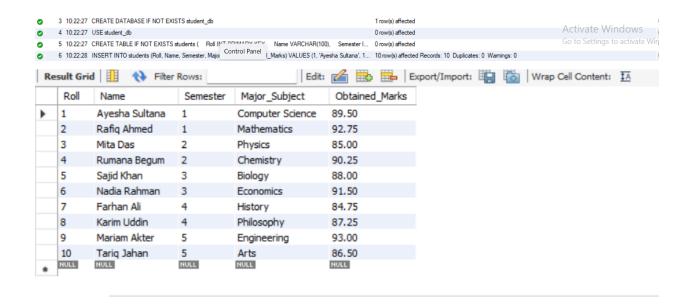
(5, 'Sajid Khan', 3, 'Biology', 88.00),

(6, 'Nadia Rahman', 3, 'Economics', 91.50),

(7, 'Farhan Ali', 4, 'History', 84.75),

(8, 'Karim Uddin', 4, 'Philosophy', 87.25),

(9, 'Mariam Akter', 5, 'Engineering', 93.00),
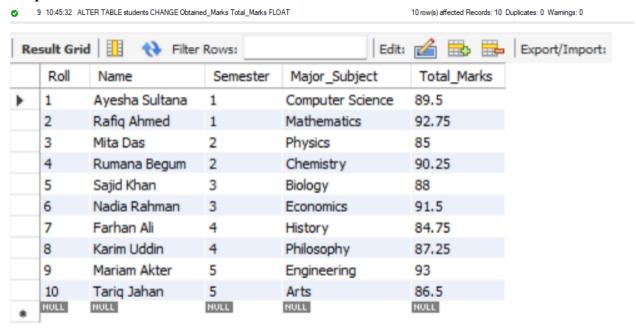
(10, 'Tariq Jahan', 5, 'Arts', 86.50);

Output:

	Roll	Name	Semester	Major_Subject	Obtained_Marks
▶	1	Ayesha Sultana	1	Computer Science	89.50
	2	Rafiq Ahmed	1	Mathematics	92.75
	3	Mita Das	2	Physics	85.00
	4	Rumana Begum	2	Chemistry	90.25
	5	Sajid Khan	3	Biology	88.00
	6	Nadia Rahman	3	Economics	91.50
	7	Farhan Ali	4	History	84.75
	8	Karim Uddin	4	Philosophy	87.25
	9	Mariam Akter	5	Engineering	93.00
	10	Tariq Jahan	5	Arts	86.50
✱	NULL	NULL	NULL	NULL	NULL

problem-2: Change a specific column name and data typ**e**

Code:

ALTER TABLE students

CHANGE Obtained_Marks Total_Marks FLOAT;

Output :

9 10:45:32 ALTER TABLE students CHANGE Obtained_Marks Total_Marks FLOAT   10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0

	Roll	Name	Semester	Major_Subject	Total_Marks
▶	1	Ayesha Sultana	1	Computer Science	89.5
	2	Rafiq Ahmed	1	Mathematics	92.75
	3	Mita Das	2	Physics	85
	4	Rumana Begum	2	Chemistry	90.25
	5	Sajid Khan	3	Biology	88
	6	Nadia Rahman	3	Economics	91.5
	7	Farhan Ali	4	History	84.75
	8	Karim Uddin	4	Philosophy	87.25
	9	Mariam Akter	5	Engineering	93
	10	Tariq Jahan	5	Arts	86.5
✱	NULL	NULL	NULL	NULL	NULL

Problem-3: Add a new column named as log. Set the value applicable and not

applicable for the

condition

code:

CREATE DATABASE IF NOT EXISTS student_db;

```sql
USE student_db;

CREATE TABLE IF NOT EXISTS students (

    Roll INT PRIMARY KEY,

    Name VARCHAR(100),

    Semester INT,

    Major_Subject VARCHAR(100),

    Obtained_Marks DECIMAL(5, 2)

);

INSERT INTO students (Roll, Name, Semester, Major_Subject, Obtained_Marks) VALUES
(1, 'Ayesha Sultana', 1, 'Computer Science', 89.50), (2, 'Rafiq Ahmed', 1, 'Mathematics',
92.75),
(3, 'Mita Das', 2, 'Physics', 85.00),

(4, 'Rumana Begum', 2, 'Chemistry', 90.25),

(5, 'Sajid Khan', 3, 'Biology', 88.00),

(6, 'Nadia Rahman', 3, 'Economics', 91.50),

(7, 'Farhan Ali', 4, 'History', 84.75),

(8, 'Karim Uddin', 4, 'Philosophy', 87.25),

(9, 'Mariam Akter', 5, 'Engineering', 93.00),

(10, 'Tariq Jahan', 5, 'Arts', 86.50);

ALTER TABLE students

ADD COLUMN log ENUM('applicable', 'not applicable') DEFAULT 'not applicable';

UPDATE students

SET log = 'applicable'

WHERE Obtained_Marks > 75;

DESCRIBE students;

SELECT * FROM students;
```

Output :

✅	96	11:39:42	UPDATE students SET log = CASE WHEN Total_Marks >= 90 THEN 'applicable' ELSE 'not applicable' E...	9 row(s) affected Rows matched: 9 Changed: 9 Warnings: 0	
✅	87	11:25:17	ALTER TABLE students ADD log VARCHAR(20)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
❌	88	11:25:18	UPDATE students SET log = CASE WHEN Total_Marks > 90 THEN 'applicable' ELSE 'not applicable' E...	Error Code: 1175. You are using safe update mode and you tried to update a table without a WHERE that uses...	0.000 sec

Roll	Name	Semester	Major_Subject	Total_Marks	log
1	Ayesha Sultana	1	Computer Science	89.5	not applicable
2	Rafiq Ahmed	1	Mathematics	92.75	applicable
3	Mita Das	2	Physics	85	not applicable
4	Rumana Begum	2	Chemistry	90.25	applicable
5	Sajid Khan	3	Biology	88	not applicable
6	Nadia Rahman	3	Economics	91.5	applicable
7	Farhan Ali	4	H History	84.75	not applicable
8	Karim Uddin	4	Philosophy	87.25	not applicable
10	Tariq Jahan	5	Arts	86.5	not applicable
NULL	NULL	NULL	NULL	NULL	NULL

problem-4: delete the students info whose marks are below 30

Code:

DELETE FROM students

WHERE Total_Marks < 30;

output:

92 11:33:04 DELETE FROM students WHERE Total_Marks < 30

Roll	Name	Semester	Major_Subject	Total_Marks	log
1	Ayesha Sultana	1	Computer Science	89.5	not applicable
2	Rafiq Ahmed	1	Mathematics	92.75	applicable
3	Mita Das	2	Physics	85	not applicable
4	Rumana Begum	2	Chemistry	90.25	applicable
5	Sajid Khan	3	Biology	88	not applicable
6	Nadia Rahman	3	Economics	91.5	applicable
7	Farhan Ali	4	History	84.75	not applicable
8	Karim Uddin	4	Philosophy	87.25	not applicable
10	Tariq Jahan	5	Arts	86.5	not applicable
NULL	NULL	NULL	NULL	NULL	NULL	not applicab