Name : Anushree Gattani
Roll No. : 31404
Batch : K4
DBMSL

Assignment 4

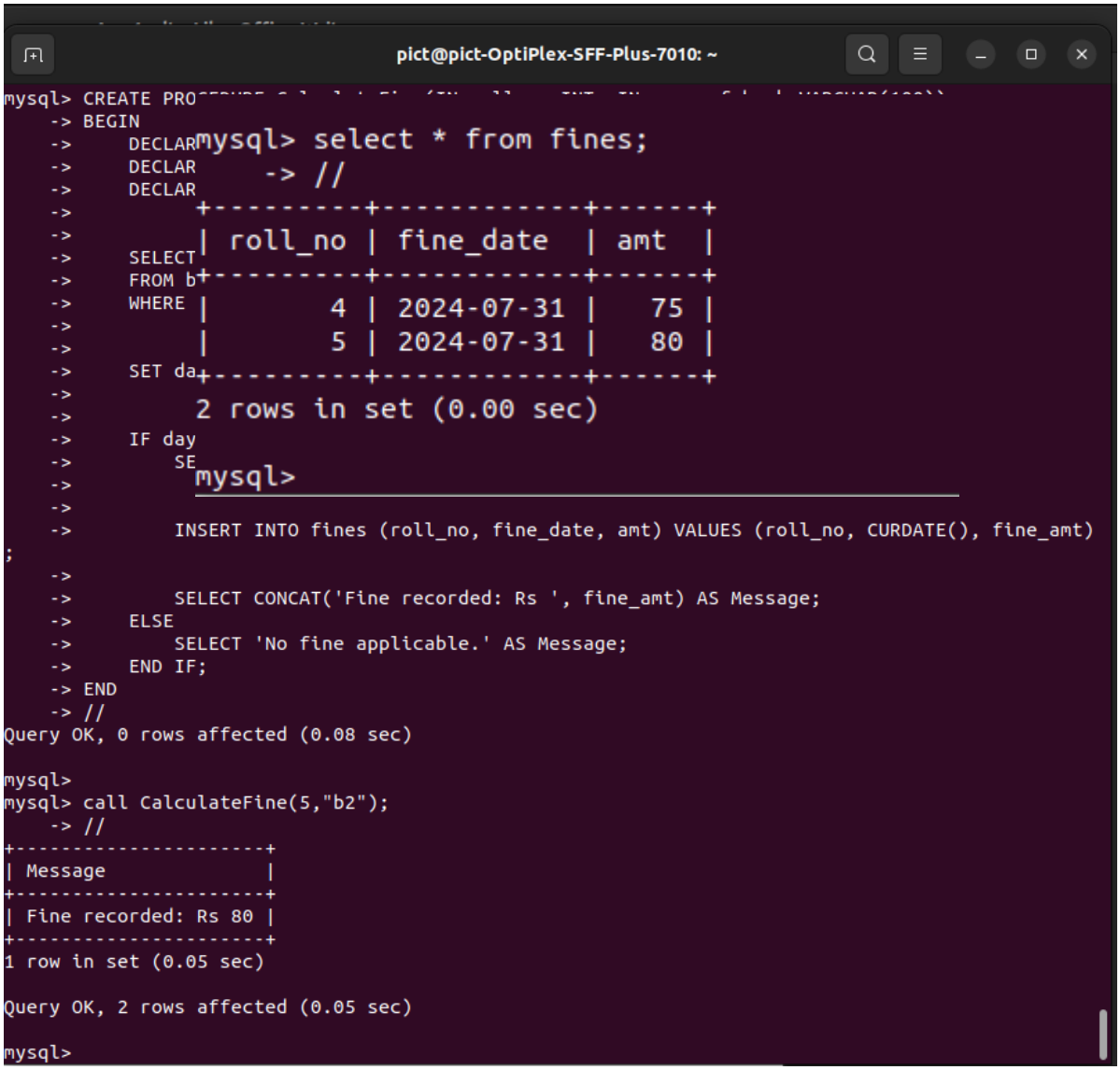
1) Unnamed PL/SQL code block: Use of Control structure and Exception handling is mandatory. Write a PL/SQL block of code for the following requirements:-
Schema:
1. Borrower(Roll,Name,DateofIssue, NameofBook, Status)
2. Fine (Roll, Date, Amt)
Accept Roll & N ame of book from user. Check the number of 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.

```
create table borrowers(
        roll_no INT,
        name VARCHAR(20),
        issue_date DATE,
        book_name VARCHAR(20),
        status CHAR(10),
        primary key( roll_no )
);

create table fines(
        roll_no INT,
        fine_date DATE,
        amt INT,
        foreign key( roll_no ) references borrowers( roll_no )
);

insert into borrowers values
( 1 , 'p1' , '2024-7-31' , 'b1' , 'I' ) ,
( 2 , 'p2' , '2024-7-17' , 'b2' , 'I' ) ,
( 3 , 'p2' , '2024-6-18' , 'b3' , 'I' ) ,
( 4 , 'p2' , '2024-7-16' , 'b1' , 'I' ) ,
( 5 , 'p2' , '2024-7-01' , 'b2' , 'I' ) ,
( 6 , 'p2' , '2024-6-10' , 'b3' , 'I' ) ;
```

```
mysql> select * from borrowers;
+---------+------+------------+-----------+--------+
| roll_no | name | issue_date | book_name | status |
+---------+------+------------+-----------+--------+
|       1 | p1   | 2024-07-31 | b1        | I      |
|       2 | p2   | 2024-07-17 | b2        | I      |
|       3 | p2   | 2024-06-18 | b3        | I      |
|       4 | p2   | 2024-07-16 | b1        | I      |
|       5 | p2   | 2024-07-01 | b2        | I      |
|       6 | p2   | 2024-06-10 | b3        | I      |
+---------+------+------------+-----------+--------+
6 rows in set (0.00 sec)
```

Procedure :

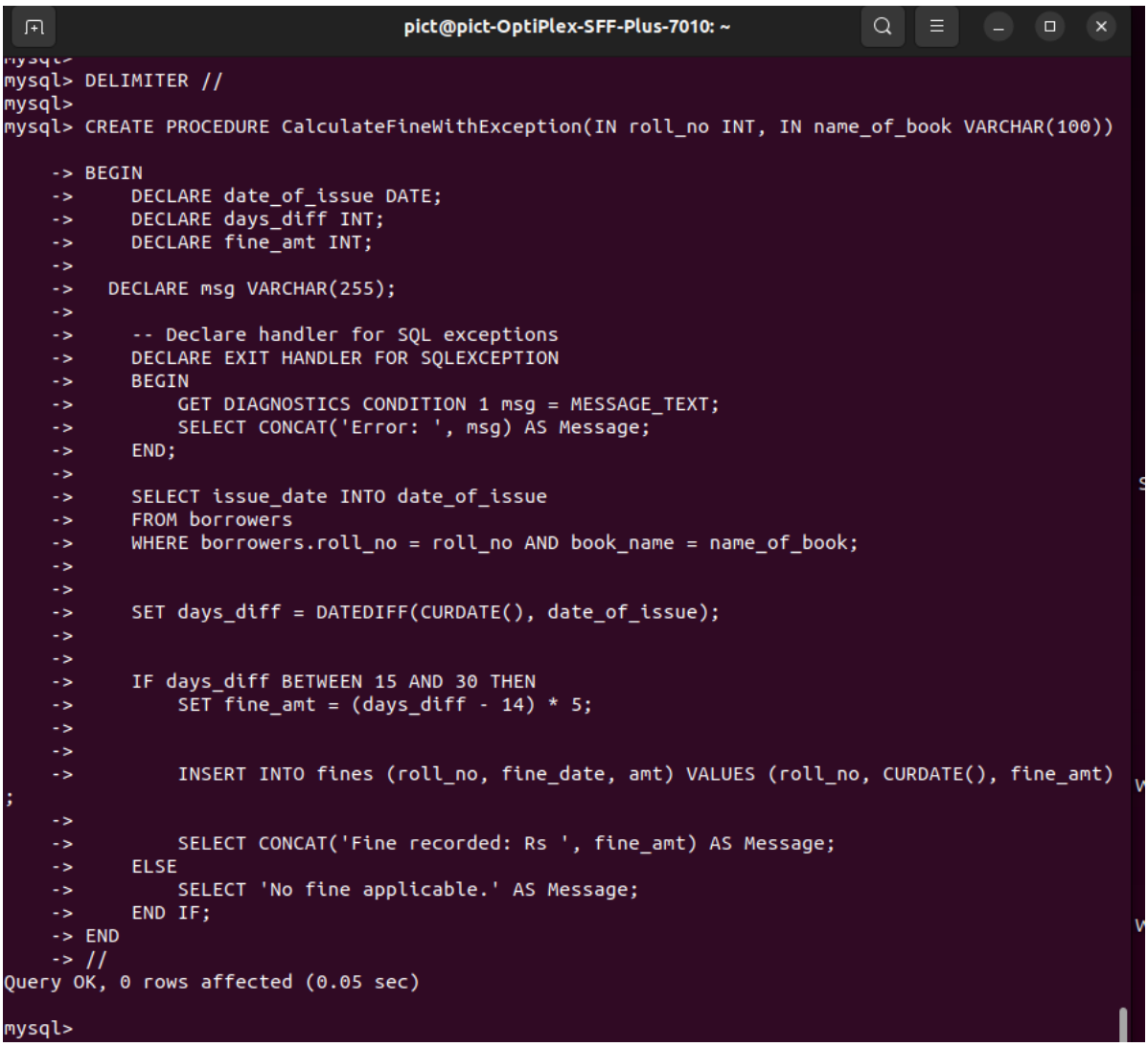
```
DELIMITER //

CREATE PROCEDURE CalculateFine(IN roll_no INT, IN name_of_book VARCHAR(100))
BEGIN
   DECLARE date_of_issue DATE;
   DECLARE days_diff INT;
   DECLARE fine_amt INT;


   SELECT issue_date INTO date_of_issue
   FROM borrowers
   WHERE borrowers.roll_no = roll_no AND book_name = name_of_book;


   SET days_diff = DATEDIFF(CURDATE(), date_of_issue);


   IF days_diff BETWEEN 15 AND 30 THEN
      SET fine_amt = (days_diff - 14) * 5;


      INSERT INTO fines (roll_no, fine_date, amt) VALUES (roll_no, CURDATE(), fine_amt);

      SELECT CONCAT('Fine recorded: Rs ', fine_amt) AS Message;
   ELSE
      SELECT 'No fine applicable.' AS Message;
   END IF;
END
//
```

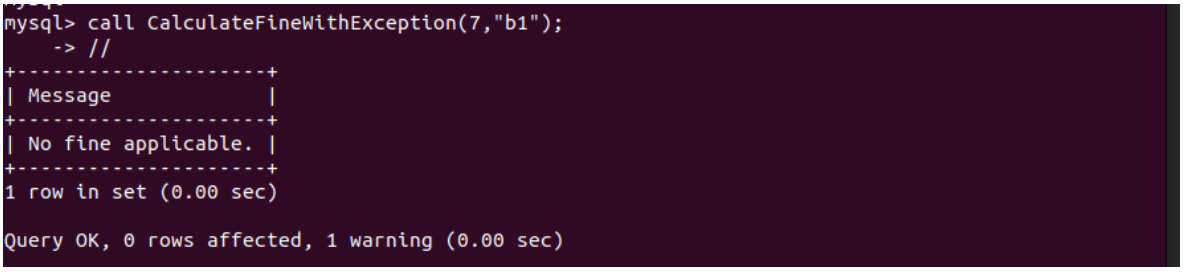


Using Exception Handling :

```
DELIMITER //

CREATE PROCEDURE CalculateFineWithException(IN roll_no INT, IN name_of_book
VARCHAR(100))
BEGIN
   DECLARE date_of_issue DATE;
   DECLARE days_diff INT;
   DECLARE fine_amt INT;

        DECLARE msg VARCHAR(255);

   -- Declare handler for SQL exceptions
   DECLARE EXIT HANDLER FOR SQLEXCEPTION
   BEGIN
      GET DIAGNOSTICS CONDITION 1 msg = MESSAGE_TEXT;
```

```
    SELECT CONCAT('Error: ', msg) AS Message;
  END;

  SELECT issue_date INTO date_of_issue
  FROM borrowers
  WHERE borrowers.roll_no = roll_no AND book_name = name_of_book;


  SET days_diff = DATEDIFF(CURDATE(), date_of_issue);


  IF days_diff BETWEEN 15 AND 30 THEN
    SET fine_amt = (days_diff - 14) * 5;


    INSERT INTO fines (roll_no, fine_date, amt) VALUES (roll_no, CURDATE(),
fine_amt);

    SELECT CONCAT('Fine recorded: Rs ', fine_amt) AS Message;
  ELSE
    SELECT 'No fine applicable.' AS Message;
  END IF;
END
//
```





2) Write a PLSQL code block to calculate the area of a circle for a value of radius varying from S to 9. Store the radius and the corresponding values of calculated area in an empty table named areas, consisting of two columns, radius and area
(Oracle live)

1.

```
create table circlearea(radius int,area float)
```

```
Table created.
```

2.

```
declare
a number;
area number;
pi constant number:=3.1413;

begin
for a in 5 .. 9 loop
        area:=a*a;

        insert into circlearea(radius,area) values(a,area);

        dbms_output.put_line('Radius is : '||a||' Area is : '||area);

end loop;
end;
```

```
Statement processed.
Radius is : 5 Area is : 25
Radius is : 6 Area is : 36
Radius is : 7 Area is : 49
Radius is : 8 Area is : 64
Radius is : 9 Area is : 81
```

3.

```
select * from circlearea
```

RADIUS	AREA
5	25
6	36
7	49
8	64
9	81

Download CSV

5 rows selected.