Assignment 3

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Yishak Addis Dessalegne

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

In [1]:
```
x = lambda num_1 , num_2: num_1 * num_2
result = x(5,6)
print("Run test for expression (5,6) ")
print("Output: ", result)
```

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

2) Write a function to get the area of a circle from the radius

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

print("Run test for function(10)")

result = circle_area(10)

print("Output:",result)
```

```
Run test for function(10)
Output: 314.1592653589793
```

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

In [3]:
```
def calculator(num1, num2, operation):

 if operation == 'a':
    return num1 + num2
 elif operation == 's':
    return num1 - num2
 elif operation == 'm':
    return num1 * num2
 elif operation == 'd':
    return num1 / num2
print("Run test for function(2,5,'d')")
result = calculator(2,5,"d")
print("Output:", result)
```

```
Run test for function(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.

In [4]:
```
class Rectangle:
    def __init__(self,length, width):
        self.length = length
```

```
        self.width = width

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

print("Run test for r = Rectangle(5,10)")
print("                 r.area()")
r = Rectangle(5, 10)
result = r.area()
print("Output:", result)
```

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

In [5]:
```
class Shape:
    def __init__(self, name, length):
        self.name = name
        self.length = length

class Square(Shape):
    def __init__(self, name, length):
        super().__init__(name, length)

    def area(self):
        return self.length**2

    def describe(self):
        return f"This is a: {self.name}"
s = Square('square', 5)
print("Run test for: s = Square('square',5)")
print("Output: The area is:")
print( s.area())
print(s.describe())
```

```
Run test for: s = Square('square',5)
Output: The area is:
25
This is a: square
```

In [ ]:
```

```