ASSIGNMENT A4

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 and 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.
- Also handles the exception by named exception handler or user define exception handler.

1. Table Creation.

```
-- Create the BORROWER table
CREATE TABLE BORROWER (
    roll_no NUMBER,
    name VARCHAR2(25),
    dateofissue DATE,
    name_of_book VARCHAR2(25),
    status VARCHAR2(20)
);

-- Create the FINE table
CREATE TABLE FINE (
    roll_no NUMBER,
    date_of_return DATE,
    amt NUMBER
);
```

2. Data Insertion.

```
-- Insert sample data into BORROWER
INSERT INTO BORROWER VALUES (54, 'SUDARSHAN', TO_DATE('10-01-2022', 'MM-DD-YYYY'), 'HARRY POTTER', 'I');
INSERT INTO BORROWER VALUES (56, 'SUMIT', TO_DATE('10-15-2022', 'MM-DD-YYYY'), 'DARK MATTER', 'I');
INSERT INTO BORROWER VALUES (68, 'MANDAR', TO_DATE('09-24-2022', 'MM-DD-YYYY'), 'SILENT HILL', 'I');
INSERT INTO BORROWER VALUES (66, 'SIDDHAM', TO_DATE('08-26-2022', 'MM-DD-YYYY'), 'GOD OF WAR', 'I');
INSERT INTO BORROWER VALUES (50, 'SHREYAS', TO_DATE('09-09-2022', 'MM-DD-YYYY'), 'SPIDER-MAN', 'I');
INSERT INTO BORROWER VALUES (72, 'PRIYA', TO_DATE('10-05-2022', 'MM-DD-YYYY'), 'THE HOBBIT', 'I');
INSERT INTO BORROWER VALUES (79, 'ANAND', TO_DATE('10-10-2022', 'MM-DD-YYYY'), 'WINGS OF FIRE', 'I');
INSERT INTO BORROWER VALUES (84, 'MEERA', TO_DATE('09-15-2022', 'MM-DD-YYYY'), 'THE ALCHEMIST', 'I');
INSERT INTO BORROWER VALUES (90, 'KARAN', TO_DATE('10-20-2022', 'MM-DD-YYYY'), 'THE SHANTARAM', 'I');
INSERT INTO BORROWER VALUES (95, 'TARA', TO_DATE('08-01-2022', 'MM-DD-YYYY'), 'SACRED GAMES', 'I');
```

```
    -- Display the contents of the BORROWER table before the procedure
SELECT * FROM BORROWER;

-- Display the contents of the FINE table before the procedure
SELECT * FROM FINE;

-- PL/SQL Block to calculate fines and update tables
```

3. Execution.

```
DECLARE
    i_roll_no NUMBER := 54;  -- Example roll number
    name_of_book VARCHAR2(25) := 'HARRY POTTER';  -- Example book name
    no_of_days NUMBER;
    return_date DATE := SYSDATE;  -- Current date
    temp NUMBER;
    doi DATE;
    fine NUMBER := 0;  -- Initialize fine to zero

BEGIN
    -- Fetch the date of issue
    SELECT dateofissue
    INTO doi
    FROM BORROWER
    WHERE roll_no = i_roll_no AND name_of_book = name_of_book;

    -- Calculate the number of days overdue
    no_of_days := TRUNC(return_date) - TRUNC(doi);

    -- Calculate the fine
    IF (no_of_days > 15 AND no_of_days <= 30) THEN
        fine := 5 * no_of_days;
    ELSIF (no_of_days > 30) THEN
        temp := no_of_days - 30;
        fine := (30 * 5) + (temp * 50);
    ELSE
        fine := 0;  -- No fine if returned within 15 days
    END IF;

    -- Print the results
    DBMS_OUTPUT.PUT_LINE('Return Date: ' || TO_CHAR(return_date, 'DD-MON-YY'));
    DBMS_OUTPUT.PUT_LINE('Number of Days Overdue: ' || no_of_days);
    DBMS_OUTPUT.PUT_LINE('Fine Amount: ' || fine);

    -- Insert fine record if there's a fine
    IF fine > 0 THEN
        INSERT INTO FINE (roll_no, date_of_return, amt)
        VALUES (i_roll_no, return_date, fine);
    END IF;

    -- Update status to 'R'
    UPDATE BORROWER
    SET status = 'R'
    WHERE roll_no = i_roll_no AND name_of_book = name_of_book;

    DBMS_OUTPUT.PUT_LINE('Status updated to Returned.');

EXCEPTION
    WHEN NO_DATA_FOUND THEN
        DBMS_OUTPUT.PUT_LINE('No record found for the given Roll_no and Book
name.');
    WHEN OTHERS THEN
        DBMS_OUTPUT.PUT_LINE('An unexpected error occurred: ' || SQLERRM);
END;
```

```
/

-- Display the contents of the BORROWER table after the procedure
SELECT * FROM BORROWER;

-- Display the contents of the FINE table after the procedure
SELECT * FROM FINE;
```

OUTPUT:

```
Table created.
Table created.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
```

ROLL_NO	NAME	DATEOFISSUE	NAME_OF_BOOK	STATUS
54	SUDARSHAN	01-Oct-22	HARRY POTTER	I
56	SUMIT	15-Oct-22	DARK MATTER	I
68	MANDAR	24-Sep-22	SILENT HILL	I
66	SIDDHAM	26-Aug-22	GOD OF WAR	I
50	SHREYAS	09-Sep-22	SPIDER-MAN	I
72	PRIYA	05-Oct-22	THE HOBBIT	I
79	ANAND	10-Oct-22	WINGS OF FIRE	I
84	MEERA	15-Sep-22	THE ALCHEMIST	I
90	KARAN	20-Oct-22	THE SHANTARAM	I
95	TARA	01-Aug-22	SACRED GAMES	I

```
10 rows selected.

no data found

Statement processed.
Return Date: 03-OCT-24
Number of Days Overdue: 733
Fine Amount: 35300
Status updated to Returned.
```

ROLL_NO	NAME	DATEOFISSUE	NAME_OF_BOOK	STATUS
54	SUDARSHAN	01-Oct-22	HARRY POTTER	R
56	SUMIT	15-Oct-22	DARK MATTER	I
68	MANDAR	24-Sep-22	SILENT HILL	I
66	SIDDHAM	26-Aug-22	GOD OF WAR	I
50	SHREYAS	09-Sep-22	SPIDER-MAN	I
72	PRIYA	05-Oct-22	THE HOBBIT	I
79	ANAND	10-Oct-22	WINGS OF FIRE	I
84	MEERA	15-Sep-22	THE ALCHEMIST	I
90	KARAN	20-Oct-22	THE SHANTARAM	I
95	TARA	01-Aug-22	SACRED GAMES	I

10 rows selected.

ROLL_NO	DATE_OF_RET	AMT
54	01-Oct-22	35300