Problem 1

Problem 1 - Paying Debt off in a Year

10.0/10.0 points (graded)

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:

1. `balance` - the outstanding balance on the credit card
2. `annualInterestRate` - annual interest rate as a decimal
3. `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, print out the remaining balance. Be sure to print out no more than two decimal digits of accuracy - so print

```
Remaining balance: 813.41
```

instead of

```
Remaining balance: 813.4141998135
```

So your program only prints out one thing: the remaining balance at the end of the year in the format:

```
Remaining balance: 4784.0
```

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)

We provide sample test cases below. We suggest you develop your code on your own machine, and make sure your code passes the sample test cases, before you paste it into the box below.

Test Cases to Test Your Code With. Be sure to test these on your own machine - and that you get the same output! - before running your code on this webpage!

Click to See Problem 1 Test Cases

```
# Paste your code into this box
def payingDebt(PreviousBalance, annualInterestRate, monthlyPaymentRate, tempo=
    """:arg: PreviousBalance - saldo pendente no cartão de crédito
             annualInterestRate - Taxa de juros anual as a decimal
             monthlyPaymentRate - Pagamento mínimo (percentual) as a decimal
             tempo - período de tempo a ser avaliado

        ;out: None. print the remaining balance with two decimal digits of acc
        ex.: Remaining balance: 361.61
    """

    # Taxa de Juros mensal
    monthly_interest_rate = annualInterestRate/12
    # Pagamento mensal mínimo
    minimum_monthly_payment = monthlyPaymentRate * PreviousBalance
    #Saldo mensal não pago
```

Press ESC then TAB or click outside of the code editor to exit

Correta

Test results

Hide output

CORRECT

Test Case 1

balance = 42; annualInterestRate = 0.2; monthlyPaymentRate = 0.04

Output:

```
Remaining balance: 31.38
```

Test Case 2

balance = 484; annualInterestRate = 0.2; monthlyPaymentRate = 0.04

Output:

```
Remaining balance: 361.61
```

Randomized Test Case 1

balance = 150; annualInterestRate = 0.2; monthlyPaymentRate = 0.06

Output:

```
Remaining balance: 87.05
```

Randomized Test Case 2

balance = 273; annualInterestRate = 0.2; monthlyPaymentRate = 0.06

Output:

```
Remaining balance: 158.43
```

Randomized Test Case 3

balance = 391; annualInterestRate = 0.15; monthlyPaymentRate = 0.05

Output:

```
Remaining balance: 245.25
```

Randomized Test Case 4

balance = 47; annualInterestRate = 0.15; monthlyPaymentRate = 0.06

Output:

```
Remaining balance: 25.96
```

Hide output

Hints

Only two decimal digits of accuracy?

Use the `round` function at the end of your code!

How to think about this problem?

To help you get started, here is a rough outline of the stages you should probably follow in writing your code:

- For each month:
  - Compute the monthly payment, based on the previous month's balance.
  - Update the outstanding balance by removing the payment, then charging interest on the result.
  - Output the month, the minimum monthly payment and the remaining balance.
  - Keep track of the total amount of paid over all the past months so far.
- Print out the result statement with the remaining balance.

Use these ideas to guide the creation of your code.

Important

Only hit "Check" once per submission. You only get 30 checks per problem.

If you believe you have correct code but it is marked incorrect after clicking "Check"...

"Staff Debug: L397 Error" means your code has an infinite loop...

Do not define your own values

Enviar You have used 2 of 30 attempts

Problem 1 - Paying Debt off in a Year

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Topic: Problem Set 2 / Problem 1

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? Grading
Please help me!! I joined for this course now. But I saw that pset1 is over and I don't think I'll b... 3

help please! I'm sure this problem is easily fixed, but why do I get a "return outside function" syntax error?
b=balance mr=monthlyPaymentRate ir=annualInterestRate m=12 while m>0: m-=1 b=(b-(b*m... 3

? code works in spyder but my output in the grader is 0
i used a for loop to solve this and when i coded in spyder my code worked fine however when... 2

? Be caution to not write functions!
I started creating a function called BankBalance and didn't work. The problem is straightforwa... 3