

Exercise 1: Control Structures

Output:

Scenario 1:

Before Discount:

The screenshot shows the MySQL Workbench interface with a stored procedure named 'Discount' being executed. The procedure logic is as follows:

```
12 DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
13
14 OPEN cur;
15 read_loop: LOOP
16   FETCH cur INTO v_customer;
17   IF done THEN LEAVE read_loop; END IF;
18
19   UPDATE Loans
20   SET InterestRate = InterestRate - 1
```

The 'Result Grid' displays the state of the 'Loans' table before the discount is applied:

| CustomerID | Name | DOB | Age | LoanID | RateBefore |
|------------|--------------|------------|-----|--------|------------|
| 1 | John Doe | 1935-05-15 | 90 | 1 | 4.00 |
| 2 | Jane Smith | 1990-07-20 | 34 | 1 | 10.00 |
| 3 | Suresh Kumar | 1958-02-11 | 67 | 4 | 4.50 |
| 4 | Lakshmi Iyer | 1998-09-05 | 26 | 1 | 10.00 |
| 5 | Rahul Mehta | 1979-04-23 | 46 | 3 | 7.00 |
| 6 | Meera Rao | 1940-12-30 | 84 | 2 | 5.50 |

The 'Action Output' pane shows the execution results:

| # | Time | Action | Message | Duration / Fetch |
|----|----------|--|-------------------|-----------------------|
| 24 | 17:33:11 | CALL RemindDueLoans() | 0 row(s) returned | 0.000 sec / 0.000 sec |
| 25 | 17:43:12 | SELECT c.CustomerID, c.Name, c.DOB, TIMESTAMPDIFF(YEAR, c.DOB, CU... | 6 row(s) returned | 0.000 sec / 0.000 sec |

After Discount:

The screenshot shows a SQL query being executed to calculate the age of customers and apply a discount to their loan interest rates. The query is as follows:

```
51 c.DOB,
52 TIMESTAMPDIFF(YEAR, c.DOB, CURDATE()) AS Age,
53 l.LoanID,
54 l.InterestRate AS RateAfter
55 FROM Customers c
56 JOIN Loans l ON l.CustomerID = c.CustomerID
57 WHERE TIMESTAMPDIFF(YEAR, c.DOB, CURDATE()) > 60
58 ORDER BY c.CustomerID;
```

The 'Result Grid' displays the results of the query:

| CustomerID | Name | DOB | Age | LoanID | RateAfter |
|------------|--------------|------------|-----|--------|-----------|
| 1 | John Doe | 1935-05-15 | 90 | 1 | 3.96 |
| 3 | Suresh Kumar | 1958-02-11 | 67 | 4 | 4.46 |
| 6 | Meera Rao | 1940-12-30 | 84 | 2 | 5.45 |

The 'Action Output' pane shows the execution results:

| # | Time | Action | Message | Duration / Fetch |
|----|----------|--|-------------------|-----------------------|
| 30 | 17:48:21 | SET SQL_SAFE_UPDATES = 1 | 0 row(s) affected | 0.000 sec |
| 31 | 17:48:35 | SELECT c.CustomerID, c.Name, c.DOB, TIMESTAMPDIFF(YEAR, c.DOB, CU... | 3 row(s) returned | 0.000 sec / 0.000 sec |