



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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Batch: 40

Section: D

Course Code: SE 224

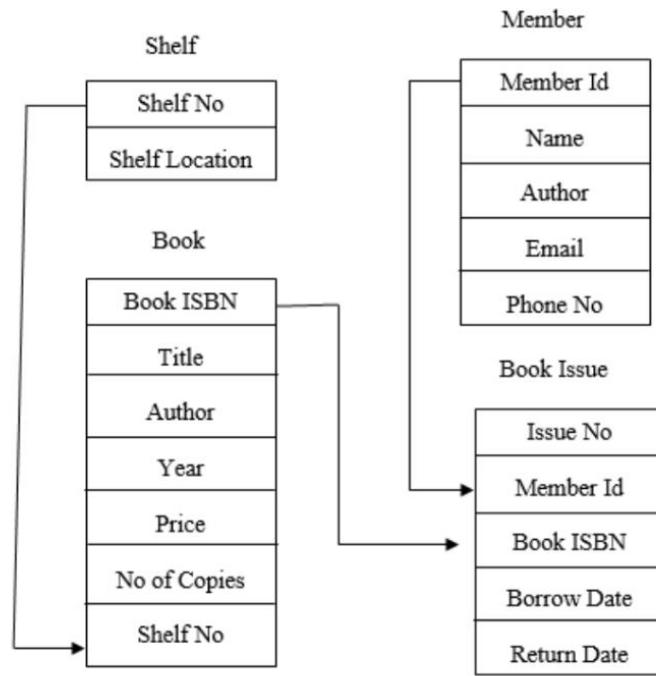
Course Name: Database Management System Lab

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 databaselabruju1031 In SQL:

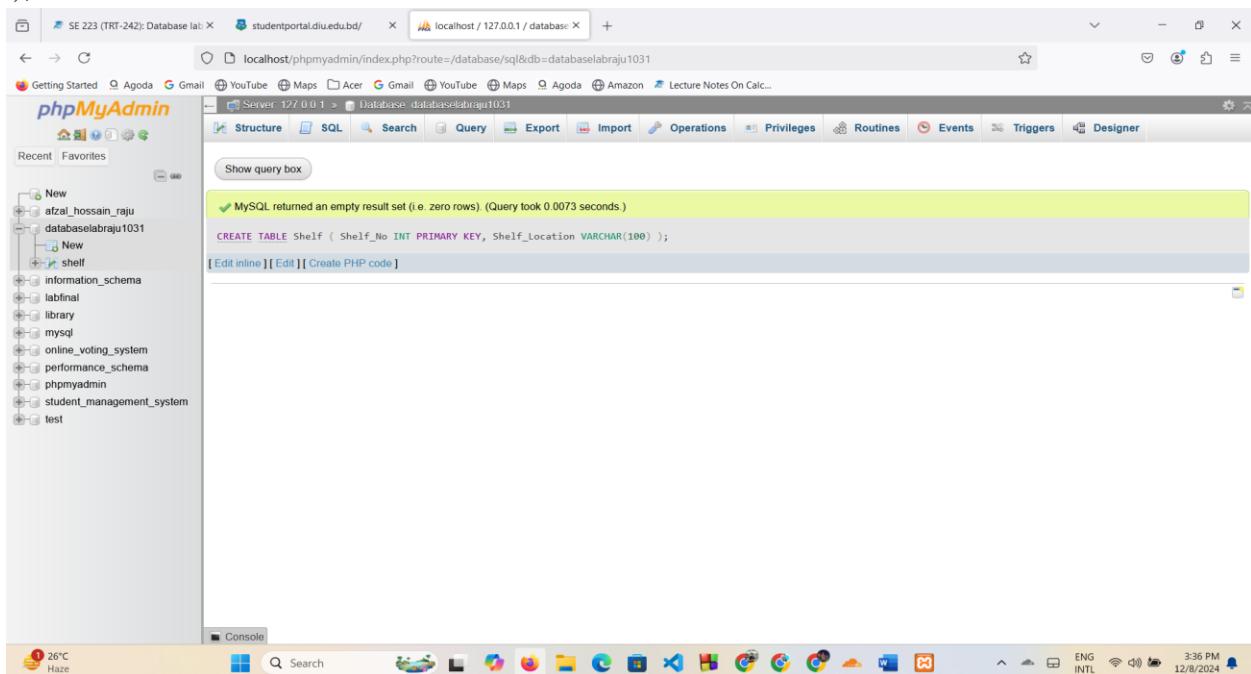
```

CREATE DATABASE `databaselabruju1031`;
    
```

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

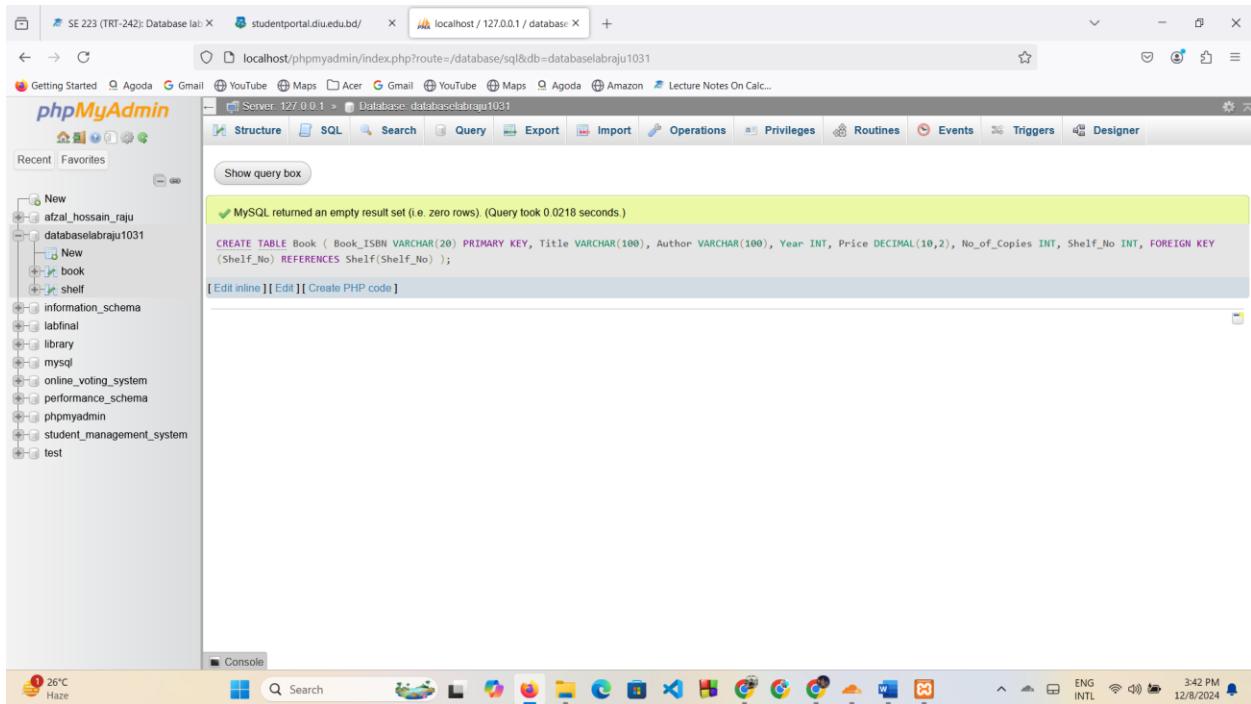
SQL:

