**Intoduction**

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**Why you should learn Python?**

**What is Difference Between Python 2 and 3?**

**Anaconda Python distribution installation.**

https://www.anaconda.com/download/

**First Program**

In python 2 you don’t have to add parenthesis but in python 3 you must add the parenthesis for print.

## Comments

Everything after the # is ignored by python. It’s basically used for understanding the code later.

‘’’

‘’’ - this is not a multiline commenting. Python does not have multiline coding. Triple quotes are treated as regular strings with the exception that they can span multiple lines.

It must have to start with a character.

**Boolean**

True or False.

## Numbers and Math

There are 3 types of numbers in python 3 –

* Int - In python 3 you don’t have to worry about the size limit. You can create integers of any size as much your computer can store. So size limit or over flow. e.g –

3, 5000000, 637377363445447477478484

* Float – This is a number with decimal point. E.g – 34.56
* Complex – Mathematical definition for complex numbers -ℂ means {*a* + *b* *i* : *a*,*b* ∈ ℝ}

Here i = √-1. But engineers prefers ‘j’. In python 3 we also use j for complex numbers.

As you know there are 2 parts of complex number. One is real part and one is imaginary part.

So in python 3 you can write 3 + 5.2j. Whatever types of numbers you put in complex numbers python stores both real and imaginary part as *Float*.

All the integer can be converted into floats or complex but not vice versa.

Again, all floats can be converted into complex but not vice versa.

And 10 types of mathematical operations and conditional checking symbol -

1. + plus
2. - minus
3. / divisor
4. \* multiplication
5. % modulus
6. < less-than
7. > greater-than
8. <= less-than-equal
9. >= greater-than-equal.
10. \*\* exponential

**Printing**

For printing we need something called formatted string. There are several ways to do those. I will briefly discuss those.

First – ‘f’……. f stands for format. And you need to embed the variable name with Carli-braces {}.

Python Also has another kind of formatting using “.format()” syntax.

\n Newline

\\ Backslash (\)

\' Single quote (')

\" Double quote (")

\b ASCII Backspace (BS)

\t ASCII Horizontal Tab (TAB)

\r ASCII Carriage Return (CR)

**Input**

We can take inputs by using input() function in python 3. In python everything we take input is string. We have to change their types as per our need.

**Working with files**

There are mainly 2 kinds of files –

* ***Text Files*** 
  + - Plain text
    - XML
    - JSON
    - Source Code
* ***Binary Files***
  + - Compiled Code
    - App Data
    - *Media Files*
      * Images
      * Audio
      * Video

For reading and writing files we will use the open() function. You can can see the parameters by using “***help(open)***” command.

open(file, mode='r')

We will mainly use 3 modes – r for read, w for write, a for append.

**Control Flow (If/Else)**

if *condition* :

indentedStatementBlockForTrueCondition

else:

indentedStatementBlockForFalseCondition