

# Python Cookbook

April 10, 2018

## 1 Python Cook Book

Python is a simple language to learn. By running the following codes, You must be able to get started with Programing using Python.

### 1.0.1 Getting Started

Open a new Python Document from the shell. And then **Let's write our first Program**

Write the following Program:

```
In [1]: print "Hello World"
```

Hello World

Congratulations!! You have written your first code! Did you get your output as *Hello World*  
Now let's create our first variable! To create, type the following:

```
In [3]: a = 100  
        b = 200.0  
        c = "You"
```

Congratulations, you have created 3 variables! But you cannot see any output! Go ahead let's print it out!

```
In [4]: print a  
        print b  
        print c
```

100  
200  
You

There you go! Your variables can be printed now!

**Variables** are nothing but reserved memory locations to store values. This means that when you create a variable you reserve some space in memory. You can store integers, decimals or characters like strings in these variables.

You can perform several operations in Python. Let's add numbers in Python. Type the following code:

```
In [5]: print 5+3
```

8

You can also add variables, if they are numbers.

```
In [7]: ans = a + b
        print ans
```

300

The answer of a+b, that is, 100 + 200 is 300.

Operators are the constructs which can manipulate the value of operands.

Consider the expression  $4 + 5 = 9$ . Here, 4 and 5 are called operands and + is called operator.

### Types of Operator

Python language supports the following types of operators:

- Arithmetic Operators (+, \*, -, /)
- Comparison (Relational) Operators
- Assignment Operators
- Logical Operators
- Bitwise Operators
- Membership Operators
- Identity Operators

[Click Here](#) to look more into operators.

## 1.1 Files, Loops and Functions

Let's now see a program that uses Loop, functions and files. This program will also help you understand how to open a Webpage using Python.

**GOAL:** To create a program that helps a stressful worker to watch a YOUTUBE video and make him relax, 3 times a day

Type the following Program:

```
In [8]: import webbrowser          #webbrowser is file in Python Standard Library
        import time                #time is another file in Python Standard Library
        total_breaks = 3
        break_count = 0

        print "This program started on" + time.ctime()  #ctime() is a function in the file cal
        while(break_count<total_breaks):                #while loop
            time.sleep(2)
            webbrowser.open("www.youtube.com")          #open() is a function in the file call
            break_count = break_count + 1
```

This program started on Mon Apr 09 23:13:05 2018

In the above program we use loop to repeat a function/task  $n$  number of times. In general, statements are executed sequentially: The first statement in a function is executed first, followed by the second, and so on. There may be a situation when you need to execute a block of code several number of times.

Programming languages provide various control structures that allow for more complicated execution paths.

A **loop** statement allows us to execute a statement or group of statements multiple times.

Now let's move on and do more cool stuff!

We shall now write a program to draw a circle of square in Python

```
In [9]: import turtle                                #importing the file/class called Turtle

def draw_square(sqa):                                #creating a function called draw_square
    count = 0
    while (count < 4):
        sqa.forward(100)
        sqa.right(90)
        count = count+1
def draw_art():                                       #creating a function called draw_square
    window = turtle.Screen()
    window.bgcolor("red")
    brad = turtle.Turtle()                           #creating an object called brad for the class turtle
    for i in range(1,37):
        draw_square(brad)
        brad.right(10)
    window.exitonclick()

draw_art()
```

In the above program we define two functions called `draw_square()` and `draw_art()`. Turtle is a class with several functions inside it.

A **function** is a block of organized, reusable code that is used to perform a single, related action. Functions provide better modularity for your application and a high degree of code reusing.

As you already know, Python gives you many built-in functions like `print()`, etc. but you can also create your own functions. These functions are called user-defined functions.

You can define functions to provide the required functionality. Here are simple rules to define a function in Python: - Function blocks begin with the keyword `def` followed by the function name and parentheses `( )`. - Any input parameters or arguments should be placed within these parentheses. You can also define parameters inside these parentheses.

## 1.2 Accessing Internet in Python

Now let's access Internet using Python. Type the following code:

```
In [11]: import urllib                               #Library with web access functionality
def read_text():
    mytxt = open("C:\Users\DELL\Desktop\myfile.txt") #specify your file's path
```

```

readtxt = mytxt.read()
mytxt.close()
chkprof(readtxt)

def chkprof(toc):
    conn = urllib.urlopen("http://www.wdylike.appspot.com/?q="+toc)
    op = conn.read()
    #print(op)
    conn.close()
    if "true" in op:
        print("Profanity")
    elif "false" in op:
        print("No Profanity")
    else:
        print("Connection Error")

read_text()                                #calling the read_text() function

```

No Profanity

[Urllib module](#) provides a high-level interface for fetching data across the World Wide Web. In particular, the `urlopen()` function is similar to the built-in function `open()`, but accepts Universal Resource Locators (URLs) instead of filenames. Some restrictions apply — it can only open URLs for reading, and no seek operations are available.

That's all you need to get started with Python. Now go ahead and explore! The possibilities with Python is endless. The following links will help and guide you throughout your Journey in Python.

<https://docs.python.org/2/contents.html>  
<https://www.tutorialspoint.com/python/index.htm>  
<https://stackoverflow.com>

In [ ]: