Assignment 3

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1 Assignment 03

Name: **Ashanshi Nipuni Sathyanjali Uggoda Senanayaka Athapaththu Herath Mudiyanse Ralahamilage**

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

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

[10]:
```
#making single line function
x = lambda n1,n2:n1*n2
#calling the function
x(5,6)
```

[10]:
```
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

[18]:
```
#import the munpy library
import numpy
#creating the function
def area(r):
#assining the value of mathematicle function pi
    pi=numpy.pi
#calculate the area
    calculate_area =r*r*pi
    print(calculate_area)
#calling the function
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

[20]:
```
#creating the function
def cal(n1,n2,f):
    #calculation for adding
    if f=='a':
        calculation=n1+n2
    #calculation for substract
    elif f=='s':
        calculation=n1-n2
    #calculation for multiply
    elif f=='m':
        calculation=n1*n2
    #calculation for divition
    elif f=='d':
        calculation=n1/n2
    #unavailable massage
    else:
        calculation=" function is unavailable try 'a','s','m','d' "
    print(calculation)
#calling the function
cal(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

[22]:
```
#creating the class
class Rectangle:
    #creating a functions
    def __init__(self, length, width):
        self.length = length
        self.width = width
    def area(self):
        x=self.length * self.width
        print(x)
#testrun
r = Rectangle(5, 10)
r.area()
```

50

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

   Shape objects can be consrtucted by name andlengthhas an area function wich 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

[24]:
```
#creating the class
class Shape:
    #creating the functions
    def __init__(self, name, length):
        self.name = name
        self.length = length
    def area(self):
        return 0

#creating the subclass
class Square(Shape):
    #creating the functions
    def __init__(self, name, length):
        super().__init__(name, length)
    def area(self):
        return f"The area is:\n {self.length ** 2}"
    def describe(self):
        return f"This is a: {self.name}"

#testrun
s = Square('square', 5)
print(s.area())
print(s.describe())
```

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

[ ]: