ASSIGNMENT 3

REIHANEH NIKNAHAD

09/14/2025

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

[5]:
```
R = lambda number1 , number2 : number1 * number2
R (5,6)
```

[5]:
```
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
```

[42]:
```
                    import math
def area_of_circle(radius):
    return math.pi * radius ** 2      #the exact value of the number p
print(area_of_circle (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
```

[100]:
```
def calculator (number1,number2,operation):
    if operation == '+':
        return number1 + number2
    elif operation == '-':
        return number1 - number2
    elif operation == '*':
        return number1 * number2
    elif operation == '/':
        return number1 / number2
    else:
      return "Invalid operation"
calculator(2,5,"/")
```

[100]:
```
0.4
```

[100]:
```
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
```

[134]:
```
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(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
```

[160]:
```
class Shape:
    def __init__(self, name, length):
        self.name = name
        self.length = length
    def area(self):
        return 0
    def describe(self):
        return f"This is a {self.name}"
class square(Shape):
    def __init__(self,length,name="square"):
        super().__init__(name,length)
    def area(self):
        return self.length * self.length
s = square(5,square)
print(s.describe())
print("The area is:",s.area())
```

```
This is a <class '__main__.square'>
The area is: 25
```