

Assignment 3

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Exercise 3

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

Run test for expression(5,6)

Output: 30

In [31]:

```
result = lambda x,y : x*y
print("Output: " + str(result(5,6)))
```

Output: 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

In [38]:

```
import math

def get_circle_area(radius):
    return math.pi * radius ** 2
print("Output: " + str(get_circle_area(10)))
```

Output: 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

In [39]:

```
def calc(num1,num2,op):
    operations = {
        "d": lambda x, y: x + y,
        "s": lambda x, y: x - y,
        "m": lambda x, y: x * y,
        "d": lambda x, y: x / y
    }
    func = operations.get(op)
    if func:
        return func(num1,num2)
    else:
        print("Invalid operation")
print("Output: " + str(calc(2,5,'d')))
```

Output: 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

In [40]:

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

    def area(self):
        return self.length * self.width
r = Rectangle(5,10)
print("Output: " + str(r.area()))
```

Output: 50

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

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

Square subclass has an init function which takes a length and name as argument and has an area method and a describe method which 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

In [41]:

```
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):
        return self.length**2
    def describe(self):
        return "This is a: " + self.name

s = Square('square', 5)
print("Output: The area is:")
print(s.area())
print(s.describe())
```

Output: The area is:

25

This is a: square