Exercise 3

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Assignment 3

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

[65]:
```
X = lambda num1,num2: num1*num2
X(5,6)
```

[65]:
```
30
```

Question 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

[66]:
```
import math
radius = float(input("Enter the radius of your circle: "))
area = math.pi*radius*radius
print("The area of the circle is: ",area)
```

```
Enter the radius of your circle:  10
```

```
The area of the circle is:  314.1592653589793
```

Question 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

[67]:
```
#### defining operations
print("1 - Add")
print("2 - Subtract")
print("3 - Multiply")
print("4 - Divide")
option = int(input("Choose operation from above numbers: ")) # ask tomchoose an␣
 ↪operation
result = 0
```

```
if(option in [1,2,3,4]):
    num1 = float(input("Enter first number: "))     #float to have decimals
    num2 = float(input("Enter second number: "))
    if(option == 1):
        result = num1 + num2
    elif(option == 2):
        result = num1 - num2
    elif(option == 3):
        result = num1 * num2
    elif(option == 4):
        result = num1 / num2

else:
    print("Invalid operation entered")
print("The result of the operation is: ",(result))
```

```
1 - Add
2 - Subtract
3 - Multiply
4 - Divide

Choose operation from above numbers:  4
Enter first number:  2
Enter second number:  5

The result of the operation is:  0.4
```

Question 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

[68]:
```
class Rectangle():
    def __init__(self,length,width):
        self.length=length
        self.width=width

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

l=int(input("Enter the length of the Rectangle: "))
w=int(input("Enter the width of the Rectangle: "))

r=Rectangle(l,w)
print("Area of the Rectangle is: ",r.area())
```

```
Enter the length of the Rectangle:  5
Enter the width of the Rectangle:  10

Area of the Rectangle is:  50
```

Question 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. 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

[69]:
```
#Defining the class
class Shape:
    def __init__(self,name,length):
        self.name=name
        self.length=length
    def area(self):          #Defining area method which give 0
        return 0

#Defining sub class square
class Square(Shape):
    def __init__(self,name,length):
        super().__init__(name,length)      #Initialization with parent class

    #override the area method for square
    def area(self):
        return self.length*self.length

    #Defining the method to describe the name of the shape
    def describe(self):
        return f"The is a: {self.name}"
#Test run
s=Square('Square',5)
print(f"The area is: {s.area()}")
print(s.describe())
```

```
The area is: 25
The is a: Square
```

[ ]: