



Lab Assignment Report

Only for course Teacher						
		Needs Improvement	Developing	Sufficient	Above Average	Total Mark
Allocate mark & Percentage		25%	50%	75%	100%	10
Clarity	2					
Content Quality	4					
Spelling & Grammar	2					
Organization and Formatting	2					
Total obtained mark						
Comments						

Semester: Fall 2024

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Student ID: 0242310005341031

Batch: 40

Section: D

Course Code: SE 224

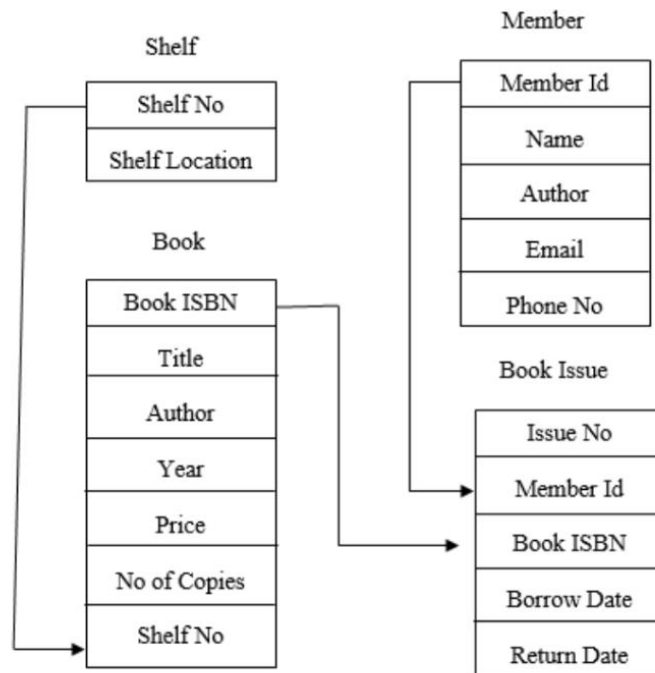
Course Name: Database Management System Lab

Course Teacher Name: Tapushe Rabaya Toma

Designation: Assistant Professor

Submission Date: 08/12/2024

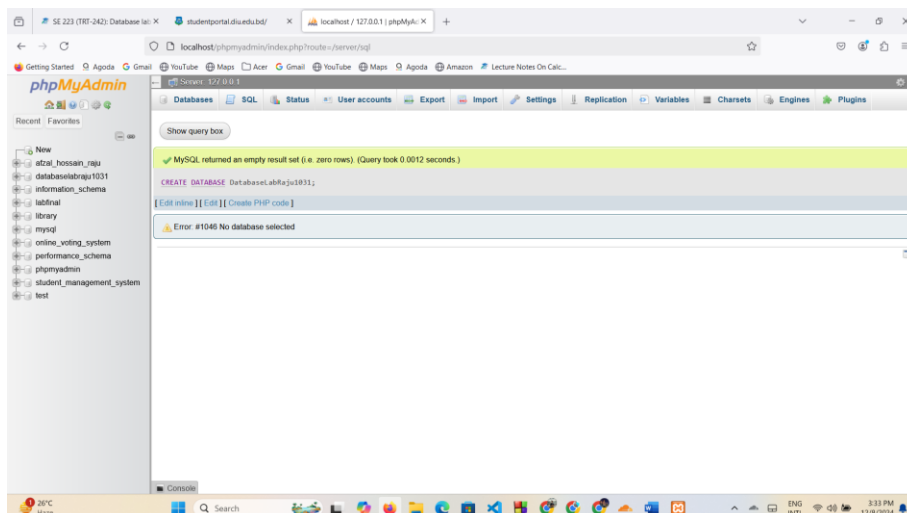
Table diagram:



There are four tables including the given database,

1. Shelf (Shelf No, Shelf Location)
2. Book (Book ISBN, Title, Author, Year, Price, No of Copies, Shelf No)
3. Member (Member Id, Name, Author, Email, Phone No)
4. Book Issue (Issue No, Member Id, Book ISBN, Borrow Date, Return Date)

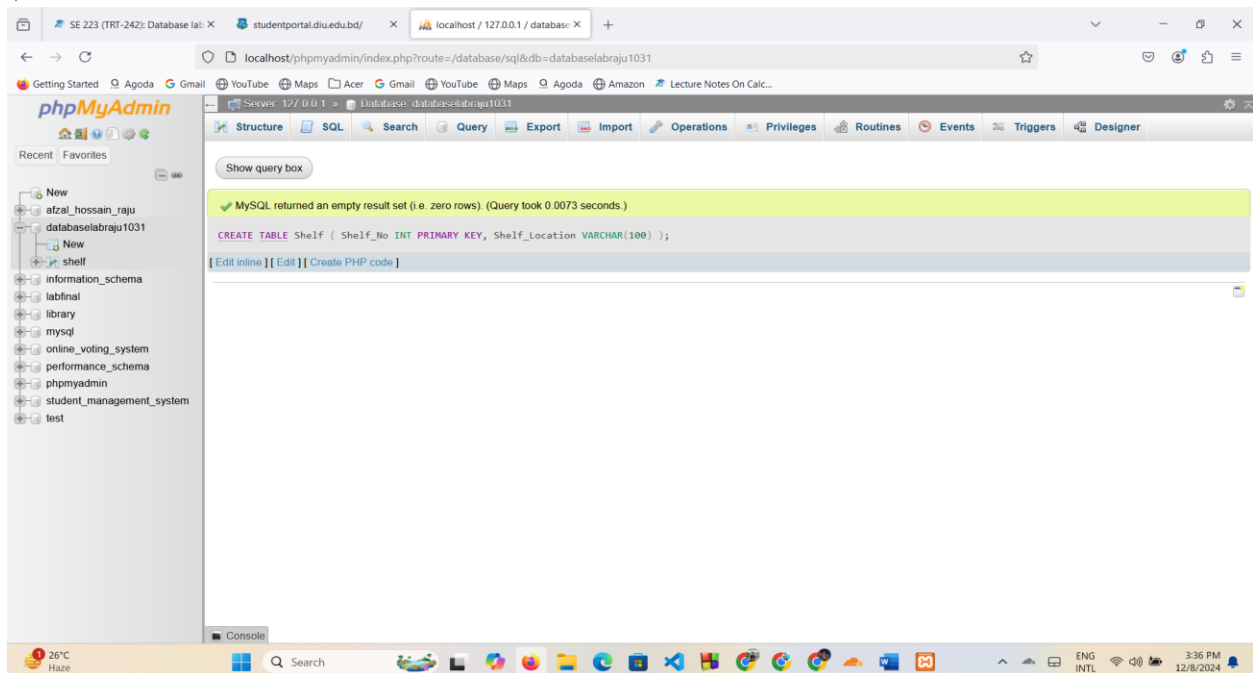
Create database as databaselabraju1031 In SQL:



1. Create all tables with proper "Primary key" and "Foreign Keys":

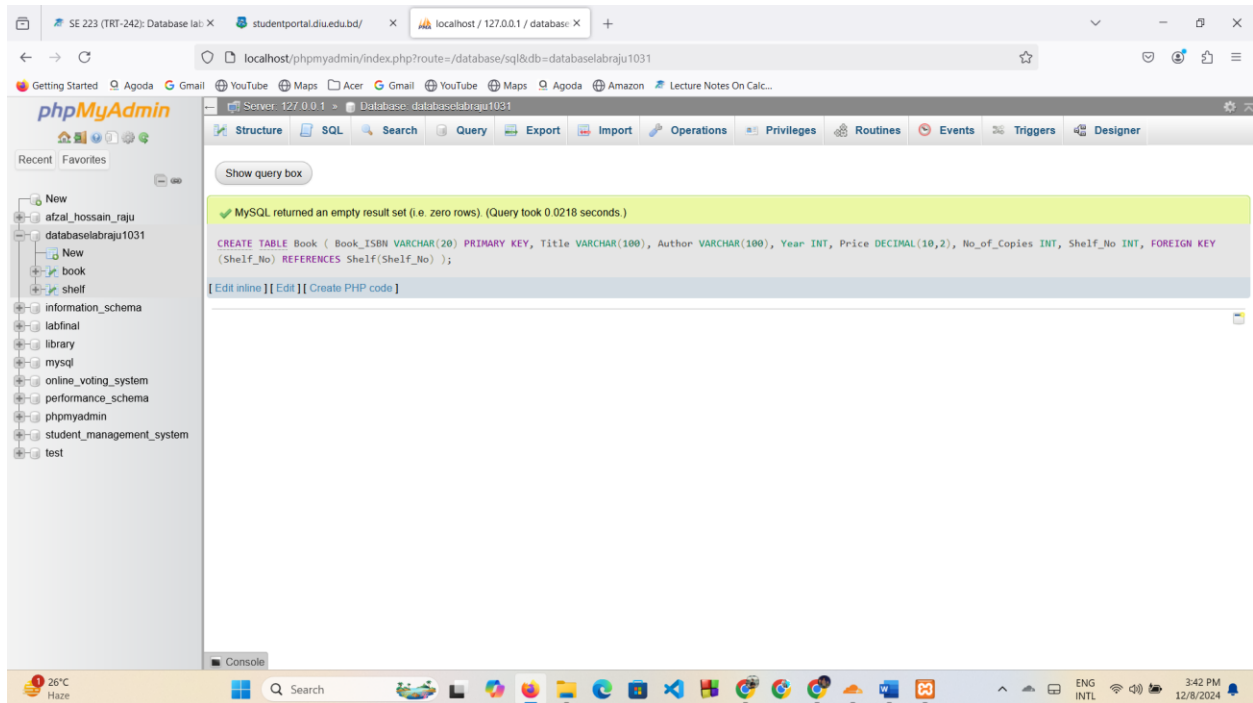
SQL:

```
CREATE TABLE Shelf (  
Shelf_No INT PRIMARY KEY,  
Shelf_Location VARCHAR(100)  
);
```



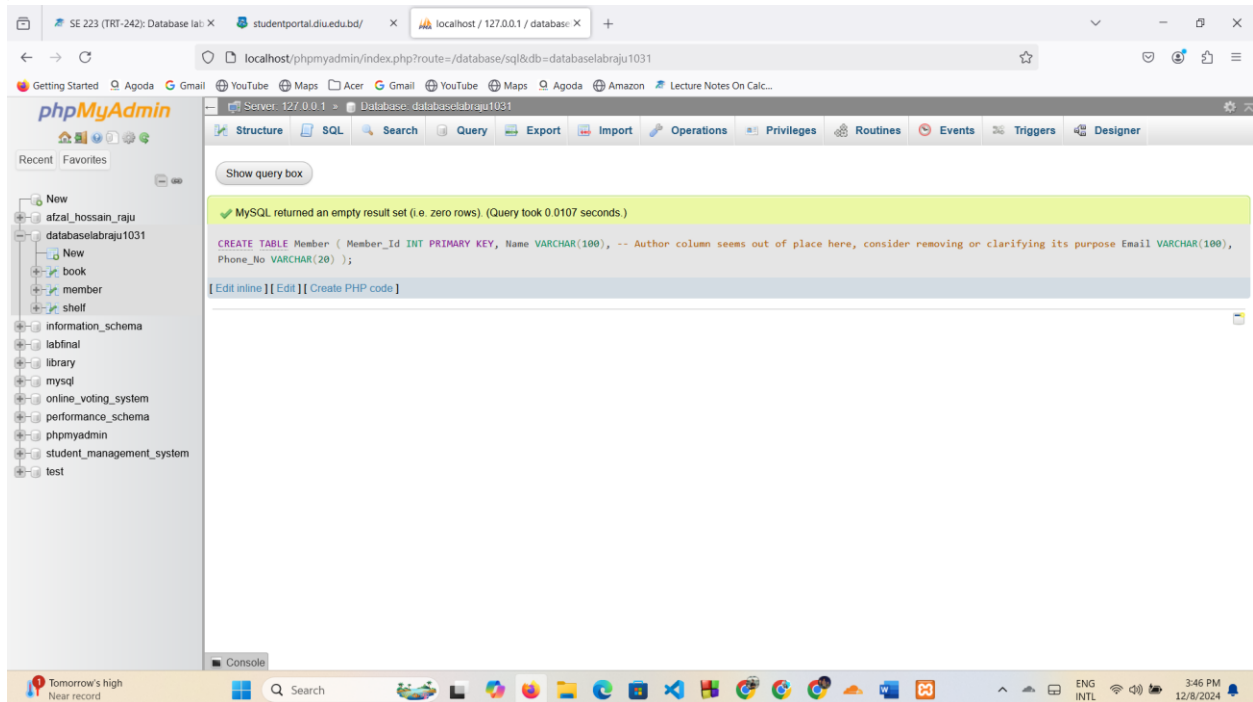
SQL:

```
CREATE TABLE Book (  
Book_ISBN VARCHAR(20) PRIMARY KEY,  
Title VARCHAR(100),  
Author VARCHAR(100),  
Year INT,  
Price DECIMAL(10,2),  
No_of_Copies INT,  
Shelf_No INT,  
FOREIGN KEY (Shelf_No) REFERENCES Shelf(Shelf_No));
```



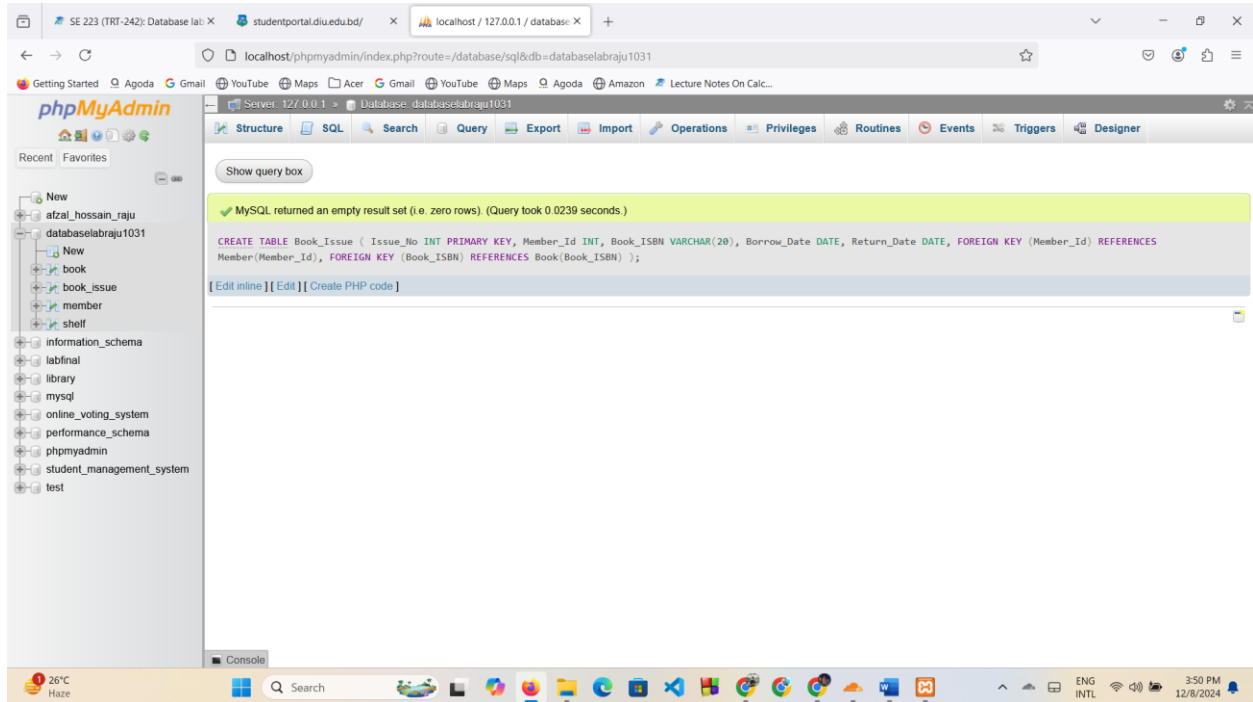
SQL:

```
CREATE TABLE Member (
Member_Id INT PRIMARY KEY,
Name VARCHAR(100),
Email VARCHAR(100),
Phone_No VARCHAR(20)
);
```



SQL:

```
CREATE TABLE Book_Issue (  
Issue_No INT PRIMARY KEY,  
Member_Id INT,  
Book_ISBN VARCHAR(20),  
Borrow_Date DATE,  
Return_Date DATE,  
FOREIGN KEY (Member_Id) REFERENCES Member(Member_Id),  
FOREIGN KEY (Book_ISBN) REFERENCES Book(Book_ISBN)  
);
```



2. Insert a minimum of 6 Tuples defining SQL for each table:

Insert into table shelf:

SQL:

INSERT INTO Shelf (Shelf_No, Shelf_Location) VALUES

(1, 'A 001'),

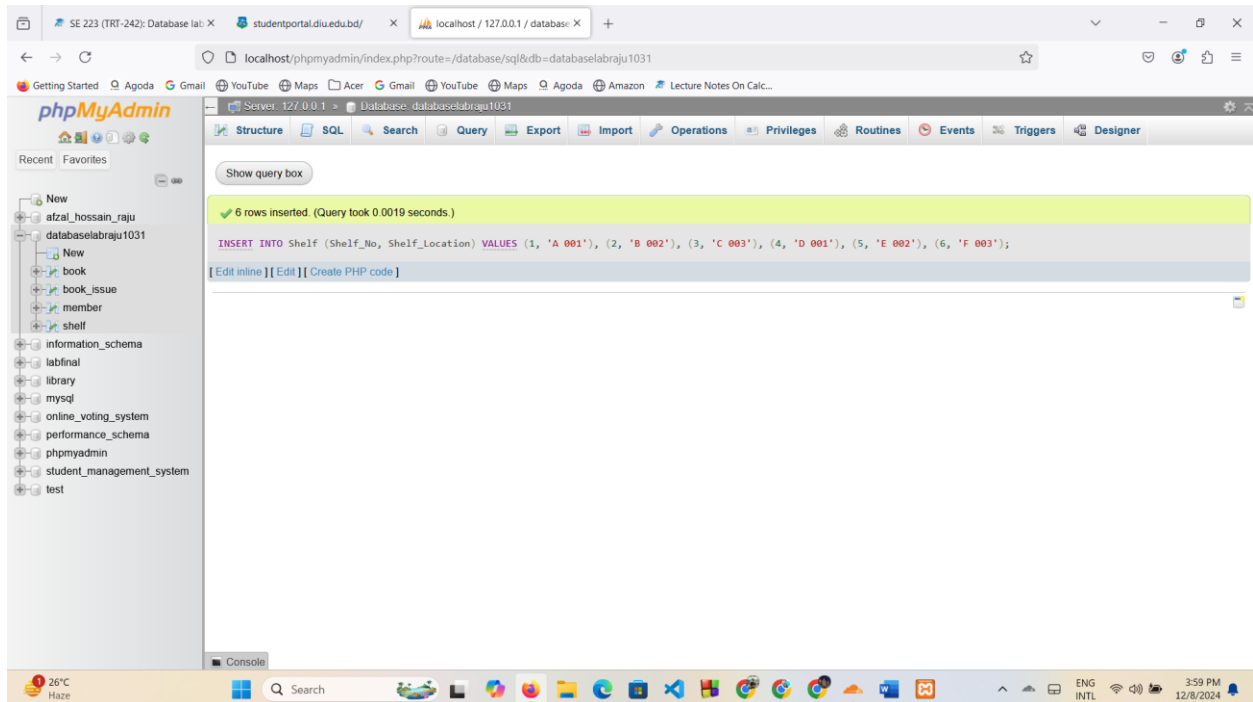
(2, 'B 002'),

(3, 'C 003')

(4, 'D 001'),

(5, 'E 002'),

(6, 'F 003');



Insert into Book table:

SQL:

INSERT INTO Book (Book_ISBN, Title, Author, Year, Price, No_of_Copies, Shelf_No) VALUES

('ISBN1', 'Book 1', 'Author 1', 2023, 19.99, 5, 1),

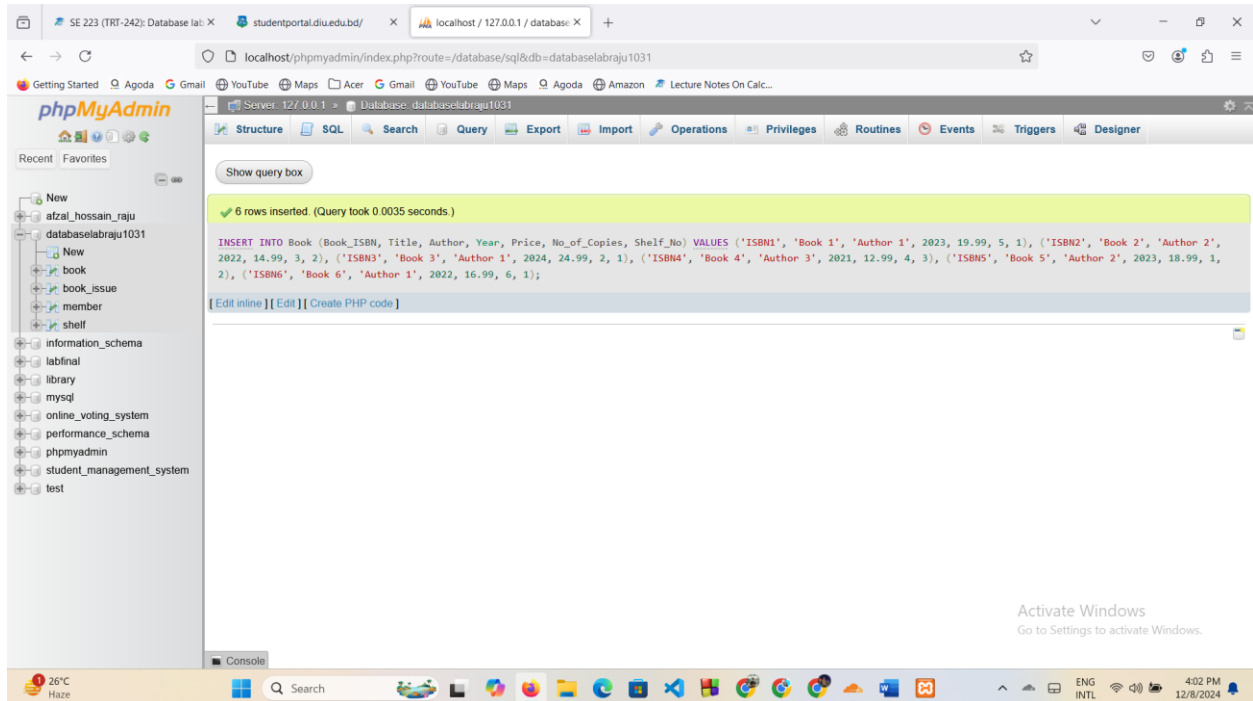
('ISBN2', 'Book 2', 'Author 2', 2022, 14.99, 3, 2),

('ISBN3', 'Book 3', 'Author 1', 2024, 24.99, 2, 1),

('ISBN4', 'Book 4', 'Author 3', 2021, 12.99, 4, 3),

('ISBN5', 'Book 5', 'Author 2', 2023, 18.99, 1, 2),

('ISBN6', 'Book 6', 'Author 1', 2022, 16.99, 6, 1);

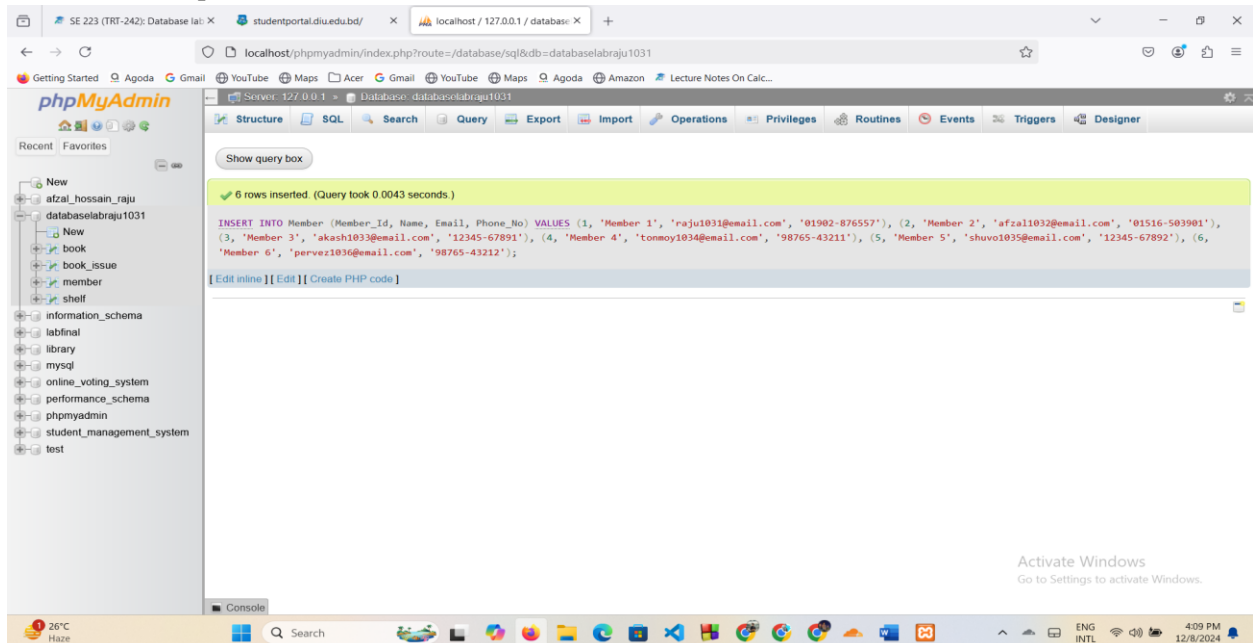


Insert into Member table:

SQL:

INSERT INTO Member (Member_Id, Name, Email, Phone_No) VALUES

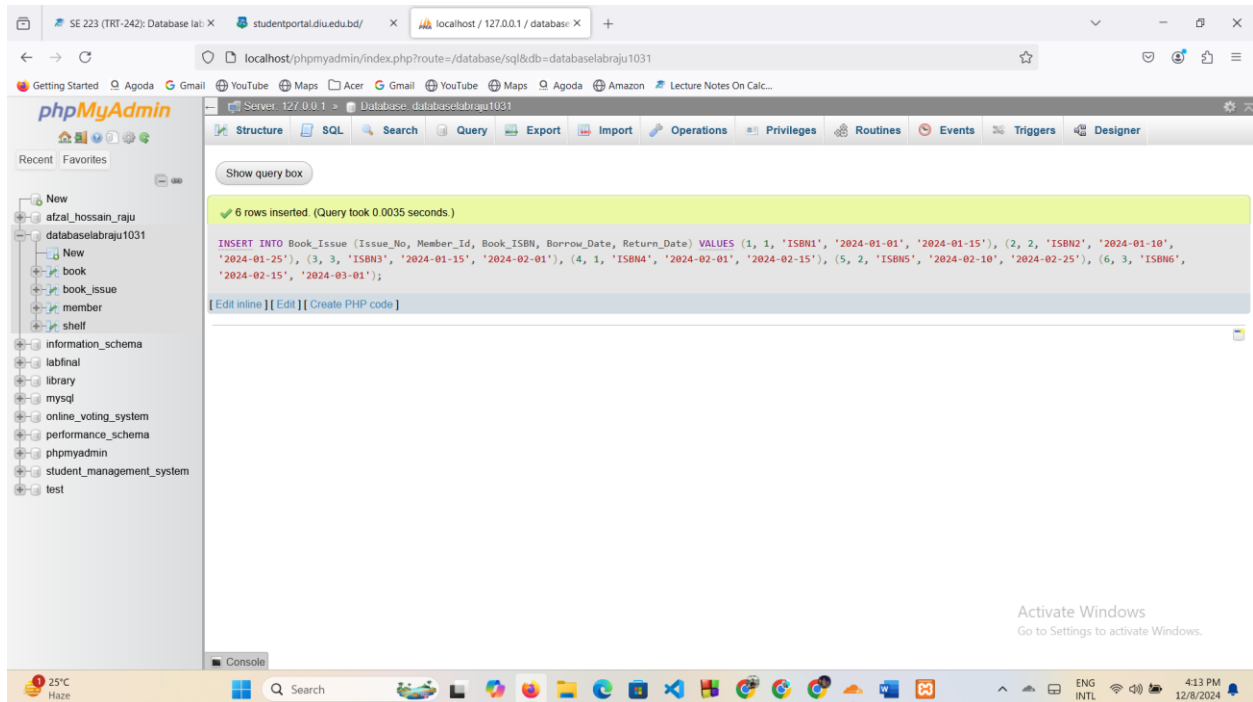
- (1, 'Member 1', 'raju1031@email.com', '01902-876557'),
- (2, 'Member 2', 'afzal1032@email.com', '01516-503901'),
- (3, 'Member 3', 'akash1033@email.com', '12345-67891'),
- (4, 'Member 4', 'tonmoy1034@email.com', '98765-43211'),
- (5, 'Member 5', 'shuvo1035@email.com', '12345-67892'),
- (6, 'Member 6', 'pervez1036@email.com', '98765-43212');



Insert into Book_Issue table:

SQL:

```
INSERT INTO Book_Issue (Issue_No, Member_Id, Book_ISBN, Borrow_Date, Return_Date) VALUES  
(1, 1, 'ISBN1', '2024-01-01', '2024-01-15'),  
(2, 2, 'ISBN2', '2024-01-10', '2024-01-25'),  
(3, 3, 'ISBN3', '2024-01-15', '2024-02-01'),  
(4, 1, 'ISBN4', '2024-02-01', '2024-02-15'),  
(5, 2, 'ISBN5', '2024-02-10', '2024-02-25'),  
(6, 3, 'ISBN6', '2024-02-15', '2024-03-01');
```



3. Select all the books with title in ascending order:

SQL:

SELECT Title FROM Book ORDER BY Title ASC;

The screenshot shows the phpMyAdmin interface with the 'Book' table selected. The SQL query 'SELECT Title FROM Book ORDER BY Title ASC;' has been executed successfully, returning 6 rows of book titles: Book 1, Book 2, Book 3, Book 4, Book 5, and Book 6. The interface includes a sidebar with a database structure tree, a top navigation bar, and a bottom status bar.

4. Select the book's Title Borrowed by the Member whose Id is 1:

SQL:

SELECT b.Title

FROM Book_Issue bi

JOIN Book b ON bi.Book_ISBN = b.Book_ISBN

WHERE bi.Member_Id = 1;

The screenshot shows the phpMyAdmin interface with the 'Book_Issue' table selected. The SQL query 'SELECT b.Title FROM Book_Issue bi JOIN Book b ON bi.Book_ISBN = b.Book_ISBN WHERE bi.Member_Id = 1;' has been executed successfully, returning 2 rows of book titles: Book 1 and Book 4. The interface includes a sidebar with a database structure tree, a top navigation bar, and a bottom status bar.

5. Select the top 50 Book Issue:

SQL:

```
SELECT * FROM Book_Issue LIMIT 50;
```

The screenshot shows the phpMyAdmin interface with the 'Book_Issue' table selected. The query 'SELECT * FROM Book_Issue LIMIT 50;' has been executed, displaying 5 rows. The table structure is as follows:

Issue_No	Member_Id	Book_ISBN	Borrow_Date	Return_Date
1	1	ISBN1	2024-01-01	2024-01-15
2	2	ISBN2	2024-01-10	2024-01-25
3	3	ISBN3	2024-01-15	2024-02-01
4	1	ISBN4	2024-02-01	2024-02-15
5	2	ISBN5	2024-02-10	2024-02-25
6	3	ISBN6	2024-02-15	2024-03-01

6. Select the Books of Shelf Location 'A 001':

SQL:

```
SELECT b.Title
```

```
FROM Book b
```

```
JOIN Shelf s ON b.Shelf_No = s.Shelf_No
```

```
WHERE s.Shelf_Location = 'A 001';
```

The screenshot shows the phpMyAdmin interface with the 'Book' table selected. The query 'SELECT b.Title FROM Book b JOIN Shelf s ON b.Shelf_No = s.Shelf_No WHERE s.Shelf_Location = 'A 001';' has been executed, displaying 3 rows. The results are as follows:

Title
Book 1
Book 3
Book 6

7. Select the total NoOfCopies of Books by each Author:

SQL:

```
SELECT Author, SUM(No_of_Copies) AS Total_Copies  
FROM Book GROUP BY Author;
```

The screenshot shows the phpMyAdmin web interface. The left sidebar displays a database structure with a tree view. The main panel shows the 'Book' table selected. A query box contains the following SQL statement:

```
SELECT Author, SUM(No_of_Copies) AS Total_Copies FROM Book GROUP BY Author;
```

The query results are displayed in a table with the following data:

Author	Total_Copies
Author 1	13
Author 2	4
Author 3	4

The interface also includes a 'Query results operations' section with options like 'Print', 'Copy to clipboard', 'Export', 'Display chart', and 'Create view'. The bottom status bar shows the system time as 4:36 PM on 12/8/2024.

8. Select the average price of Books of each author

SQL:SELECT Author, AVG(Price) AS Average_Price

FROM Book

GROUP BY Author;

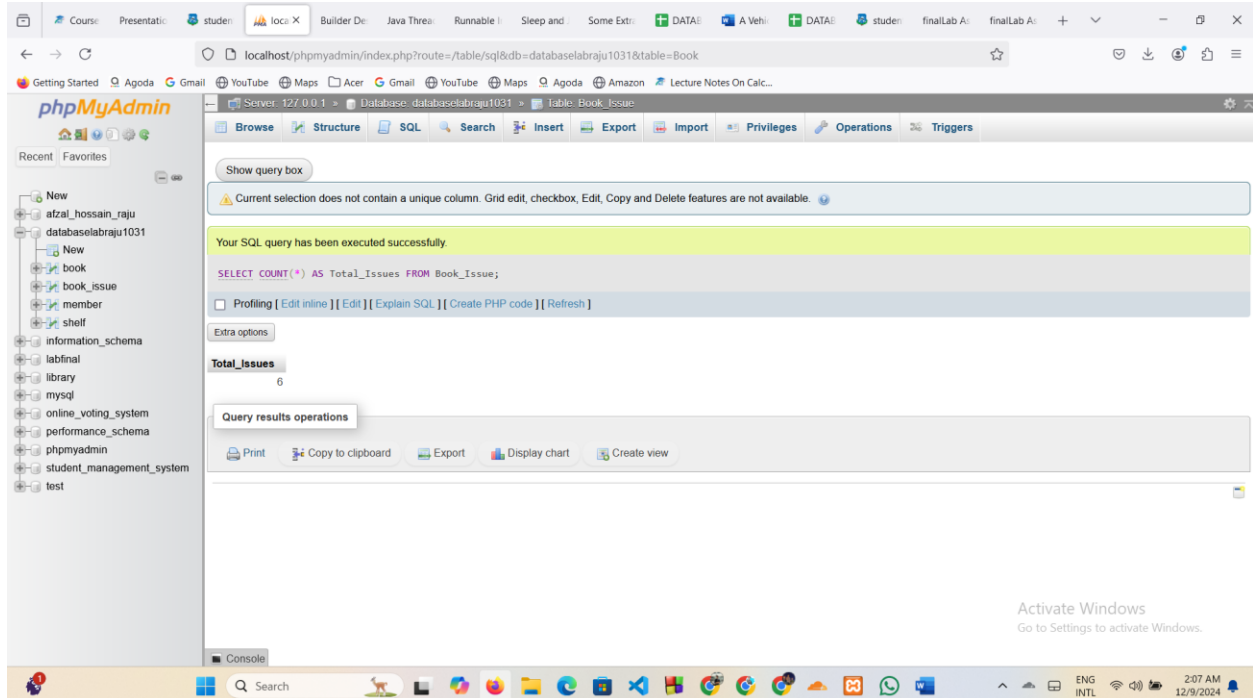
The screenshot shows the phpMyAdmin web interface in a browser. The left sidebar displays a database structure with 'atzal_hossain_raju' selected. The main panel shows the 'Book' table selected. A SQL query is entered in the query box: `SELECT Author, AVG(Price) AS Average_Price FROM Book GROUP BY Author;`. The results are displayed in a table with two columns: 'Author' and 'Average_Price'. The table contains three rows of data. The status bar at the bottom indicates 'Showing rows 0 - 2 (3 total. Query took 0.0736 seconds.)'.

Author	Average_Price
Author 1	20.656667
Author 2	16.990000
Author 3	12.990000

9. Find how many issues are there in the database

SQL:SELECT COUNT(*) AS Total_Issues

FROM Book_Issue;

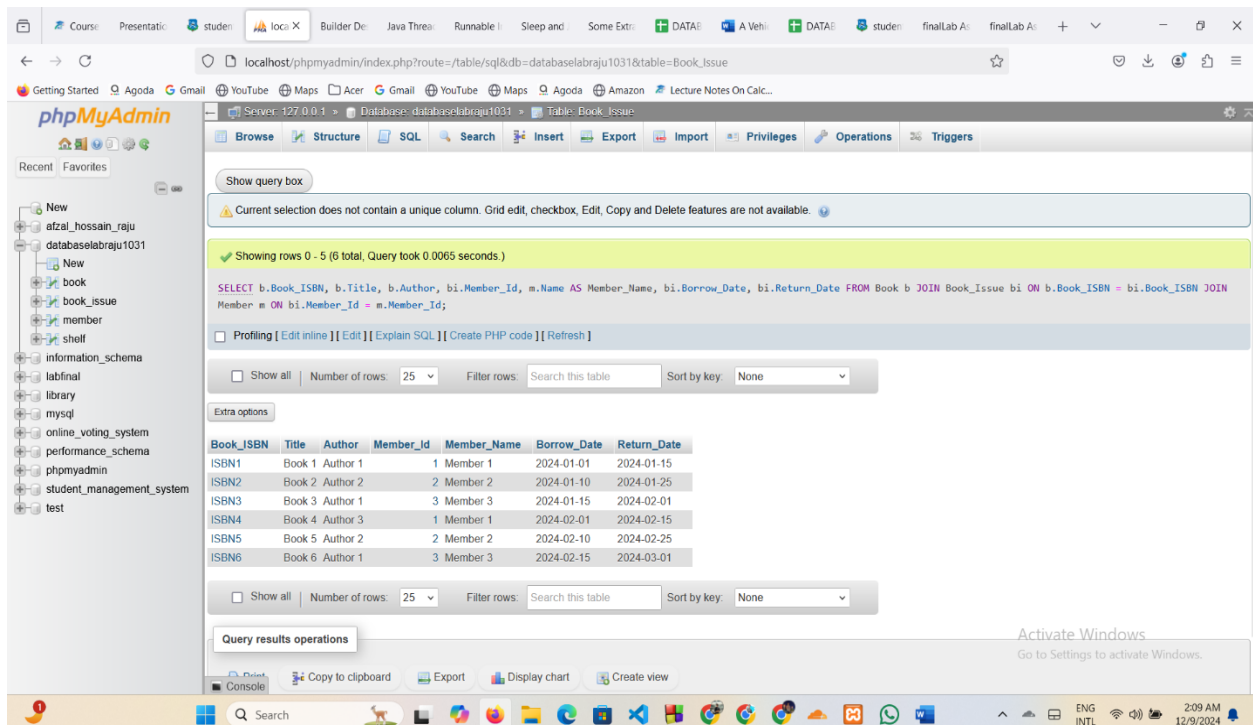


10. Find Book ISBN, Title, Author, Member Id, Member Name, Borrow Date and Return Date

SQL: SELECT b.Book_ISBN, b.Title, b.Author, bi.Member_Id, m.Name AS Member_Name, bi.Borrow_Date, bi.Return_Date FROM Book b

JOIN Book_Issue bi ON b.Book_ISBN = bi.Book_ISBN

JOIN Member m ON bi.Member_Id = m.Member_Id;



11. Select Book ISBN, Title, Borrow Date and Return Date of a member (Parameterized with member Id)

SQL:

SELECT

b.Book_ISBN,

b.Title,

bi.Borrow_Date,

bi.Return_Date

FROM Book b

JOIN Book_Issue bi ON b.Book_ISBN = bi.Book_ISBN

WHERE bi.Member_Id = 3;

The screenshot shows the phpMyAdmin web interface. The left sidebar displays a database structure with a tree view. The main panel shows a SQL query executed against the 'Book_Issue' table. The query is: `SELECT b.Book_ISBN, b.Title, bi.Borrow_Date, bi.Return_Date FROM Book b JOIN Book_Issue bi ON b.Book_ISBN = bi.Book_ISBN WHERE bi.Member_Id = 3;`. The results show two rows of data.

Book_ISBN	Title	Borrow_Date	Return_Date
ISBN3	Book 3	2024-01-15	2024-02-01
ISBN6	Book 6	2024-02-15	2024-03-01

At the bottom of the interface, there is a Windows taskbar with various application icons and a system tray showing the time as 2:12 AM on 12/9/2024.