Assignment3

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1 Assignment 3

1.1 17-02-2025

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2 Exercise 1

[19]:
```
product = lambda x, y: x * y
result = product(5, 6)
print("output :",result)
```

```
output : 30
```

3 Exercise 2

[21]:
```
import math

# create the funtion
def area_of_circle(radius):
    return math.pi * radius**2

# Test the function with radius 10
area = area_of_circle(10)
print("output :",area)
```

```
output : 314.1592653589793
```

4 Exercise 3

[23]:
```
def calculator(num1, num2, operation):
    # Addition
    if operation == 'a':
        return num1 + num2
    # Subtraction
    elif operation == 's':
        return num1 - num2
    # Multiplication
```

```
    elif operation == 'm':
        return num1 * num2
    # Division
    elif operation == 'd':
        if num2 != 0:
            return num1 / num2
        else:
            return "Error! Division by zero."
    else:
        return "Invalid operation."

# Test the function with given input (2, 5, 'd')
result = calculator(2, 5, 'd')
print("output :",result)
```

```
output : 0.4
```

5 Exercise 4

[25]:
```
class Rectangle:
    def __init__(self, length, width):
        self.length = length
        self.width = width

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

# Create a Rectangle  with length 5 and width 10
r = Rectangle(5, 10)

# Calculate and print the area of the rectangle
print("Output :",r.area())
```

```
Output : 50
```

6 Exercise 5

[27]:
```
class Shape:
    def __init__(self, name):
        self.name = name

    def area(self):
        return 0

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

```
        self.length = length

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

    def describe(self):
        return self.name

# Test case
s = Square('square', 5)
print("The area is:",s.area())
print("This is a:",s.describe())
```

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

[ ]: