Asignment 3 To Vu Tran

September 10, 2023

1 Asignment 3

1.1 Date 09/09/2023

1.1.1 Name: To Vu Tran

1. Write a lambda expression to get the product of two numbers

[156]:
```
mul_question1 = lambda number1,number2 : number1 * number2
print("Run test for expression(5,6)")
print("Output:",mul_question1(5,6))
```

```
Run test for expression(5,6)
Output: 30
```

2. Write a function to get the area of a circle from the radius.

[157]:
```
import math
pi = math.pi

# Formula the area of a circle
def area_of_a_circle(radius):
    return (radius**2*pi)

# Import radius from keyboards
radius = float(input("Run test for function: "))
print("Output:",area_of_a_circle(radius))
```

```
Run test for function: 10
Output: 314.1592653589793
```

3. Build a simple calculator which can: add, subtract, multiply, divide

[158]:
```
# Function to add two numbers
def add(number1, number2):
    return number1 + number2

# Function to subtract two numbers
def subtract(number1, number2):
    return number1 - number2
```

```
# Function to multiply two numbers
def multiply(number1, number2):
    return number1 * number2

# Function to divide two numbers
def divide(number1, number2):
    return number1 / number2

# Import number from keyboards
number1 = input("Enter first number: ")
number2 = input("Enter second number: ")

# Float format
number1 = float(number1)
number2 = float(number2)

while True:
    #Choice calculus
    print("Please choice calculus number: \n" \
            "1. Add\n" \
            "2. Subtract\n" \
            "3. Multiply\n" \
            "4. Divide\n")

    # Take input from the user
    calculus = int(input("Choice calculus number 1, 2, 3, 4 :"))

    if calculus == 1:
        print(number1, "+", number2, "=", add(number1, number2))

    elif calculus == 2:
        print(number1, "-", number2, "=", subtract(number1, number2))

    elif calculus == 3:
        print(number1, "*", number2, "=", multiply(number1, number2))

    elif calculus == 4:
        if number2 == 0:
            print ("Can't to divide by denominator is 0")
        else:
            print(number1, "/", number2, "=", divide(number1, number2))
    else:
        print("Your number input invalid")

    # Choice of user continue or not for 2 numbers
    other_calculus = input("Do you want to choice other calculus for 2 your␣
 ↪numbers? (y/n): ")
```

```
    if other_calculus == "n":
        break
```

```
Enter first number: 2
Enter second number: 5
Please choice calculus number:
1. Add
2. Subtract
3. Multiply
4. Divide

Choice calculus number 1, 2, 3, 4 :4
2.0 / 5.0 = 0.4
Do you want to choice other calculus for 2 your numbers? (y/n): n
```

4. Define a class named Rectangle which can be constructed by a length and width. The Rectangle class has a method which can compute the area.

[159]:
```
class Rectangle():
    # Constructor of class Rectangle
    # Instance attribute
    def __init__(self, length, width):
        self.length = length
        self.width = width

    # Formula the area of a rectangle
    def area(self):
        return self.length*self.width
# Print result
r = Rectangle(5,10)
r.area()
```

[159]: 50

5. Define a class named Shape and its subclass Square. Shape objects can be consrtucted by name and length has an area function wich return 0 Square subclass has an init function which take a length and name as argument and has an area method and a describe method what prints the name of the Shape.

[160]:
```
class Shape():
    # Constructor of class Shape
    # Instance attribute of class shape
    def __init__(self, name, length):
        self.name = name
        self.length = length

    def area(self):
        return 0
```

```
    # Constructor of subclass Square
class Square(Shape):
    def __init__(self, length, name):
        super().__init__(length, name) # super: Object from Shape

    # Formula the area of a rectangle
    def area(self):
        return self.length*self.length

    def describe(self):
        return self.name

# Print result
s = Square('square',5)
print("The area is:\n",s.area())
print("This is a:",s.describe())
```

```
The area is:
 25
This is a: square
```

[ ]: