

# User Defined Function with return

# Using **return** keyword in a Function

- **return** keyword
  - **returns information from the function**
  - and **breaks** out of the function

use **return** keyword to return something from the function

```
def square(num):
```

```
    return num*num
```

```
print("A number squared is: ", square(4))
```

#calls the function,

#passes 4 (argument) to the function

#returns breaks out of the function

#goes back to location it was called

#What will be printed?

# Another Example

```
def square(num):
```

```
    return num*num
```

```
result = square(4)
```

```
print("A number squared is: ", result)
```

#**return** keyword will **break** out of the  
#function

#**calls the function**

#**passes 4** (argument) to the function

use **return** keyword to return something from the function

```
def add_numbers(num1, num2):
```

```
    sum = num1 + num2
```

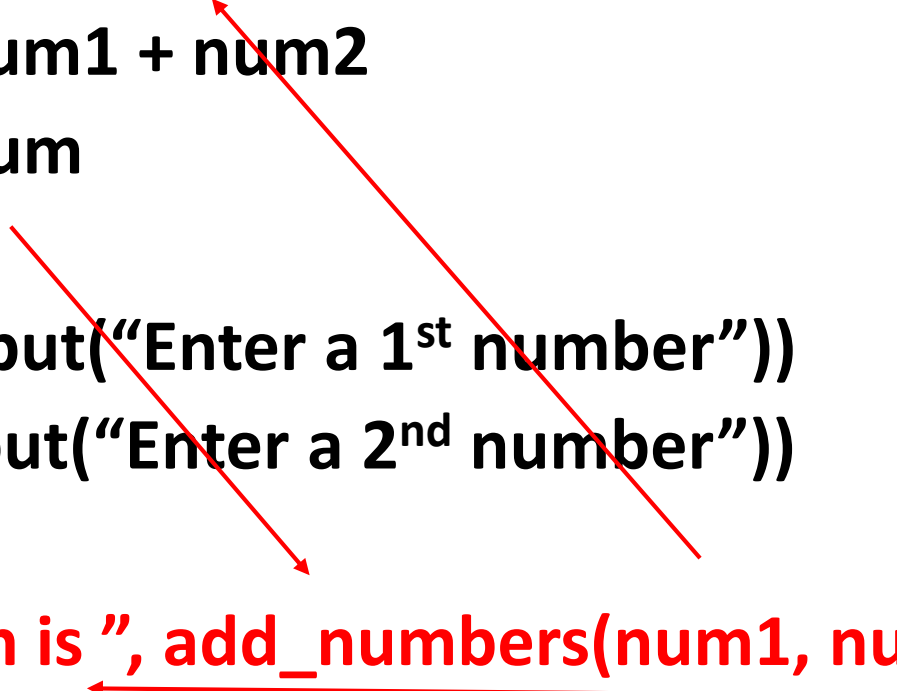
```
    return sum
```

```
num1 = int(input("Enter a 1st number"))
```

```
num2 = int(input("Enter a 2nd number"))
```

```
print("The sum is ", add_numbers(num1, num2))
```

**#calls** the function,  
**#passes num1, num2** (arguments)  
**#to the function**  
**#returns** breaks out of the function  
**#goes back** to where the function was  
**#called**

A diagram illustrating the flow of data and control in the provided Python code. Two red arrows originate from the function call `add_numbers(num1, num2)` in the `print` statement. One arrow points to the `num1` parameter in the function definition `def add_numbers(num1, num2):`, and the other points to the `num2` parameter. A third red arrow originates from the `return` statement `return sum` inside the function and points to the opening quote of the `print` statement, indicating the return value being passed back to the caller.

**return** keyword to break out of the function and go back to where function was called.

```
def calculator(a, b):  
    print("Addition:", a + b)  
    print("Subtraction:", a - b)  
    print("Multiplication:", a * b)  
    print("Division:", a / b)  
    return
```

```
a = int(input("Enter a 1st number"))
```

```
b = int(input("Enter a 2nd number"))
```

```
calculator(a, b)
```

**#calls** the function,

**#passes a, b** (arguments)

**#to the function**

**#returns** breaks out of the function

**#goes back** to where the function was called

```
# Python Functions Example
```

```
def sumAndAverage(x, y, z):
```

```
    Sum = x + y + z
```

```
    Average = Sum/3
```

```
    print("\n %d is the Total Sum of three Numbers." %Sum)
```

```
    print("\n %d is the Average of three Numbers.\n" %Average)
```

```
# Allows User to enter three values
```

```
a = int(input("\nPlease Enter the First Value. a = "))
```

```
b = int(input("\nPlease Enter the Second Value. b = "))
```

```
c = int(input("\nPlease Enter the Third Value. c = "))
```

```
# Calling the Function
```

```
sumAndAverage(a, b, c) ← #Calls the function 1st time
```

```
sumAndAverage(10, 20, 30) ← #Calls the function 2nd time
```

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**User Defined Function with return  
Examples**