

Database Final Exam

Total Marks : 10 x 10 = 100

This is a schema of the Mini Student Library Management System.

Answer question 1 - 5 from this schema.

...

```
CREATE TABLE Student (  
    StudentID INT AUTO_INCREMENT PRIMARY KEY,  
    Name VARCHAR(255) NOT NULL,  
    Email VARCHAR(255) NOT NULL,  
    Phone VARCHAR(15),  
    Address TEXT  
);
```

```
CREATE TABLE Book (  
    ISBN VARCHAR(13) PRIMARY KEY,  
    Title VARCHAR(255) NOT NULL,  
    Author VARCHAR(255) NOT NULL,  
    Genre VARCHAR(50),  
    TotalCopies INT NOT NULL,  
    AvailableCopies INT NOT NULL  
);
```

```
CREATE TABLE Borrowing (  
    BorrowID INT AUTO_INCREMENT PRIMARY KEY,  
    StudentID INT,  
    ISBN VARCHAR(13),  
    BorrowDate DATE NOT NULL,  
    DueDate DATE NOT NULL,  
    ReturnDate DATE,  
    FOREIGN KEY (StudentID) REFERENCES Student(StudentID),  
    FOREIGN KEY (ISBN) REFERENCES Book(ISBN)  
);  
...
```

1. Make an ER Diagram of this Schema
2. Insert a new borrowing record for a student (e.g., StudentID 3) for a book with the most available copies.
3. Using Update Query, decrease the available copies of a book (e.g., ISBN '9781234567890') by 1 when a student borrows it.

4. Retrieve the names of students who have borrowed the most books.
5. Retrieve the books that are overdue (i.e., the return date is before the current date).

6. You want to make a mobile banking platform for sending and receiving money from your friends. Make an ERD of this system. (Keep it simple)
7. Explain UNION and UNION ALL set operations in MySQL
8. There is a table named Employee. In that table there is a field named Salary. Determine the second lowest salary.
9. There are tables named Employee, Job History, Department.
 - a. Use ON DELETE CASCADE on Job History for deleting Employee
 - b. Use ON DELETE SET NULL on Employee for deleting Department
10. In this course, which topic you found most interesting. Explain the topic in short and why you found it most interesting?