# Purpose

The purpose of these test cases is to ensure that the reward points calculation function behaves as expected under different scenarios and edge cases.

# Test Environment

* Language: Java
* Framework: JUnit 5
* Libraries: Spring Boot (for integration tests)

# Test Cases

## **Test Case 1: Transaction Over $100**

#### **Description**

Test the calculation of reward points for a transaction where the amount spent is over $100.

#### **Input**

* Customer ID: "customer1"
* Transaction Date: April 1, 2024
* Amount: $120

#### **Expected Output**

* Points earned for April: 90
* Total points earned for customer1: 90

#### **Test Steps**

1. Execute the reward points calculation function with the provided input.
2. Verify that the points earned for April match the expected value.
3. Verify that the total points earned for customer1 match the expected value.

## Test Case 2: Transaction Between $50 and $100

#### **Description**

Test the calculation of reward points for a transaction where the amount spent is between $50 and $100.

#### **Input**

* Customer ID: "customer2"
* Transaction Date: April 15, 2024
* Amount: $80

#### **Expected Output**

* Points earned for April: 30
* Total points earned for customer2: 30

#### **Test Steps**

1. Execute the reward points calculation function with the provided input.
2. Verify that the points earned for April match the expected value.
3. Verify that the total points earned for customer2 match the expected value.

## Test Case 3: Transaction Less Than $50

#### **Description**

Test the calculation of reward points for a transaction where the amount spent is less than $50.

#### **Input**

* Customer ID: "customer3"
* Transaction Date: April 20, 2024
* Amount: $40

#### **Expected Output**

* Points earned for April: 0
* Total points earned for customer3: 0

#### **Test Steps**

1. Execute the reward points calculation function with the provided input.
2. Verify that the points earned for April match the expected value.
3. Verify that the total points earned for customer3 match the expected value.

## **Additional Test Cases**

* Test cases for multiple transactions for the same customer in a month.
* Test cases for transactions spanning across multiple months.
* Edge cases like exactly $100 transactions.