Python Project

Group:10

Group Members:

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Problem Statement:

Project 10:

You task is to build a scientific calculator that performs all the below listed functionalities.

1. Add, sub, multiply, divide, and mod (%) operations on entered integer or floating type

numbers.

2. Square root, exponent (power (a, b))

3. Sine, cosine, and tangent (Trigonometric functions).

4. Conversion from radian to degree and degree to radian.

Above listed operations user can perform as many numbers of times until user hits the

exit.

(Student is free to decide the input and output layout for this mini project)

Code:

```python
op = str(input("Operation:"))
import math
while(op!="exit"):
    if(op=="square root" or op=="root"):
        num=float(input("Number:"))
        print("Square root of",num,"is:",math.sqrt(num))
        print()
        op = str(input("Operation:"))

    elif(op=="sine" or op=="sin"):
        num = float(input("Degree:"))
        print("Sine(",num,"):",math.sin(math.radians(num)))
        print()
        op = str(input("Operation:"))

    elif(op=="cosine" or op=="cos"):
        num = float(input("Degree:"))
        print("Cosine(",num,"):",math.cos(math.radians(num)))
        print()
        op = str(input("Operation:"))

    elif(op=="tangent" or op=="tan"):
        num = float(input("Degree:"))
        print("Tangent(",num,"):",math.tan(math.radians(num)))
        print()
        op = str(input("Operation:"))

    elif(op=="radian"):
        num = float(input("Degree:"))
        print("Radian:",math.radians(num))
        print()
        op = str(input("Operation:"))

    elif(op=="degree"):
        num = float(input("Radian:"))
        print("Degree:",math.degrees(num))
        print()
        op = str(input("Operation:"))

    elif(op in ["add","+","sum"]):
        num1=float(input("number1:"))
        num2=float(input("number2:"))
        print("Addition:",num1+num2)
        print()
        op = str(input("Operation:"))
```

```python
    elif(op=="sub" or op=="-"):
        num1 = float(input("number1:"))
        num2 = float(input("number2:"))
        print("Subtraction:",num1-num2)
        print()
        op = str(input("Operation:"))

    elif(op=="multiply" or op=="x"):
        num1 = float(input("number1:"))
        num2 = float(input("number2:"))
        print("Multiplication:",num1*num2)
        print()
        op = str(input("Operation:"))

    elif(op=="divide" or op=="/"):
        num1 = float(input("number1:"))
        num2 = float(input("number2:"))
        print("Division:",num1/num2)
        print()
        op = str(input("Operation:"))

    elif(op=="mod" or op=="%"):
        num1 = float(input("number1:"))
        num2 = float(input("number2:"))
        print("Modulus division:",num1//num2)
        print()
        op = str(input("Operation:"))

    elif(op=="exponent" or op=="power"):
        num1 = float(input("Base:"))
        num2 = float(input("Power:"))
        print("pow(",num1,",",num2,"):",num1**num2)
        print()
        op = str(input("Operation:"))
    else:
        print("Invalid Operation")
        print()
        op = str(input("Operation:"))

print("THANK YOU")
```

Screenshots of Code Running:

```
Operation:root
Number:4
Square root of 4.0 is: 2.0

Operation:mod
number1:34
number2:14
Modulus division: 2.0

Operation:sin
Degree:0
Sine( 0.0 ): 0.0

Operation:add
number1:4
number2:78
Addition: 82.0

Operation:exponent
Base:5
Power:3
pow( 5.0 , 3.0 ): 125.0

Operation:exit
THANK YOU
```