1. Create Database -

Query 1-

CREATE DATABASE Student;

Query 2-

SHOW CREATE DATABASE student;

Result -

| Database | Create Database |
|----------|--|
| student | CREATE DATABASE `student` /*!40100 DEFAULT CHARACT |

2. Create Table - University

```
Query 1-
```

```
CREATE TABLE University
(
StudentID INT NOT NULL,
StudentName Varchar(100),
UniversityName Varchar(100),
CGPA float,
Department Varchar(100),
PRIMARY KEY (StudentID)
);
```

Query 2-

SHOW CREATE TABLE university;

Result -

```
Table Create Table
university CREATE TABLE `university` (
  `StudentID` int(11) ...
```

3. Insert data into university table

Query 1-

INSERT INTO university

(StudentID,StudentName,UniversityName, CGPA, Department) VALUES

VALUES

- (1, 'Nafis Ulfat', 'American International University-Bangladesh', 3.8, 'Computer Science'),
- (2, 'Sabrina Islam', 'Bangladesh University of Engineering and Technology', 3.9, 'Civil Engineering'),
- (3, 'Shafiqul Rahman', 'Jahangirnagar University', 3.7, 'Economics'),
- (4, 'Mim Chowdhury', 'North South University', 3.5, 'Business Administration'),
- (5, 'Hasibul Hasan', 'University of Chittagong', 3.6, 'Physics'),
- (6, 'Ayesha Siddiqua', 'Khulna University', 3.8, 'Biotechnology'),
- (7, 'Tariq Islam', 'Rajshahi University', 3.4, 'English Literature'),
- (8, 'Samiha Khan', 'Independent University, Bangladesh', 3.6, 'Environmental Science'),
- (9, 'Rakibul Islam', 'American International University-Bangladesh', 3.5, 'Information Technology'),
- (10, 'Mehedi Hasan', 'Shahjalal University of Science and Technology', 3.9, 'Genetic Engineering'),
- (11, 'Farzana Akter', 'East West University', 3.7, 'Pharmacy'),
- (12, 'Tanvir Hossain', 'Brac University', 3.3, 'Architecture'),
- (13, 'Jannat Ara', 'Ahsanullah University of Science and Technology', 3.4, 'Electrical Engineering'),
- (14, 'Fahim Iqbal', 'Daffodil International University', 3.2, 'Software Engineering'),
- (15, 'Shakib Ali', 'Bangabandhu Sheikh Mujib Medical University', 3.8, 'Public Health');

Query 2-

SELECT *

FROM university;

| $\leftarrow T$ | _→ | | ∇ | StudentID | StudentName | UniversityName | CGPA | Department |
|----------------|----|-----------------|----------|-----------|-----------------|--|------|-------------------------|
| | | ≩ Copy | Delete | 1 | Nafis Ulfat | American International University-Bangladesh | 3.8 | Computer Science |
| | | ≩ Copy | Delete | 2 | Sabrina Islam | Bangladesh University of Engineering and Technolog | 3.9 | Civil Engineering |
| | | ≩ Copy | Delete | 3 | Shafiqul Rahman | Jahangirnagar University | 3.7 | Economics |
| | | ≩ Copy | Delete | 4 | Mim Chowdhury | North South University | 3.5 | Business Administration |
| | | ≩ Copy | Delete | 5 | Hasibul Hasan | University of Chittagong | 3.6 | Physics |
| | | ≩ € Copy | Delete | 6 | Ayesha Siddiqua | Khulna University | 3.8 | Biotechnology |
| | | ≩ Copy | Delete | 7 | Tariq Islam | Rajshahi University | 3.4 | English Literature |
| | | ≩ € Copy | Delete | 8 | Samiha Khan | Independent University, Bangladesh | 3.6 | Environmental Science |
| | | ≩ Copy | Delete | 9 | Rakibul Islam | American International University-Bangladesh | 3.5 | Information Technology |
| | | ≩ € Copy | Delete | 10 | Mehedi Hasan | Shahjalal University of Science and Technology | 3.9 | Genetic Engineering |
| | | ≩ Copy | Delete | 11 | Farzana Akter | East West University | 3.7 | Pharmacy |
| | | ≩ € Copy | Delete | 12 | Tanvir Hossain | Brac University | 3.3 | Architecture |
| | | ≩ Copy | Delete | 13 | Jannat Ara | Ahsanullah University of Science and Technology | 3.4 | Electrical Engineering |
| | | ≩ € Copy | Delete | 14 | Fahim Iqbal | Daffodil International University | 3.2 | Software Engineering |
| | | ≩ Copy | Delete | 15 | Shakib Ali | Bangabandhu Sheikh Mujib Medical University | 3.8 | Public Health |

4. Create Table - Bugresistance

```
Query 1-
```

```
CREATE TABLE Bugresistance
(
BugresistanceID INT NOT NULL,
StudentID INT NOT NULL,
StudentName VARCHAR(100),
UniversityName VARCHAR(100),
CGPA FLOAT,
Department VARCHAR(100),
PRIMARY KEY (BugresistanceID),
FOREIGN KEY (StudentID) REFERENCES University(StudentID)
);
```

Query 2-

SHOW CREATE TABLE bugresistance;

| Table | Create Table |
|---------------|--------------------------------|
| bugresistance | CREATE TABLE `bugresistance` (|
| bugiesistance | `BugresistanceID` |

5. New Column Add in Bugresistance table

Query 1-

ALTER TABLE Bugresistance
ADD COLUMN City VARCHAR(100),
ADD COLUMN Email VARCHAR(100),
ADD COLUMN ContactNumber VARCHAR(100);

6. Insert data into university Bugresistance table

Query 1-

INSERT INTO Bugresistance

(BugresistanceID, StudentID, StudentName, UniversityName, CGPA, Department, City, Email, ContactNumber)

VALUES

- (101, 1, 'Nafis Ulfat', 'American International University-Bangladesh', 3.8, 'Computer Science', 'Dhaka', 'nafisulfat@example.com', '01712345678'),
- (102, 2, 'Sabrina Islam', 'Bangladesh University of Engineering and Technology', 3.9, 'Civil Engineering', 'Dhaka', 'sabrina@example.com', '01812345678'),
- (103, 3, 'Shafiqul Rahman', 'Jahangirnagar University', 3.7, 'Economics', 'Savar', 'shafiqul@example.com', '01612345678'),
- (104, 4, 'Mim Chowdhury', 'North South University', 3.5, 'Business Administration', 'Dhaka', 'mim@example.com', '01912345678'),
- (105, 5, 'Hasibul Hasan', 'University of Chittagong', 3.6, 'Physics', 'Chittagong', 'hasibul@example.com', '01722345678'),
- (106, 6, 'Ayesha Siddiqua', 'Khulna University', 3.8, 'Biotechnology', 'Khulna', 'ayesha@example.com', '01822345678'),
- (107, 7, 'Tariq Islam', 'Rajshahi University', 3.4, 'English Literature', 'Rajshahi', 'tariq@example.com', '01512345678'),
- (108, 8, 'Samiha Khan', 'Independent University, Bangladesh', 3.6, 'Environmental Science', 'Dhaka', 'samiha@example.com', '01622345678'),
- (109, 9, 'Rakibul Islam', 'American International University-Bangladesh', 3.5, 'Information Technology', 'Dhaka', 'rakibul@example.com', '01922345678'),
- (110, 10, 'Mehedi Hasan', 'Shahjalal University of Science and Technology', 3.9, 'Genetic Engineering', 'Sylhet', 'mehedi@example.com', '01732345678'),

(111, 11, 'Farzana Akter', 'East West University', 3.7, 'Pharmacy', 'Dhaka', 'farzana@example.com', '01832345678'),

(112, 12, 'Tanvir Hossain', 'Brac University', 3.3, 'Architecture', 'Dhaka', 'tanvir@example.com', '01522345678'),

(113, 13, 'Jannat Ara', 'Ahsanullah University of Science and Technology', 3.4, 'Electrical Engineering', 'Dhaka', 'jannat@example.com', '01632345678'),

(114, 14, 'Fahim Iqbal', 'Daffodil International University', 3.2, 'Software Engineering', 'Dhaka', 'fahim@example.com', '01742345678'),

(115, 15, 'Shakib Ali', 'Bangabandhu Sheikh Mujib Medical University', 3.8, 'Public Health', 'Dhaka', 'shakib@example.com', '01932345678');

Query 2-

SELECT * FROM bugresistance;

Result -

| ← → ▼ | BugresistanceID StudentI | D StudentName | UniversityName | CGPA | Department | City | Email | ContactNumber |
|--|--------------------------|----------------------|---|------|----------------------------|------------|------------------------|---------------|
| ☐ Ø Edit ¾ Copy ⑤ Delete | 101 | 1 Nafis Ulfat | American International University- Bangladesh | 3.8 | Computer Science | Dhaka | nafisulfat@example.com | 01712345678 |
| □ Ø Edit | 102 | 2 Sabrina Islam | Bangladesh University of Engineering and Technolog | 3.9 | Civil Engineering | Dhaka | sabrina@example.com | 01812345678 |
| ☐ Ø Edit ♣ Copy 	 □ Delete | 103 | 3 Shafiqul Rahman | Jahangirnagar University | 3.7 | Economics | Savar | shafiqul@example.com | 01612345678 |
| □ Ø Edit 3 Copy © Delete | 104 | 4 Mim Chowdhury | North South University | 3.5 | Business Administration | Dhaka | mim@example.com | 01912345678 |
| ☐ | 105 | 5 Hasibul Hasan | University of Chittagong | 3.6 | Physics | Chittagong | hasibul@example.com | 01722345678 |
| □ Ø Edit ♣ Copy 	 □ Delete | 106 | 6 Ayesha Siddiqua | Khulna University | 3.8 | Biotechnology | Khulna | ayesha@example.com | 01822345678 |
| ☐ | 107 | 7 Tariq Islam | Rajshahi University | 3.4 | English Literature | Rajshahi | tariq@example.com | 01512345678 |
| □ Ø Edit ♣ Copy 	 □ Delete | 108 | 8 Samiha Khan | Independent University, Bangladesh | 3.6 | Environmental Science | Dhaka | samiha@example.com | 01622345678 |
| □ Ø Edit | 109 | 9 Rakibul Islam | American International University- Bangladesh | 3.5 | Information Technology | Dhaka | rakibul@example.com | 01922345678 |
| □ Ø Edit | 110 | 10 Mehedi Hasan | Shahjalal University of Science and Technology | 3.9 | Genetic Engineering | Sylhet | mehedi@example.com | 01732345678 |
| ☐ / Edit 1 Copy | 111 | 11 Farzana Akter | East West University | 3.7 | Pharmacy | Dhaka | farzana@example.com | 01832345678 |
| ☐ Ø Edit ♣ Copy 	 □ Delete | 112 | 12 Tanvir Hossain | Brac University | 3.3 | Architecture | Dhaka | tanvir@example.com | 01522345678 |
| ☐ | 113 | 13 Jannat Ara | Ahsanullah University of Science and Technology | 3.4 | Electrical Engineering | Dhaka | jannat@example.com | 01632345678 |
| ☐ Ø Edit 3 Copy 	 □ Delete | 114 | 14 Fahim Iqbal | Daffodil International University | 3.2 | Software Engineering | Dhaka | fahim@example.com | 01742345678 |
| Fdit Copy 🖨 Delete | 115 | 15 Shakib Ali | Bangabandhu Sheikh Mujib Medical University | 3.8 | Public Health | Dhaka | shakib@example.com | 01932345678 |

7. Use Inner Join

Query -

SELECT

University.StudentID, University.StudentName, Bugresistance.Email, Bugresistance.City FROM University
INNER JOIN
Bugresistance
ON

University.StudentID = Bugresistance.StudentID;

Result -

| StudentID | StudentName | Email | City |
|-----------|-----------------|------------------------|------------|
| 1 | Nafis Ulfat | nafisulfat@example.com | Dhaka |
| 2 | Sabrina Islam | sabrina@example.com | Dhaka |
| 3 | Shafiqul Rahman | shafiqul@example.com | Savar |
| 4 | Mim Chowdhury | mim@example.com | Dhaka |
| 5 | Hasibul Hasan | hasibul@example.com | Chittagong |
| 6 | Ayesha Siddiqua | ayesha@example.com | Khulna |
| 7 | Tariq Islam | tariq@example.com | Rajshahi |
| 8 | Samiha Khan | samiha@example.com | Dhaka |
| 9 | Rakibul Islam | rakibul@example.com | Dhaka |
| 10 | Mehedi Hasan | mehedi@example.com | Sylhet |
| 11 | Farzana Akter | farzana@example.com | Dhaka |
| 12 | Tanvir Hossain | tanvir@example.com | Dhaka |
| 13 | Jannat Ara | jannat@example.com | Dhaka |
| 14 | Fahim Iqbal | fahim@example.com | Dhaka |
| 15 | Shakib Ali | shakib@example.com | Dhaka |

8. Use Left Join

Query -

SELECT

University.StudentID,
University.UniversityName,
University.CGPA,
Bugresistance.BugresistanceID
FROM
University

LEFT JOIN

Bugresistance

ON

University.StudentID = Bugresistance.StudentID;

Result -

| StudentID | UniversityName | CGPA | BugresistanceID |
|-----------|--|------|-----------------|
| 1 | American International University-Bangladesh | 3.8 | 101 |
| 2 | Bangladesh University of Engineering and Technolog | 3.9 | 102 |
| 3 | Jahangirnagar University | 3.7 | 103 |
| 4 | North South University | 3.5 | 104 |
| 5 | University of Chittagong | 3.6 | 105 |
| 6 | Khulna University | 3.8 | 106 |
| 7 | Rajshahi University | 3.4 | 107 |
| 8 | Independent University, Bangladesh | 3.6 | 108 |
| 9 | American International University-Bangladesh | 3.5 | 109 |
| 10 | Shahjalal University of Science and Technology | 3.9 | 110 |
| 11 | East West University | 3.7 | 111 |
| 12 | Brac University | 3.3 | 112 |
| 13 | Ahsanullah University of Science and Technology | 3.4 | 113 |
| 14 | Daffodil International University | 3.2 | 114 |
| 15 | Bangabandhu Sheikh Mujib Medical University | 3.8 | 115 |

9. Use Right Join

Query -

SELECT

Bugresistance.BugresistanceID,

Bugresistance.StudentName,

University.Department,

University.CGPA

FROM

University

RIGHT JOIN

Bugresistance

ON

University.StudentID = Bugresistance.StudentID;

Result -

| BugresistanceID | StudentName | Department | CGPA |
|-----------------|-----------------|-------------------------|------|
| 101 | Nafis Ulfat | Computer Science | 3.8 |
| 102 | Sabrina Islam | Civil Engineering | 3.9 |
| 103 | Shafiqul Rahman | Economics | 3.7 |
| 104 | Mim Chowdhury | Business Administration | 3.5 |
| 105 | Hasibul Hasan | Physics | 3.6 |
| 106 | Ayesha Siddiqua | Biotechnology | 3.8 |
| 107 | Tariq Islam | English Literature | 3.4 |
| 108 | Samiha Khan | Environmental Science | 3.6 |
| 109 | Rakibul Islam | Information Technology | 3.5 |
| 110 | Mehedi Hasan | Genetic Engineering | 3.9 |
| 111 | Farzana Akter | Pharmacy | 3.7 |
| 112 | Tanvir Hossain | Architecture | 3.3 |
| 113 | Jannat Ara | Electrical Engineering | 3.4 |
| 114 | Fahim Iqbal | Software Engineering | 3.2 |
| 115 | Shakib Ali | Public Health | 3.8 |

10. Use Full Outer Join

Query -

SELECT

University.StudentID,

Bugresistance.City,

Bugresistance.ContactNumber,

University.Department

FROM

University

LEFT JOIN

Bugresistance

ON

University.StudentID = Bugresistance.StudentID

UNION

SELECT

University.StudentID,

Bugresistance.City,

Bugresistance.ContactNumber,

University.Department

FROM

University

RIGHT JOIN

Bugresistance

ON

University.StudentID = Bugresistance.StudentID;

| StudentID | City | ContactNumber | Department |
|-----------|------------|---------------|-------------------------|
| 1 | Dhaka | 01712345678 | Computer Science |
| 2 | Dhaka | 01812345678 | Civil Engineering |
| 3 | Savar | 01612345678 | Economics |
| 4 | Dhaka | 01912345678 | Business Administration |
| 5 | Chittagong | 01722345678 | Physics |
| 6 | Khulna | 01822345678 | Biotechnology |
| 7 | Rajshahi | 01512345678 | English Literature |
| 8 | Dhaka | 01622345678 | Environmental Science |
| 9 | Dhaka | 01922345678 | Information Technology |
| 10 | Sylhet | 01732345678 | Genetic Engineering |
| 11 | Dhaka | 01832345678 | Pharmacy |
| 12 | Dhaka | 01522345678 | Architecture |
| 13 | Dhaka | 01632345678 | Electrical Engineering |
| 14 | Dhaka | 01742345678 | Software Engineering |
| 15 | Dhaka | 01932345678 | Public Health |

11. Select All Where CGPA Greater than 3.50

Query -

SELECT *
FROM university
WHERE CGPA > 3.50;

Result -



12. Specific Student ID

Query -

SELECT *
FROM bugresistance
WHERE BugresistanceID = 107;

Result -



13. Update Email

Query -

UPDATE Bugresistance SET Email = 'islamnewemail@example.com' WHERE BugresistanceID = 107;

Result -

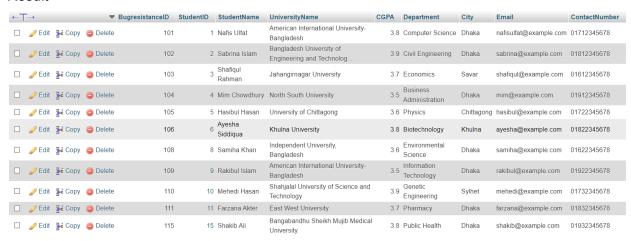


14. Delete StudentID

Query -

DELETE FROM Bugresistance
WHERE StudentID IN (SELECT StudentID FROM University WHERE CGPA < 3.5);

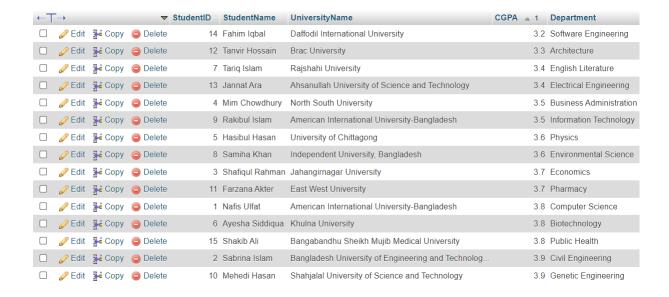
Result -



15. Order By ASC

Query -

SELECT *
FROM university
ORDER BY CGPA;



16. Order By Desc

Query -

SELECT *
FROM university
ORDER BY CGPA DESC;

Result -

| ←Ţ | _→ | | ∇ | StudentID | StudentName | UniversityName | CGPA ▼ 1 | Department |
|----|----------------|-----------------|----------|-----------|-----------------|--|----------|---------------------------|
| | | ≩ Copy | Delete | 2 | Sabrina Islam | Bangladesh University of Engineering and Technolog | 3. | 9 Civil Engineering |
| | <i>⊘</i> Edit | ≩ Copy | Delete | 10 | Mehedi Hasan | Shahjalal University of Science and Technology | 3. | 9 Genetic Engineering |
| | | ≩-i Copy | Delete | 1 | Nafis Ulfat | American International University-Bangladesh | 3. | 8 Computer Science |
| | <i>⊘</i> Edit | ≩ Copy | Delete | 6 | Ayesha Siddiqua | Khulna University | 3. | 8 Biotechnology |
| | | ≩ Copy | Delete | 15 | Shakib Ali | Bangabandhu Sheikh Mujib Medical University | 3. | 8 Public Health |
| | <i>⊘</i> Edit | ≩ Copy | Delete | 3 | Shafiqul Rahman | Jahangirnagar University | 3. | 7 Economics |
| | | ≩ Copy | Delete | 11 | Farzana Akter | East West University | 3. | 7 Pharmacy |
| | <i>⊘</i> Edit | ≩ Сору | Delete | 5 | Hasibul Hasan | University of Chittagong | 3. | 6 Physics |
| | | ≩ Copy | Delete | 8 | Samiha Khan | Independent University, Bangladesh | 3. | 6 Environmental Science |
| | <i>⊘</i> Edit | ≩ Copy | Delete | 4 | Mim Chowdhury | North South University | 3. | 5 Business Administration |
| | | ≩ Copy | Delete | 9 | Rakibul Islam | American International University-Bangladesh | 3. | 5 Information Technology |
| | <i>⊘</i> Edit | ≩ Copy | Delete | 7 | Tariq Islam | Rajshahi University | 3. | 4 English Literature |
| | <i> ✓</i> Edit | ≩ Copy | Delete | 13 | Jannat Ara | Ahsanullah University of Science and Technology | 3. | 4 Electrical Engineering |
| | <i>⊘</i> Edit | ≩ сору | Delete | 12 | Tanvir Hossain | Brac University | 3. | 3 Architecture |
| | <i></i> € Edit | ≩ • Сору | Delete | 14 | Fahim Iqbal | Daffodil International University | 3. | 2 Software Engineering |

17. Truncate table

Query -

TRUNCATE TABLE bugresistance;

Result -

BugresistanceID StudentID StudentName UniversityName CGPA Department City Email ContactNumber

Query results operations