Java – Credit Card Debt Part A

Purpose

This lab was designed to teach you how to use computational thinking to solve a real-world problem.

Description

Write a program to calculate the credit card balance after one year if a person only pays the minimum monthly payment required by the credit card company each month. The following variables contain values as described below:

balance - the outstanding balance on the credit card
annualInterestRate - annual interest rate as a decimal
monthlyPaymentRate - minimum monthly payment rate as a decimal

For each month, calculate statements on the monthly payment and remaining balance. At the end of 12 months, return the remaining balance. Be sure to round the answer to two decimal digits of accuracy.

Remaining balance: 813.41

A summary of the required math is found below:

Monthly interest rate= (Annual interest rate) / 12.0
Minimum monthly payment = (Minimum monthly payment rate) x (Previous balance)
Monthly unpaid balance = (Previous balance) - (Minimum monthly payment)
Updated balance each month = (Monthly unpaid balance) + (Monthly interest rate x Monthly unpaid balance)

Program Shell

CreditCards.java

Test Case 1

```
balance = 42; annualInterestRate = 0.2; monthlyPaymentRate = 0.04
```

Output:

```
      31.38
```

Test Case 2

```
balance = 484; annualInterestRate = 0.2; monthlyPaymentRate = 0.04
```

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Output:

```
361.61
```

Test Case 3

```
balance = 151; annualInterestRate = 0.2; monthlyPaymentRate = 0.06
```

Output:

```
87.63
```

Test Case 4

```
balance = 412; annualInterestRate = 0.18; monthlyPaymentRate = 0.08
```

Output:

```
181.11
```

Test Case 5

```
balance = 416; annualInterestRate = 0.18; monthlyPaymentRate = 0.06
```

Output:

```
236.71
```

Test Case 6

```
balance = 430; annualInterestRate = 0.15; monthlyPaymentRate = 0.04
```

Output:

```
305.82
```