Assignment 4

CREATE TABLE Borrower (

Roll INT,

Name VARCHAR(100),

DateofIssue DATE,

NameofBook VARCHAR(100),

Status CHAR(1) -- 'I' for Issued, 'R' for Returned

);

CREATE TABLE Fine (

Roll INT,

Date DATE,

Amt DECIMAL(10,2)

);

DELIMITER //

CREATE PROCEDURE CalculateFine(IN p\_roll INT, IN p\_book VARCHAR(100))

BEGIN

DECLARE v\_date\_of\_issue DATE;

DECLARE v\_days\_difference INT;

DECLARE v\_fine\_per\_day INT DEFAULT 0;

DECLARE v\_total\_fine DECIMAL(10,2) DEFAULT 0;

DECLARE v\_status CHAR(1);

DECLARE EXIT HANDLER FOR NOT FOUND

BEGIN

SELECT 'No such record found in the Borrower table.';

END;

-- Fetch DateofIssue and Status from Borrower table

SELECT DateofIssue, Status INTO v\_date\_of\_issue, v\_status

FROM Borrower

WHERE Roll = p\_roll AND NameofBook = p\_book;

-- Calculate the number of days since the book was issued

SET v\_days\_difference = DATEDIFF(CURDATE(), v\_date\_of\_issue);

-- Determine the fine based on the number of days

IF v\_days\_difference BETWEEN 15 AND 30 THEN

SET v\_fine\_per\_day = 5;

SET v\_total\_fine = v\_days\_difference \* v\_fine\_per\_day;

ELSEIF v\_days\_difference > 30 THEN

SET v\_fine\_per\_day = 50;

SET v\_total\_fine = v\_days\_difference \* v\_fine\_per\_day;

ELSE

SET v\_total\_fine = 0;

END IF;

-- Update the status to 'R' (Returned) if the book is returned

IF v\_status = 'I' THEN

UPDATE Borrower

SET Status = 'R'

WHERE Roll = p\_roll AND NameofBook = p\_book;

END IF;

-- If there is a fine, insert the details into the Fine table

IF v\_total\_fine > 0 THEN

INSERT INTO Fine (Roll, Date, Amt)

VALUES (p\_roll, CURDATE(), v\_total\_fine);

END IF;

END;

//

DELIMITER ;

-- Insert sample borrowers

INSERT INTO Borrower (Roll, Name, DateofIssue, NameofBook, Status)

VALUES

(101, 'John Doe', '2024-08-01', 'Database Systems', 'I'),

(102, 'Jane Smith', '2024-08-10', 'Data Science', 'I'),

(103, 'Mike Lee', '2024-09-01', 'Cybersecurity Basics', 'I');

CALL CalculateFine(101, 'Database Systems');