

Program Description

This program calculates interest earned and total amount over a number of years

Program Source Code

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lab3.py ×
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1  #-----
2  # Program Name: lab3.py
3  # Program Description:
4  # This program calculates the total amount of principle plus interest compounded
5  # over a number of years.
6  #
7  # total = p*(1+(r/100)/n)**(n*t)
8  # interest=total-p
9  # p is initial principle
10 # r is the annual interest rate
11 # n is how many times the interest compounds in a year
12 # t is the number of years that the account earns interest
13 #
14 # @Author: Sheng Lim
15 # @Date: 7/1/2023
16 #-----
17 from datetime import datetime
18
19 name="Sheng Lim"
20 lab_name="Lab 3 - Interest Rate"
21 current_time=datetime.now()
22 current_time_in_request_format=current_time.strftime("%b-%d-%Y %a (%I:%M:%S%p)")
23
24 print("{:16}".format("Name"),":", "CNET-142", name)
25 print("{:16}".format("Lab"),":", lab_name)
26 print("{:16}".format("Current Time"),":", current_time_in_request_format)
27
28 while True:
29     p=float(input("Enter the starting principal, 0 to quit: "))
30
31     if p<=0:
32         break
33     r=float(input("Enter the annual interest rate: "))
34     n=int(input("How many times per year is the interest compounded? "))
35     t=int(input("For how many years will the account earn interest? "))
36
37     total=p*(1+(r/100)/n)**(n*t)
38     #total_1='{0:.2f}'.format(total) This one works but too lengthy
39     total_1= round(total,2)
40     interest=total-p
41     #interest_1='{0:.2f}'.format(interest) This one works but too lengthy
42     interest_1= round(interest,2)
43
44     print("At the end of",t,"years you will have $",total_1,"with interest earned $",interest_1)
```

Program Execution

```
Lab          : Lab 3 - Interest Rate
Current Time : Jul-01-2023 Sat (06:27:22PM)
Enter the starting principal, 0 to quit: 12000
Enter the annual interest rate: 1.95
How many times per year is the interest compounded? 365
For how many years will the account earn interest? 2
At the end of 2 years you will have $ 12477.23 with interest earned $ 477.23
Enter the starting principal, 0 to quit: 2000
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Enter the starting principal, 0 to quit: 3000
Enter the annual interest rate: 1.89
How many times per year is the interest compounded? 1
For how many years will the account earn interest? 1
At the end of 1 years you will have $ 3056.7 with interest earned $ 56.7
```

```
Enter the starting principal, 0 to quit: 0
Mac-mini:lab3 fibers$
```