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

```python
def hello(name):
    print("hello " + name)

hello("Zeak") # Prints "hello zeak"
```

Recursion

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

```
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!

```python
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

```python
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
        newRow += [1]
        result.append(new_row)
    return result
```