Assignment 3

February 14, 2025

0.1 Student Name : Priyanga Jayasinghe

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

[60]:
```
product=lambda x,y:x * y
print(product(5,6))
```

```
30
```

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

[61]:
```
import math
def circle_area(radius):
    return math.pi * radius ** 2
print(circle_area (10))
```

```
314.1592653589793
```

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

[62]:
```
def calculator (x,y, operation):
    if operation == 'x': # Addition
        return x + y
    elif operation == 's': # Subtract
        return x - y
    elif operation == 'm': # Multiply
        return x * y
    elif operation == 'd': # division
        return x / y
    else:
        return "Invalid"
print(calculator(2,5,'d'))
```

```
0.4
```

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

[63]:
```
class Rectangle :
    def __init__(self, L,W):
        self.length = L
        self.width  = W
    def area(self):
        return self.length * self.width
r = Rectangle(5,10)
print (r.area())
```

```
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. 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

[64]:
```
class Shape:
    def __init__(self,name,length):
        self.name = name
        self.length = length
    def area(self):
        return (0)
class Square(Shape):
    def __init__(self,name,length):
       super().__init__(name,length)
    def area(self):
       print("The area is:")
       return self.length ** 2
    def describe(self):
       return f"This is a: {self.name}"
s = Square('Square',5)
print(s.area())
print(s.describe())
```

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