

*“Heaven’s Light is Our Guide”*

Rajshahi University of Engineering & Technology, Rajshahi



Department of Electrical & Computer  
Engineering (ECE-2111)

**Course Code:** ECE-2216

**Course Title:** Database Systems Sessional

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## Experiment No: 01

**Experiment Name:** Create a database system for class 21 where there are two table for odd and even batch containing information for 10 students.

### Objectives:

- ❖ To learn about the database system using Xampp.
- ❖ To know about SQL system.
- ❖ To differentiate between DML and DDL.
- ❖ To learn about the query language to create tables.


### Query & Output:

#### 1. Creating the tables:

##### 1.1 Creating table for the odd batch:

```
1 CREATE TABLE odd_batch (  
2     id INT PRIMARY KEY,  
3     name VARCHAR(50),  
4     contact VARCHAR(15),  
5     blood_group VARCHAR(5),  
6     major_subjects VARCHAR(100),  
7     obtained_marks INT  
8 );
```

### Output:

| #                          | Name   | Type         | Collation          | Attributes | Null | Default | Comments | E |
|----------------------------|--|--------------|--------------------|------------|------|---------|----------|---|
| <input type="checkbox"/> 1 | id  | int(11)      |                    |            | No   | None    |          |   |
| <input type="checkbox"/> 2 | name   | varchar(50)  | utf8mb4_general_ci |            | Yes  | NULL    |          |   |
| <input type="checkbox"/> 3 | contact  | varchar(15)  | utf8mb4_general_ci |            | Yes  | NULL    |          |   |
| <input type="checkbox"/> 4 | blood_group  | varchar(5)   | utf8mb4_general_ci |            | Yes  | NULL    |          |   |
| <input type="checkbox"/> 5 | major_subjects   | varchar(100) | utf8mb4_general_ci |            | Yes  | NULL    |          |   |
| <input type="checkbox"/> 6 | obtained_marks   | int(11)      |                    |            | Yes  | NULL    |          |   |

## 1.2 Creating table for the odd batch:

```
1 CREATE TABLE even_batch (  
2     id INT PRIMARY KEY,  
3     name VARCHAR(50),  
4     contact VARCHAR(15),  
5     blood_group VARCHAR(5),  
6     major_subjects VARCHAR(100),  
7     obtained_marks INT  
8 );
```

### Output:

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0005 seconds.)

```
CREATE TABLE even_batch ( id INT PRIMARY KEY, name VARCHAR(50), contact VARCHAR(15), blood_group VARCHAR(5), major_subjects VARCHAR(100), obtained_marks INT );
```

### Output:

| Table                               | Action                                      | Rows | Type   | Collation          | Size     | Overhead |
|-------------------------------------|---|------|--------|--------------------|----------|----------|
| <input type="checkbox"/> even_batch | ★ Browse Structure Search Insert Empty Drop | 0    | InnoDB | utf8mb4_general_ci | 16.0 KiB | -        |
| <input type="checkbox"/> odd_batch  | ★ Browse Structure Search Insert Empty Drop | 0    | InnoDB | utf8mb4_general_ci | 16.0 KiB | -        |
| 2 tables                            | Sum   | 0    | InnoDB | utf8mb4_general_ci | 32.0 KiB | 0 B      |

## 2. Inserting data into the tables:

### 2.1 Inserting data into odd\_batch:

```
1 INSERT INTO odd_batch (id, name, contact, blood_group, major_subjects, obtained_marks)  
2 VALUES  
3 (2110001, 'Sadik', '017-756-7890', 'A+', 'Math, Physics', 85),  
4 (2101139, 'Ashik', '234-567-8901', 'B-', 'Humanities, Accounting', 92),  
5 (2109053, 'Sharif', '345-678-9012', 'O+', 'Literature, Geography', 78),  
6 (2109119, 'Sabbir', '456-789-0123', 'AB+', 'Computer Science, Information Technology', 88),  
7 (2105113, 'Noman', '567-890-1234', 'A-', 'Economics, Business', 81),  
8 (2110015, 'Khalid', '678-901-2345', 'B+', 'Physics, Math', 93),  
9 (2110029, 'Naeem', '789-012-3456', 'O-', 'English, Law', 90),  
10 (2109057, 'Sadi', '890-123-4567', 'A+', 'Textiles, Architecture', 95),  
11 (2109009, 'Pritom', '901-234-5678', 'B-', 'History, Politics', 76),  
12 (2110041, 'Ribbie', '012-345-6789', 'AB-', 'Biology, Chemistry', 89);
```

### Output:

| id      | name   | contact      | blood_group | major_subjects                           | obtained_marks |
|---------|--------|--------------|-------------|--|----------------|
| 2101139 | Ashik  | 234-567-8901 | B-          | Humanities, Accounting                   | 92             |
| 2105113 | Noman  | 567-890-1234 | A-          | Economics, Business                      | 81             |
| 2109009 | Pritom | 901-234-5678 | B-          | History, Politics                        | 76             |
| 2109053 | Sharif | 345-678-9012 | O+          | Literature, Geography                    | 78             |
| 2109057 | Sadi   | 890-123-4567 | A+          | Textiles, Architecture                   | 95             |
| 2109119 | Sabbir | 456-789-0123 | AB+         | Computer Science, Information Technology | 88             |
| 2110001 | Sadik  | 017-756-7890 | A+          | Math, Physics                            | 85             |
| 2110015 | Khalid | 678-901-2345 | B+          | Physics, Math                            | 93             |
| 2110029 | Naeem  | 789-012-3456 | O-          | English, Law                             | 90             |
| 2110041 | Ribbie | 012-345-6789 | AB-         | Biology, Chemistry                       | 89             |

## 2.2 Inserting data into even\_batch:

```

1 INSERT INTO even_batch (id, name, contact, blood_group, major_subjects, obtained_marks)
2 VALUES
3 (2113058, 'Fardin', '123-456-7890', 'A+', 'Math, Statistics', 86),
4 (2112048, 'Emon', '234-567-8901', 'B-', 'Astronomy, Chemistry', 93),
5 (2104038, 'Siam', '345-678-9012', 'O+', 'Engineering, Information technology', 79),
6 (2102054, 'Noon', '456-789-0123', 'AB+', 'Biology, Agriculture', 87),
7 (2110050, 'Sazid', '567-890-1234', 'A-', 'Economics, Business', 82),
8 (2103016, 'Tonoy', '678-901-2345', 'B+', 'Physics, Thermodynamics', 72),
9 (2109170, 'Tanvir', '789-012-3456', 'O-', 'English, Literature', 91),
10 (2110018, 'Shahin', '890-123-4567', 'A+', 'Biotechnology, Microbiology', 96),
11 (2101032, 'Faez', '901-234-5678', 'B-', 'History, Politics', 75),
12 (2110014, 'Noman', '012-345-6789', 'AB-', 'Ecology, Chemistry', 90);

```

## Output:

| id      | name   | contact      | blood_group | major_subjects                      | obtained_marks |
|---------|--------|--------------|-------------|-------------------------------------|----------------|
| 2101032 | Faez   | 901-234-5678 | B-          | History, Politics                   | 75             |
| 2102054 | Noor   | 456-789-0123 | AB+         | Biology, Agriculture                | 87             |
| 2103016 | Tonoy  | 678-901-2345 | B+          | Physics, Thermodynamics             | 72             |
| 2104038 | Siam   | 345-678-9012 | O+          | Engineering, Information technology | 79             |
| 2109170 | Tanvir | 789-012-3456 | O-          | English, Literature                 | 91             |
| 2110014 | Noman  | 012-345-6789 | AB-         | Ecology, Chemistry                  | 90             |
| 2110018 | Shahin | 890-123-4567 | A+          | Biotechnology, Microbiology         | 96             |
| 2110050 | Sazid  | 567-890-1234 | A-          | Economics, Business                 | 82             |
| 2112048 | Emon   | 234-567-8901 | B-          | Astronomy, Chemistry                | 93             |
| 2113058 | Fardin | 123-456-7890 | A+          | Math, Statistics                    | 86             |

**Query 1:** Get all students who scored more than 80 marks from both odd and even batches.

```

1 -- Query to fetch students from odd_batch who scored more than 80 marks
2 SELECT * FROM odd_batch WHERE obtained_marks > 80;
3
4 -- Query to fetch students from even_batch who scored more than 80 marks
5 SELECT * FROM even_batch WHERE obtained_marks > 80;

```

## Output:

| id      | name   | contact      | blood_group | major_subjects                           | obtained_marks |
|---------|--------|--------------|-------------|--|----------------|
| 2101139 | Ashik  | 234-567-8901 | B-          | Humanities, Accounting                   | 92             |
| 2105113 | Noman  | 567-890-1234 | A-          | Economics, Business                      | 81             |
| 2109057 | Sadi   | 890-123-4567 | A+          | Textiles, Architecture                   | 95             |
| 2109119 | Sabbir | 456-789-0123 | AB+         | Computer Science, Information Technology | 88             |
| 2110001 | Sadik  | 017-756-7890 | A+          | Math, Physics                            | 85             |
| 2110015 | Khalid | 678-901-2345 | B+          | Physics, Math                            | 93             |
| 2110029 | Naeem  | 789-012-3456 | O-          | English, Law                             | 90             |
| 2110041 | Ribbie | 012-345-6789 | AB-         | Biology, Chemistry                       | 89             |

| id      | name   | contact      | blood_group | major_subjects              | obtained_marks |
|---------|--------|--------------|-------------|-----------------------------|----------------|
| 2102054 | Noor   | 456-789-0123 | AB+         | Biology, Agriculture        | 87             |
| 2109170 | Tanvir | 789-012-3456 | O-          | English, Literature         | 91             |
| 2110014 | Noman  | 012-345-6789 | AB-         | Ecology, Chemistry          | 90             |
| 2110018 | Shahin | 890-123-4567 | A+          | Biotechnology, Microbiology | 96             |
| 2110050 | Sazid  | 567-890-1234 | A-          | Economics, Business         | 82             |
| 2112048 | Emon   | 234-567-8901 | B-          | Astronomy, Chemistry        | 93             |
| 2113058 | Fardin | 123-456-7890 | A+          | Math, Statistics            | 86             |

**Query 2:** Retrieve the names and major subjects of students with blood group 'A+' in the odd batch.

```

1 -- List names and major subjects for students with blood group 'A+' from odd_batch
2 SELECT name, major_subjects FROM odd_batch WHERE blood_group = 'A+';

```

## Output:

| name  | major_subjects         |
|-------|------------------------|
| Sadi  | Textiles, Architecture |
| Sadik | Math, Physics          |

**Query 3:** Find the average marks of students from both batches.

```
1 -- Get the average marks from odd_batch
2 SELECT AVG(obtained_marks) AS avg_marks_odd FROM odd_batch;
3
4 -- Get the average marks from even_batch
5 SELECT AVG(obtained_marks) AS avg_marks_even FROM even_batch;
```

**Output:**

- Odd Batch Average: 85.7
- Even Batch Average: 85.1