Zeal College of Engineering and Research

Subject: DBMSL

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Div: B   Batch: B1

Roll No: T212009

Group A: Practical No: 4

Program Statement:

Unnamed PL/SQL code block: Use of Control structure and Exception handling is mandatory.

Suggested Problem statement:

Consider Tables:
1. Borrower(Roll_no, Name, DateofIssue, NameofBook, Status)
2. Fine(Roll_no,Date,Amt)

• Accept Roll_no and NameofBook 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 perday.
• 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.
• Also handles the exception by named exception handler or user define exception handler.

Code:
```
mysql> CREATE DATABASE Library;
Query OK, 1 row affected (0.00 sec)

mysql> USE Library;
Database changed

mysql> CREATE TABLE borrower( Roll_no INT(10) PRIMARY KEY, Name
VARCHAR(20) NOT NULL, Date_of_issue DATE NOT NULL, Name_of_book
VARCHAR(20) NOT NULL, Status VARCHAR(1) NOT NULL);
Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> CREATE TABLE fine(Roll_no INT(10), Date DATE NOT NULL, Amount
INT(10), FOREIGN KEY(Roll_no) REFERENCES borrower(Roll_no));
Query OK, 0 rows affected, 2 warnings (0.03 sec)
```

```
mysql> INSERT INTO borrower(Roll_no, Name, Date_of_issue, Name_of_book, Status)
    -> VALUES
    -> (1, 'Jenil', '2024-04-17', 'Half-Blood Prince', 'I'),
    -> (2, 'Manas', '2024-05-12', 'Sea Monsters', 'I'),
    -> (3, 'Tanisha', '2024-09-05', 'Start of Us', 'I');
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM borrower;
+---------+---------+---------------+-------------------+--------+
| Roll_no | Name    | Date_of_issue | Name_of_book      | Status |
+---------+---------+---------------+-------------------+--------+
|       1 | Jenil   | 2024-04-17    | Half-Blood Prince | I      |
|       2 | Manas   | 2024-05-12    | Sea Monsters      | I      |
|       3 | Tanisha | 2024-09-05    | Start of Us       | I      |
+---------+---------+---------------+-------------------+--------+
3 rows in set (0.00 sec)

mysql> DELIMITER //
mysql> CREATE PROCEDURE A(IN rollno INT(10), IN name1 VARCHAR(20))
    -> BEGIN
    -> DECLARE i_date DATE;
    -> DECLARE diff INT;
    -> DECLARE fine_amt INT;
    -> DECLARE st VARCHAR(1);
    -> DECLARE EXIT HANDLER FOR SQLEXCEPTION SELECT 'Table not found';
    -> SELECT Date_of_issue, Status INTO i_date, st FROM borrower WHERE Roll_no =
rollno and Name_of_b
ook = name1;
    -> IF (st = 'R') THEN
    -> SELECT CONCAT('The Book "', name1, '" has already been returned.') AS message;
    -> ELSE
    -> SELECT DATEDIFF(CURDATE(), i_date) INTO diff;
    -> IF (diff >= 15 AND diff <= 30) THEN
    -> SET fine_amt = (diff - 15) * 5;
    -> ELSEIF (diff > 30) THEN
    -> SET fine_amt = (diff - 15) * 5 + 75;
    -> END IF;
    -> UPDATE borrower SET Status = 'R' WHERE Roll_no = rollno AND Name_of_book =
name1;
    -> INSERT INTO fine VALUES(rollno, CURDATE(), fine_amt);
    -> END IF;
    -> END;
    -> //
Query OK, 0 rows affected, 1 warning (0.01 sec)
mysql> DELIMITER ;
mysql> CALL A(2, 'Sea Monsters');
Query OK, 1 row affected (0.01 sec)
mysql> SELECT * FROM fine;
```

```
+---------+------------+--------+
| Roll_no | Date       | Amount |
+---------+------------+--------+
|       2 | 2024-09-19 |    650 |
+---------+------------+--------+
1 row in set (0.00 sec)

mysql> SELECT * FROM borrower;
+---------+---------+--------------+------------------+--------+
| Roll_no | Name    | Date_of_issue | Name_of_book    | Status |
+---------+---------+--------------+------------------+--------+
|       1 | Jenil   | 2024-04-17   | Half-Blood Prince | I      |
|       2 | Manas   | 2024-05-12   | Sea Monsters      | R      |
|       3 | Tanisha | 2024-09-05   | Start of Us       | I      |
+---------+---------+--------------+------------------+--------+
3 rows in set (0.00 sec)

mysql> DELIMITER ;
mysql> CALL A(1, 'Half-Blood Prince');
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM borrower;
+---------+---------+--------------+------------------+--------+
| Roll_no | Name    | Date_of_issue | Name_of_book    | Status |
+---------+---------+--------------+------------------+--------+
|       1 | Jenil   | 2024-04-17   | Half-Blood Prince | R      |
|       2 | Manas   | 2024-05-12   | Sea Monsters      | R      |
|       3 | Tanisha | 2024-09-05   | Start of Us       | I      |
+---------+---------+--------------+------------------+--------+
3 rows in set (0.00 sec)

mysql> SELECT * FROM fine;
+---------+------------+--------+
| Roll_no | Date       | Amount |
+---------+------------+--------+
|       2 | 2024-09-19 |    650 |
|       1 | 2024-09-19 |    775 |
+---------+------------+--------+
2 rows in set (0.00 sec)

mysql>
```