

SQL Project - Procedures and Functions (Library DB)

Library Database Tables (Example Structure)

Books

book_id	title	category	pages
1	SQL Basics	Database	200
2	Learn Python	Programming	350
3	DBMS Concepts	Database	280

Members

member_id	name	city
1	Riya Sharma	Delhi
2	Aman Joshi	Mumbai

Borrow

borrow_id	book_id	member_id	borrow_date
1	1	1	2024-01-02
2	2	2	2024-02-15

Stored Procedure and Function Examples

1. Stored Procedure: List borrowed books by member name

```
DELIMITER //
CREATE PROCEDURE GetBorrowedBooksByMember(IN memberName VARCHAR(100))
BEGIN
    SELECT M.name, K.title, B.borrow_date
    FROM Borrow B
    JOIN Members M ON B.member_id = M.member_id
    JOIN Books K ON B.book_id = K.book_id
    WHERE M.name = memberName;
END //
DELIMITER ;

-- Call Example:
CALL GetBorrowedBooksByMember('Riya Sharma');
```

2. User-Defined Function: Count total books borrowed by a member

```
DELIMITER //
CREATE FUNCTION CountBooksBorrowed(mem_id INT)
RETURNS INT
DETERMINISTIC
BEGIN
```

```
DECLARE total INT;  
SELECT COUNT(*) INTO total FROM Borrow WHERE member_id = mem_id;  
RETURN total;  
END //  
DELIMITER ;
```

```
-- Use Example:  
SELECT name, CountBooksBorrowed(member_id) AS books_borrowed  
FROM Members;
```

Outcome:

Gained ability to modularize SQL logic using stored procedures and functions, with reusable and secure operations.