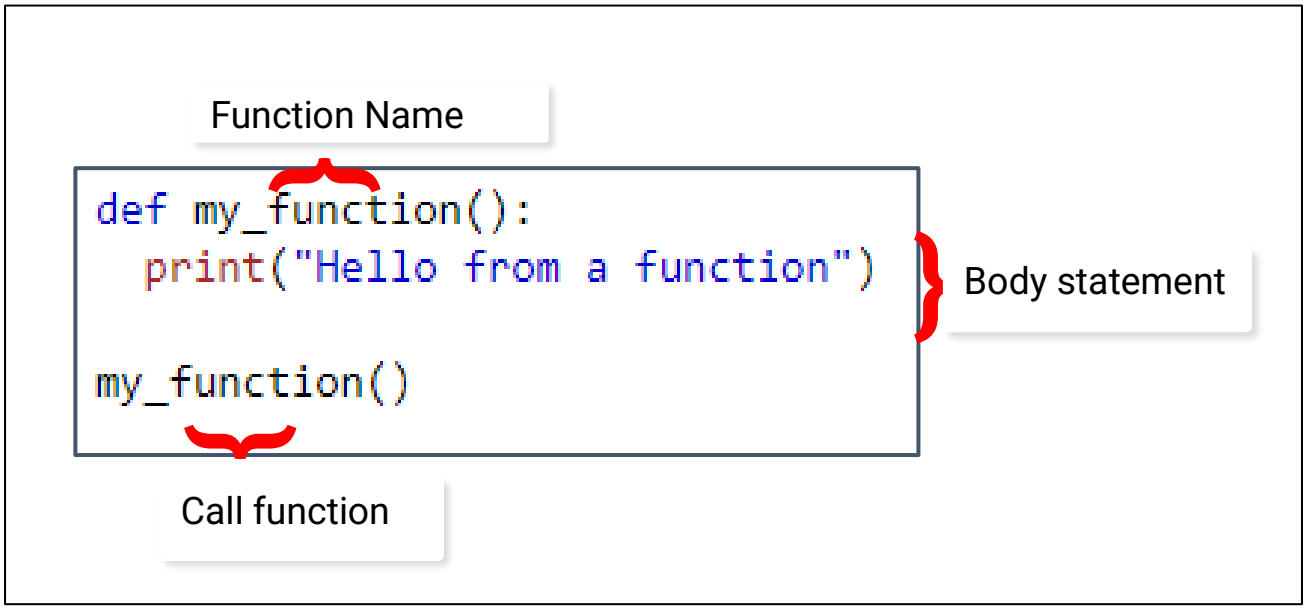
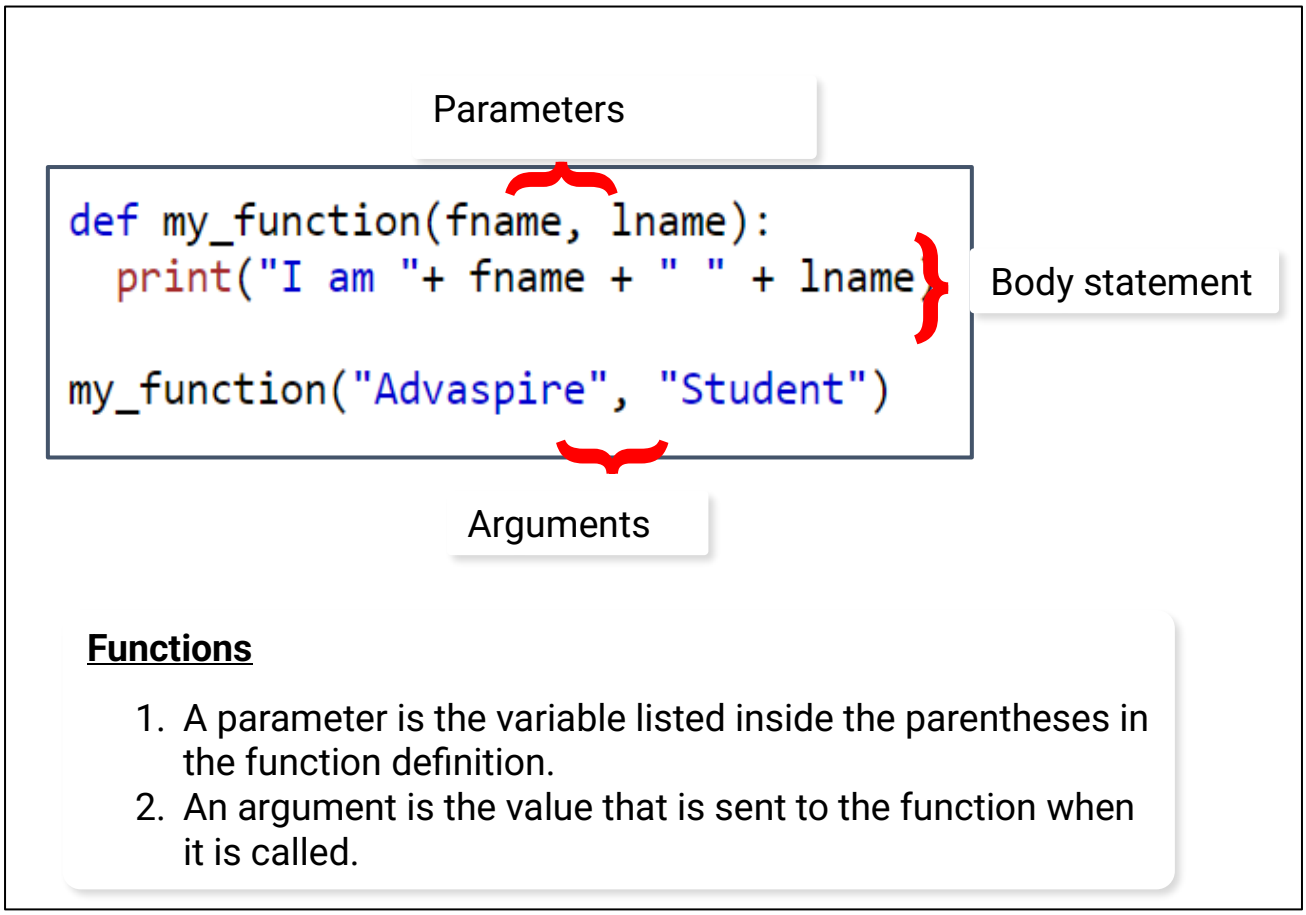
# Python Notes: Functions

## 1.) Create function:




## 2.) function with parameters & arguments:




**Functions**

1. A parameter is the variable listed inside the parentheses in the function definition.
2. An argument is the value that is sent to the function when it is called.

## 3.) function with return values:

```
def my_function(x):
  return 5 * x

print(my_function(3))
print(my_function(5))
print(my_function(9))
```

Expected Result

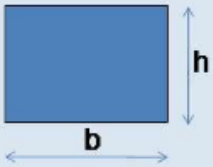
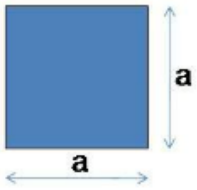
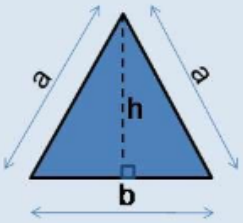
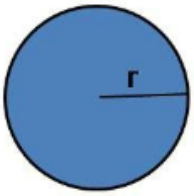
## 4.) Sample: calculates the area of a rectangle with input

```
def calculate_rectangle_area(length, width):
    area = length * width
    return area

print("Im math bot, help you calculate the rectangle area")
print("tell me the length")
user_length = int(input())
print("tell me the width")
user_width = int(input())
print("Area of rectangle:", calculate_rectangle_area(user_length, user_width))
```

```
Im math bot, help you calculate the rectangle area
tell me the length
122
tell me the width
33
Area of rectangle: 4026
```

## Mission:

| SHAPE | NAME | AREA | PERIMETER |
|---|---|---|---|
|   | RECTANGLE | $h \times b$ | $2 \times (h + b)$ |
|   | SQUARE | $a \times a$ | $4 \times a$ |
|   | TRIANGLE | $\frac{1}{2} \times h \times b$ | $a + a + b$ |
|   | CIRCLE | $\Pi \times r^2$ | $2 \times \Pi \times r$ |

For circle: $\pi = 3.14$

## Task 1:

Area Shapes Calculator

1. Rectangle

2. Square

3. Triangle

4. Circle

Enter your choice (1-4):

1

Enter the length of the rectangle:

10

Enter the width of the rectangle:

20

Area of rectangle: 200.0

- *Use function with return to define the shapes formula*

## Task 2:

Shapes Calculator

1. Rectangle

2. Square

3. Triangle

4. Circle

5. Quit

Enter your choice (1-5): 1

Do you want to calculate area or perimeter?

1. Area

2. Perimeter

Enter your choice (1-2): 1

Enter the length of the rectangle: 10

Enter the width of the rectangle: 20

Area of rectangle: 200.0

Shapes Calculator

1. Rectangle

2. Square

3. Triangle

4. Circle

5. Quit

Enter your choice (1-5): 5

Thank you for using the Shapes Calculator. Goodbye!