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



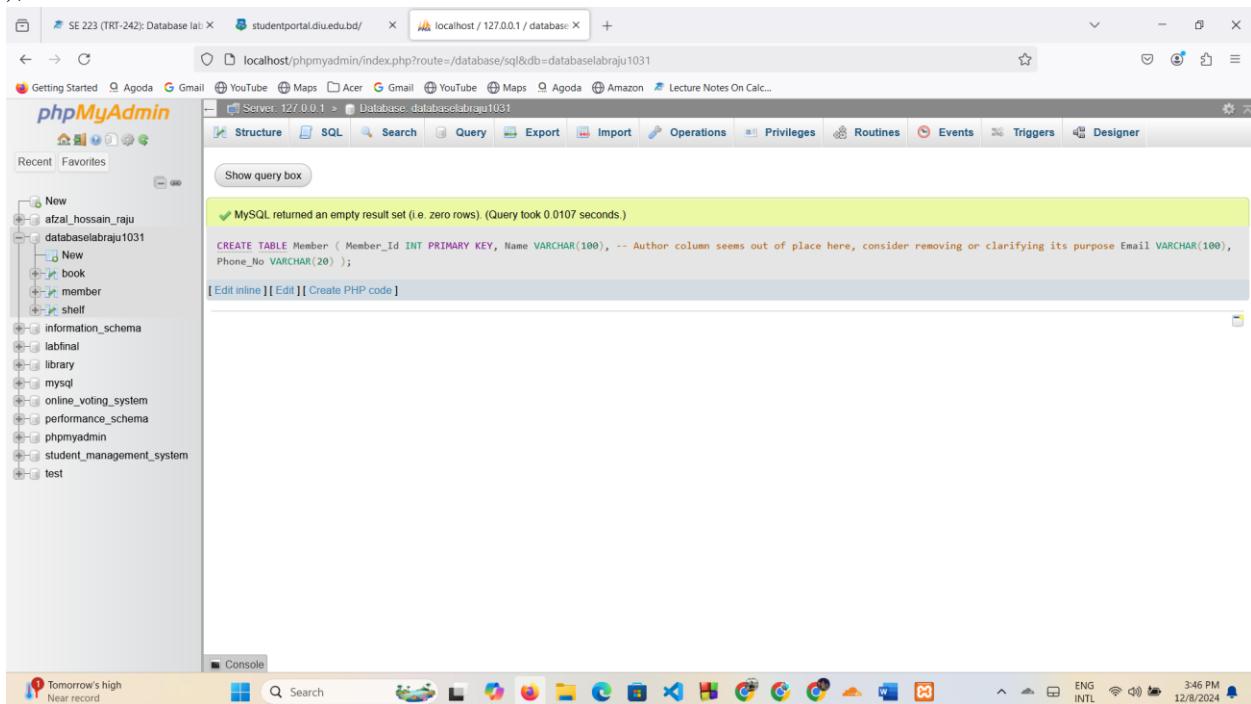
SQL:

```
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));
```



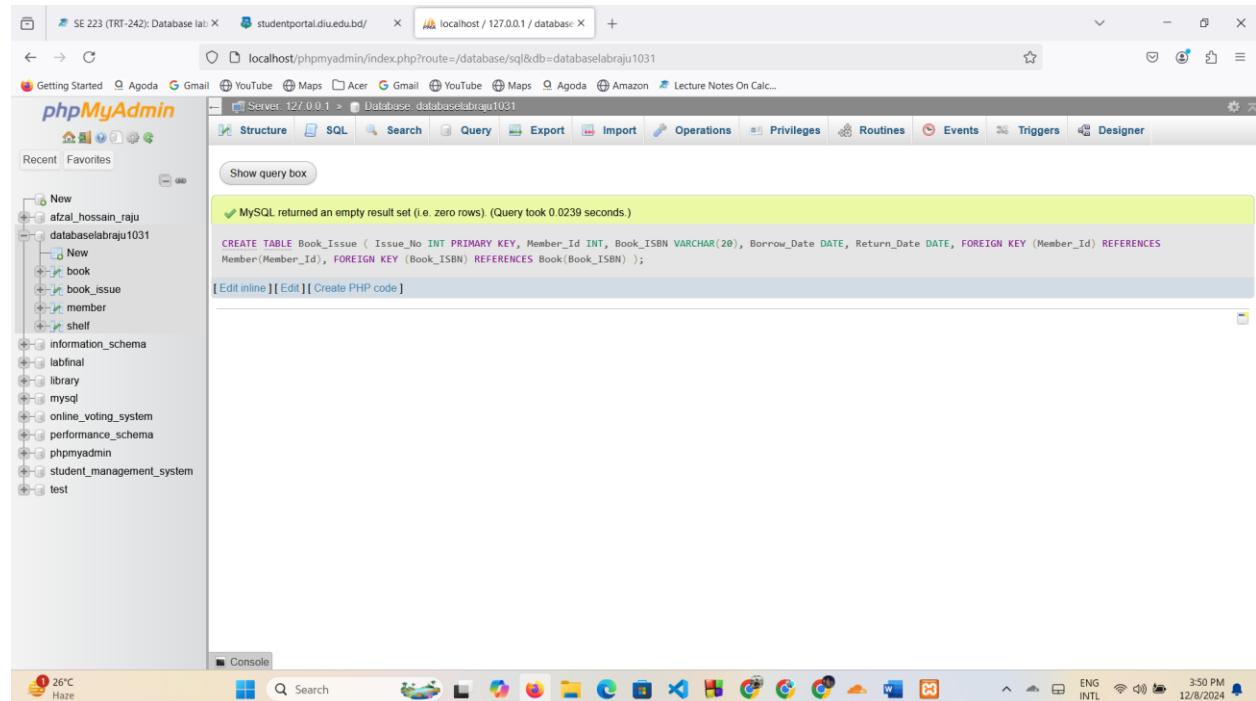
SQL:

```
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)
);
```

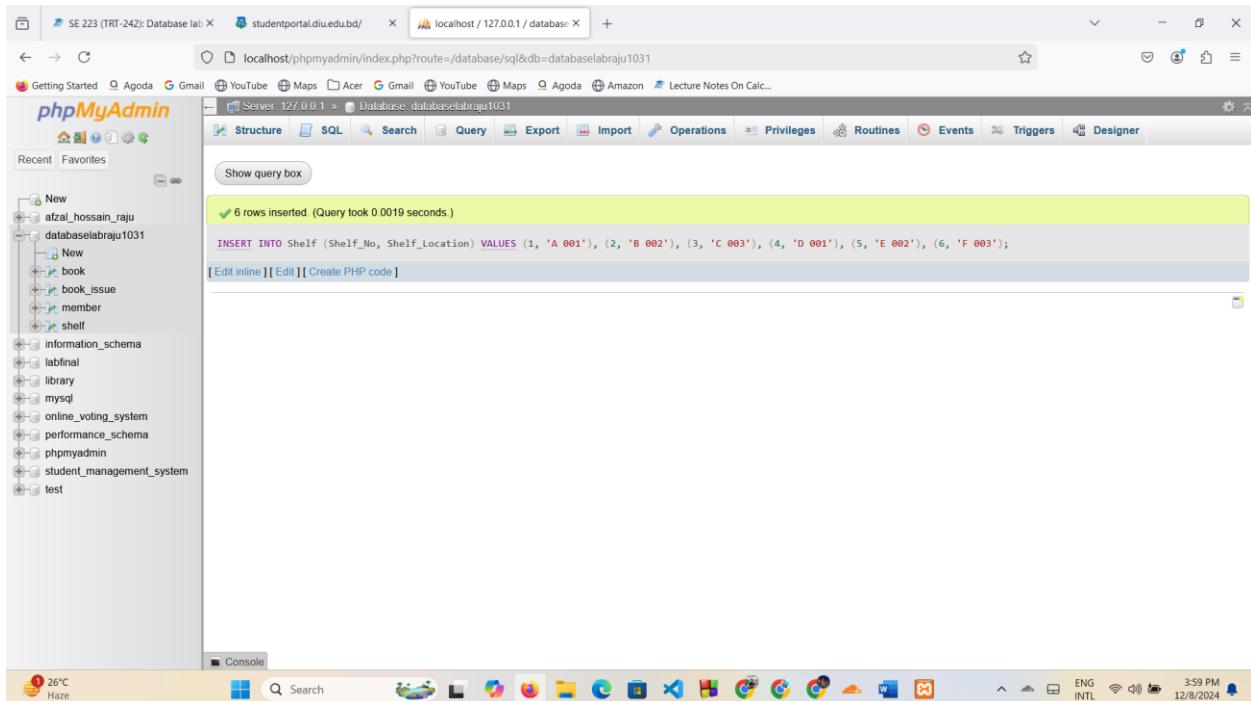


2. Insert a minimum of 6 Tuples defining SQL for each table:

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);
```

The screenshot shows the phpMyAdmin interface connected to a MySQL database named 'databaselabruju1031'. The 'Structure' tab is selected. In the main query window, the following SQL code was run:

```
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);
```

The message '6 rows inserted. (Query took 0.0035 seconds.)' is displayed in green at the top of the results area.

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');
```

The screenshot shows the phpMyAdmin interface connected to a MySQL database named 'databaselabruju1031'. The 'Structure' tab is selected. In the main query window, the same SQL code as above was run:

```
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');
```

The message '6 rows inserted. (Query took 0.0043 seconds.)' is displayed in green at the top of the results area.

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');
```

The screenshot shows the phpMyAdmin interface on a Windows desktop. The left sidebar lists databases: New, atzal_hossain_reju, databaseLabaju1031, and several system databases. The main area displays the results of an SQL query:

```
6 rows inserted. (Query took 0.0035 seconds.)  
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');
```

The status bar at the bottom right shows: Activate Windows, Go to Settings to activate Windows, ENG INTL, 413 PM, 12/8/2024.

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 for a database named 'database1abru1031'. The 'Table: Book' page is displayed. A query has been run: `SELECT Title FROM Book ORDER BY Title ASC;`. The results show six rows of data, each containing a title: 'BOOK 1...', 'BOOK 2...', 'BOOK 3...', 'BOOK 4...', 'BOOK 5...', and 'BOOK 6...'. The interface includes a sidebar with database and schema navigation, and a bottom status bar showing system information like battery level and date.

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 for the same database. A query has been run: `SELECT b.Title FROM Book_Issue bi JOIN Book b ON bi.Book_ISBN = b.Book_ISBN WHERE bi.Member_Id = 1;`. The results show two rows of data, both labeled 'Book 1' under the 'Title' column. A warning message above the results states: 'Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.' The interface and system status bar are similar to the previous screenshot.

5. Select the top 50 Book Issue:

SQL:

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

The screenshot shows the phpMyAdmin interface for a database named 'afzal_hossain_raju1031'. The 'Book_Issue' table is selected. A query is run: 'SELECT * FROM Book_Issue LIMIT 50;'. The results show 5 rows of data:

	Issue_No	Member_Id	Book_ISBN	Borrow_Date	Return_Date
1	1	1	ISBN1	2024-01-01	2024-01-15
2	2	2	ISBN2	2024-01-10	2024-01-25
3	3	3	ISBN3	2024-01-15	2024-02-01
4	4	1	ISBN4	2024-02-01	2024-02-15
5	5	2	ISBN5	2024-02-10	2024-02-25
6	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 for the same database. A query is run: 'SELECT b.Title FROM Book b JOIN Shelf s ON b.Shelf_No = s.Shelf_No WHERE s.Shelf_Location = 'A 001';'. The results show 3 rows of data:

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 interface on a Windows desktop. The left sidebar lists databases: New, afzal_hossain_raju, databaseLabraju1031, information_schema, labfinal, library, mysql, online_voting_system, performance_schema, phpmyadmin, student_management_system, and test. The main area displays the results of the SQL query:

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

The results table shows three rows:

Author	Total_Copies
Author 1	13
Author 2	4
Author 3	4

Below the table are buttons for Edit, Copy, Delete, and Export. The bottom status bar shows the date and time: 12/8/2024 4:36 PM.

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 interface for a database named 'atfal_hossain_raju'. The left sidebar lists various databases and their tables. The main area displays the results of a query: 'SELECT Author, AVG(Price) AS Average_Price FROM Book GROUP BY Author;'. The results table shows three rows:

Author	Average_Price
Author 1	20.656667
Author 2	16.990000
Author 3	12.990000

Below the table are various operations like Edit, Copy, Delete, and Export. At the bottom, there are links for Print, Copy to clipboard, Export, Display chart, and Create view.

9. Find how many issues are there in the database

SQL:SELECT COUNT(*) AS Total_Issues

FROM Book_Issue;

Your SQL query has been executed successfully

```
SELECT COUNT(*) AS Total_Issues FROM Book_Issue;
```

Total_Issues

Count
6

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;

Showing rows 0 - 5 (6 total). Query took 0.00065 seconds.

```
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;
```

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

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 interface with the following details:

- Left sidebar:** Shows the database structure with schemas like `afzal_hossain_raju` and tables such as `book`, `book_issue`, and `member`.
- Top navigation:** Shows the URL as `localhost/phpmyadmin/index.php?route=/table/sql&db=databaseLabaju1031&table=Book_Issue`.
- Toolbar:** Includes buttons for Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, Operations, and Triggers.
- Query results:** A green box indicates "Showing rows 0 - 1 (2 total). Query took 0.0037 seconds." The SQL 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 table shows two rows:

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
- Bottom status bar:** Shows system information including "Activate Windows Go to Settings to activate Windows.", battery level (ENG INTL), signal strength, and the date/time (12/9/2024, 2:12 AM).