

TRIGGERS

1. Auto update available copies of books

```
SQLQuery1.sql - FR...INGPAN\faraz (59))* X
CREATE TRIGGER trg_UpdateAvailableCopies
ON Book_Issues
AFTER INSERT
AS
BEGIN
    UPDATE Library
    SET AvailableCopies = AvailableCopies - 1
    WHERE BookID IN (SELECT BookID FROM inserted);
END;
```

Description:

Automatically decreases the available copies of a book in the Library table when it is issued to a student.

2. Auto Update return copies

```
SQLQuery1.sql - FR...INGPAN\faraz (59))* X
CREATE TRIGGER trg_UpdateReturnCopies
ON Book_Issues
AFTER UPDATE
AS
BEGIN
    IF EXISTS (SELECT * FROM inserted WHERE ReturnDate IS NOT NULL)
    BEGIN
        UPDATE Library
        SET AvailableCopies = AvailableCopies + 1
        WHERE BookID IN (SELECT BookID FROM inserted WHERE ReturnDate IS NOT NULL);
    END
END;
```

Description:

Automatically increases the available copies in the Library table when a book is returned.

3. Prevent Duplicate Enrollment

```
SQLQuery1.sql - FR...INGPAN\faraz (59))*  X
ON Enrollment
INSTEAD OF INSERT
AS
BEGIN
    IF EXISTS (
        SELECT 1 FROM Enrollment e
        JOIN inserted i ON e.StudentID = i.StudentID AND e.CourseID = i.CourseID
    )
    BEGIN
        RAISERROR('Student already enrolled in this course.', 16, 1);
    END
    ELSE
    BEGIN
        INSERT INTO Enrollment (StudentID, CourseID, EnrollmentDate)
        SELECT StudentID, CourseID, EnrollmentDate FROM inserted;
    END
END;
```

Description:

Prevents a student from being enrolled in the same course more than once by checking for duplicates before insertion.

4. Validate Payment

```
SQLQuery1.sql - FR...INGPAN\faraz (59))*  X
CREATE TRIGGER trg_ValidatePayment
ON Payment
AFTER INSERT
AS
BEGIN
    IF EXISTS (SELECT 1 FROM inserted WHERE AmountPaid <= 0)
    BEGIN
        RAISERROR('AmountPaid must be greater than zero.', 16, 1);
        ROLLBACK;
    END
END;
```

Description:

Ensures that no payment with zero or negative amount is inserted into the payment table.