ShadiSabzaliweek3

February 12, 2025

SHADI SABZALI (Elsa)

Assignment week 3

11/02/2025

---

exercise 1 : Write a lambda expression to get the product of two numbers.Run test for expression(5,6)Output:30

[32]:
```
print("write first numbers")
num1 = int(input())
print(num1)
print("write second numbers")
num2= int(input())
print(num2)
x = lambda num1,num2 : num1*num2
print("sum is",x(num1,num2))
```

```
write first numbers
 3
3
write second numbers
 5
5
sum is 15
```

---

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

Hint: remember to import the right modul for being able to calculte the area of the circle.Run test for function(10)Output:314.1592653589793

[27]:
```
from math import pi
def area (radius) :
    return( pi * radius**2)

print("Type the radius")
```

```
r= int(input())
print("Area of the circle is", area(r))
```

```
Type the radius

 10

Area of the circle is 314.1592653589793
```

---

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

Hint: solve by writing a function that takes as argument two numbers and the operation and returns the desired output.Run test for function(2,5,'d')Output: 0.4

[15]:
```
def calculate ( a, b, operator) :
    if  operator == "add" :
        return a+b
    elif operator == "subtract" :
        return a-b
    elif operator == "multiply" :
        return a*b
    elif operator == "divide" :
        return a/b
    else:
        return ("Error")

print("type first number")
num1=int(input())
print("type second number")
num2=int(input())
print("choose the operator between : add, subtract, multiply, divide")
op= str(input())
print(num1, op , num2 , "is", calculate(num1,num2,op))
```

```
type first number

 2

type second number

 5

choose the operator between : add, subtract, multiply, divide

 multiply

2 multiply 5 is 10
```

---

exercise 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.

Run test for r = Rectangle(5,10)r.area()Output: 50

[80]:
```
class Rectangle:
    def __init__(self, length, width):
        self.length = length
        self.width = width

    def area(self):
        return self.length * self.width

# Test
r = Rectangle(5, 10)
print(r.area())
```

```
50
```

[84]:
```
print("type the length")
l=int(input())
print("type the width")
w=int(input())
r2=Rectangle(l,w)
print("The area is",r2.area())
```

```
type the length
 4
type the width
 5
The area is 20
```

---

exercise 5 : Define a class named Shape and its subclass Square.

Shape objects can be consrtucted by name and length has an area function which return 0

Square subclass has an init function which take a length and name as argumentand has an area method and a describe method what prints the name of the Shape.

Print the area from Square class.

Run test for: s = Square('square',5)

print(s.area())print(s.describe())

Output: The area is: 25

This is a: square

[110]:
```
class Shape:
    def __init__(self,name,length):
```

```
        self.name=name
        self.length=length

    def area(self):
        return 0

class Square(Shape):
    def describe(self):
        return (self.name)
    def area(self):
            return self.length * self.length
#test
s = Square('square',5)
print("The area is",s.area())
print("The names is" , s.describe())
```

```
The area is 25
The names is square
```

[ ]: