

# Python Chapter 4: Functions

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# Functions

Here we will discuss the most basic example of a Function.  
Functions are for when you want to repeat code.

```
def myFunction():  
  
    print(" Hello from a function")  
  
myFunction() # Prints " Hello from a function"
```

# Function Arguments

```
def hello(name):  
    print("hello " + name)  
  
hello("Zeak") # Prints "hello zeak"
```

# Functions

One cool thing you can do from a function is call itself, for recursion!

```
def myFunction():
```

```
    print("I am a good programmer!")
```

```
myFunction()
```

```
myFunction() # Prints "I am a good programmer" endlessly!
```

# Recursion Base Case

What to do when you want to exit? Base case!

```
def myFunction(count):
```

```
    if count == 100:
```

```
        return
```

```
        print("I am a good programmer!")
```

```
    myFunction()
```

```
myFunction(0) # Prints "I am a good programmer" 100 times
```

# Recursion Exercise

Generate the sum of the value of Pascal's Triangle at N.

## Recursion Exercise Solution

```
def triangle(n):  
    if n == 0:  
        return []  
    elif n == 1:  
        return [[1]]  
    else:  
        newRow = [1]  
        result = triangle(n-1)  
        lastRow = result[-1]  
        for i in range(len(last_row)-1):  
            new_row.append(last_row[i] + last_row[i+1])  
        newRow += [1]  
        result.append(new_row)  
    return result
```