Assignment 4

Unnamed PL/SQL code block:
Use of Control structure and Exception handling is mandatory. Write a PL/SQL block of code for the following requirements:-
Schema: 1. Borrower(Rollin, Name, DateofIssue, NameofBook, Status)
2. Fine(Roll_no,Date,Amt) Accept roll_no & name of book from user.
Check the number of days (from date of issue), if days are between 15 to 30 then fine amount will be Rs 5per day. If no. of days>30, per day fine will be Rs 50 per day & for days less than 30, Rs. 5 per day. After submitting the book, status will change from I to R. If condition of fine is true, then details will be stored into fine table.

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE ReturnBook( IN p_roll_no INT, IN p_name_of_book VARCHAR(30) )
    ->
    -> BEGIN
    ->
    -> DECLARE v_date_of_issue DATE;
    -> DECLARE v_current_date DATE;
    -> DECLARE v_days INT;
    -> DECLARE v_fine_amount INT DEFAULT 0;
    ->
    ->
    -> DECLARE exit handler for SQLEXCEPTION
    -> BEGIN
    ->        SELECT 'An error occurred: ', SQLERRM;
    -> END;
    ->
    -> SET v_current_date = CURDATE();
    ->
    -> SELECT b_dateofissue INTO v_date_of_issue FROM Borrower WHERE b_id = p_roll_no AND b_nameofbook = p_name_of_book;
    ->
    -> SET v_days = DATEDIFF(v_current_date, v_date_of_issue);
    ->
    -> IF v_days > 30 THEN
    -> SET v_fine_amount = (v_days - 30) * 50 + (30 * 5);
    -> ELSEIF v_days >= 15 THEN
    -> SET v_fine_amount = v_days * 5;
    -> ELSE
    -> SET v_fine_amount = 0;
    -> END IF;
    ->
    -> UPDATE Borrower SET status = 'Returned' WHERE b_id = p_roll_no AND b_nameofbook = p_name_of_book;
    ->
    ->
    -> IF v_fine_amount > 0 THEN
    -> INSERT INTO Fine (fine_bid, fine_date, fine_amount)
    -> VALUES (p_roll_no, v_current_date, v_fine_amount);
    -> END IF;
```

```
    -> END IF;
    ->
    -> SELECT CONCAT('Book returned. Fine amount: Rs ', v_fine_amount) AS result;
    ->
    -> END //
Query OK, 0 rows affected (0.09 sec)

mysql> DELIMITER ;
mysql> call ReturnBook(101, 'Pride and Prejudice');
+--------------------------------------+
| result                               |
+--------------------------------------+
| Book returned. Fine amount: Rs 1000  |
+--------------------------------------+
1 row in set (0.07 sec)

Query OK, 3 rows affected (0.07 sec)

mysql> select * from Fine;
+----------+------------+-------------+
| fine_bid | fine_date  | fine_amount |
+----------+------------+-------------+
|      101 | 2024-08-01 |        1000 |
+----------+------------+-------------+
1 row in set (0.00 sec)

mysql> select * from Borrower;
+------+-----------+---------------+---------------------+----------+
| b_id | b_name    | b_dateofissue | b_nameofbook        | status   |
+------+-----------+---------------+---------------------+----------+
|  101 | Anushree  | 2024-06-15    | Pride and Prejudice | Returned |
|  102 | Purti     | 2024-07-25    | Murakami            | Issued   |
|  103 | Anjali    | 2024-07-31    | Harry Potter        | Issued   |
|  104 | Dhanshree | 2024-07-01    | Harry Potter 2      | Issued   |
+------+-----------+---------------+---------------------+----------+
4 rows in set (0.00 sec)
```

DELIMITER //
CREATE PROCEDURE ReturnBook(IN p_roll_no INT, IN p_name_of_book VARCHAR(30))

BEGIN

DECLARE v_date_of_issue DATE;
DECLARE v_current_date DATE;
DECLARE v_days INT;
DECLARE v_fine_amount INT DEFAULT 0;

DECLARE exit handler for SQLEXCEPTION
BEGIN
        SELECT 'An error occurred: ', SQLERRM;
END;

SET v_current_date = CURDATE();

```sql
SELECT b_dateofissue INTO v_date_of_issue FROM Borrower WHERE b_id = p_roll_no AND
b_nameofbook = p_name_of_book;

SET v_days = DATEDIFF(v_current_date, v_date_of_issue);

IF v_days > 30 THEN
SET v_fine_amount = (v_days - 30) * 50 + (30 * 5);
ELSEIF v_days >= 15 THEN
SET v_fine_amount = v_days * 5;
ELSE
SET v_fine_amount = 0;
END IF;

UPDATE Borrower SET status = 'Returned' WHERE b_id = p_roll_no AND b_nameofbook =
p_name_of_book;

IF v_fine_amount > 0 THEN
INSERT INTO Fine (fine_bid, fine_date, fine_amount)
VALUES (p_roll_no, v_current_date, v_fine_amount);
END IF;


SELECT CONCAT('Book returned. Fine amount: Rs ', v_fine_amount) AS result;
END //

DELIMITER ;
```