

A4

Roll No: 31412

Name: Pranay Chavhan

Problem Statement:

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> CREATE TABLE Borrower (
```

```
-> Roll_no INT PRIMARY KEY,
```

```
-> Name VARCHAR(255),
```

```
-> DateOfIssue DATE,
```

```
-> NameofBook VARCHAR(255),
```

```
-> Status VARCHAR(1)
```

```
-> );
```

```
Query OK, 1 row affected (0.01 sec)
```

```
mysql> CREATE TABLE Fine (  
-> Roll_no INT,  
-> Date DATE,  
-> Amt NUMBER,  
-> FOREIGN KEY (Roll_no) REFERENCES Borrower(Roll_no)  
-> );
```

Query OK, 1 row affected (0.01 sec)

```
mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)  
-> VALUES (1, 'Rajesh Kumar', '2023-08-10', 'Introduction to Computer Programming',  
'I');
```

Query OK, 1 row affected (0.01 sec)

```
mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)  
-> VALUES (2, 'Priya Patel', '2023-08-12', 'Python Programming Fundamentals', 'I');
```

Query OK, 1 row affected (0.01 sec)

```
mysql>
```

```
mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)  
-> VALUES (3, 'Sandeep Singh', '2023-08-15', 'Java Programming for Beginners', 'I');
```

Query OK, 1 row affected (0.00 sec)

```
mysql>
```

```
mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)  
-> VALUES (4, 'Anjali Sharma', '2023-08-18', 'C++ Programming Essentials', 'I');
```

Query OK, 1 row affected (0.00 sec)

```
mysql>
```

```
mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)  
-> VALUES (5, 'Amit Gupta', '2023-08-20', 'Web Development with HTML and CSS', 'I');
```

Query OK, 1 row affected (0.00 sec)

```
mysql>
```

```
mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)  
-> VALUES (6, 'Neha Verma', '2023-08-22', 'JavaScript Programming Guide', 'I');
```

Query OK, 1 row affected (0.00 sec)

mysql>

mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)

-> VALUES (7, 'Rahul Yadav', '2023-08-25', 'SQL Database Management', 'I');

Query OK, 1 row affected (0.00 sec)

mysql>

mysql> INSERT INTO Borrower (Roll_no, Name, DateofIssue, NameOfBook, Status)

-> VALUES (8, 'Pooja Reddy', '2023-08-28', 'Advanced Data Structures in C', 'I');

Query OK, 1 row affected (0.01 sec)

```
mysql> select * from Borrower;
```

Roll_no	Name	DateOfIssue	NameOfBook	Status
1	Rajesh Kumar	2023-08-10	Introduction to Computer Programming	I
2	Priya Patel	2023-08-12	Python Programming Fundamentals	I
3	Sandeep Singh	2023-08-15	Java Programming for Beginners	I
4	Anjali Sharma	2023-08-18	C++ Programming Essentials	I
5	Amit Gupta	2023-08-20	Web Development with HTML and CSS	I
6	Neha Verma	2023-08-22	JavaScript Programming Guide	I
7	Rahul Yadav	2023-08-25	SQL Database Management	I
8	Pooja Reddy	2023-08-28	Advanced Data Structures in C	I

8 rows in set (0.00 sec)

mysql> DELIMITER //

mysql>

mysql> CREATE PROCEDURE CalculateFineAndChangeStatus(IN p_roll_no INT, IN p_name_of_book VARCHAR(200))

-> BEGIN

-> DECLARE v_date_of_issue DATE;

-> DECLARE v_status CHAR(1);

-> DECLARE v_fine_amt DECIMAL(10, 2);

-> DECLARE v_days_late INT;

-> DECLARE CONTINUE HANDLER FOR SQLEXCEPTION

-> BEGIN

-> ROLLBACK;

```

->     SELECT 'An error occurred: ' AS Message, SQLERRM AS Error;
-> END;
-> SELECT DateofIssue, Status
-> INTO v_date_of_issue, v_status
-> FROM Borrower
-> WHERE Roll_no = p_roll_no AND NameOfBook = p_name_of_book;
-> SET v_days_late = DATEDIFF(NOW(), v_date_of_issue);
-> IF v_days_late > 30 THEN
->     SET v_fine_amt = v_days_late * 50;
-> ELSE
->     SET v_fine_amt = v_days_late * 5;
-> END IF;
-> UPDATE Borrower
-> SET Status = 'R'
-> WHERE Roll_no = p_roll_no AND NameOfBook = p_name_of_book;
-> IF v_days_late > 0 THEN
->     INSERT INTO Fine (Roll_no, Date, Amt)
->     VALUES (p_roll_no, NOW(), v_fine_amt);
->     SELECT 'Fine Details Inserted. Fine Amount: Rs ' AS Message, v_fine_amt AS
FineAmount;
-> ELSE
->     SELECT 'Book submitted successfully.' AS Message;
-> END IF;
-> COMMIT;
-> END //

```

Query OK, 0 rows affected (0.01 sec)

mysql>

mysql> DELIMITER ;

```

mysql> call CalculateFineAndChangeStatus(2, 'Python Programming Fundamentals');
+-----+-----+
| Message                                | FineAmount |
+-----+-----+
| Fine Details Inserted. Fine Amount: Rs |    100.00  |
+-----+-----+

```

```
+-----+-----+
1 row in set (0.02 sec)
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> select * from Fine;
+-----+-----+-----+
| Roll_no | Date      | Amt |
+-----+-----+-----+
|      2 | 2023-09-01 | 100 |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> select * from Borrower;
+-----+-----+-----+-----+-----+
| Roll_no | Name          | DateOfIssue | NameOfBook                                     | Status |
+-----+-----+-----+-----+-----+
|      1 | Rajesh Kumar  | 2023-08-10  | Introduction to Computer Programming         | I      |
|      2 | Priya Patel   | 2023-08-12  | Python Programming Fundamentals              | R      |
|      3 | Sandeep Singh | 2023-08-15  | Java Programming for Beginners               | I      |
|      4 | Anjali Sharma | 2023-08-18  | C++ Programming Essentials                  | I      |
|      5 | Amit Gupta    | 2023-08-20  | Web Development with HTML and CSS            | I      |
|      6 | Neha Verma    | 2023-08-22  | JavaScript Programming Guide                 | I      |
|      7 | Rahul Yadav   | 2023-08-25  | SQL Database Management                     | I      |
|      8 | Pooja Reddy   | 2023-08-28  | Advanced Data Structures in C                | I      |
+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```