Introduction to Python programming

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let's write our first python

code we're going to write print all in lowercase then add parentheses then add quotes either single quotes or double quotes and inside this code we're going to write hello world

Input: print("hello! ")
Output: hello!

So this is what we call a string a string means a string or sequence of characters in simple words that means textual data so in python and in many other programming languages whenever we're dealing with textual data we should always surround our text with quotes. In python we can use single or double quotes.

Now this print you see here is a function built into python and we can use it to print a message on our application window.

is used to explain code, to make more readable and prevent execution when testing code.

Python Variables

Python variable is created to assign a value to it

x=5
y=Jaazz
print(x)
print(y)

Python allows us to assign values to multiple variables in one line:

x, y, z = "Apple", "Grape", "Pineapple"
print(x)
print(y)
print(x)

Python data types : str, int, float and complex. We can get data type of any object by using type() function.

x="Hello World" Data_type = str (text type)
y=20 Data_type = int (numeric type)
h=30.08 Data_type = float(numeric type)
z= 1j Data_type = complex (numeric type)
print(type(x)) str
print(type(y)) int
print(type(h)) float
print(type(z)) complex
In python the index of the first character in a string is 0. so here we have 0 1 2 3 4 and so on so when we run this program you're going to see one on the terminal because the index of W is 7.

Introduction to Arithmetic operators and Logic operators :

Let's take a= 10, b=5

Operator	Name	Example
+	Addition	a+b = 15
-	Subtraction	a-b = 5
*	Multiplication	x*y = 50
/	Division	x/y = 2.0
%	Modulus	x%y = 0
**	Exponentiation	x**y = 100000
//	Floor Division	x//y = 2

Activity: Try to change values of a & b variables

Introduction to python strings : Python has a set of built in functions for string. The upper() method gives the Uppercase of the input string and lower() gives Lowercase

Input:
s = "Hello world"
print(s.upper())
print(s.lower())

Output:
HELLO WORLD
hello world

Task: Execute the following code and observed the output obtained

Sentence = "Swati ma'am is learning Python course"
print(Sentence[-2])
print(Sentence[0:3])
print(Sentence[:5])
Now, change the string in the variable Sentence and observe the changes

Installing PyCharm and Python Software

Running the program Shortcut keys- Shift+F10
Alt + Enter key - preview warning and apply quick fix if any error in program found.

Task 1: Ask a user weight (in lbs) and convert it into kg and print the output in terminal.

Program:

```
Weight_lbs = input("Enter your weight : ")
Weight_kg = (int(Weight_lbs))*0.45
print(Weight_kg)
```

Task 2: Calculation age of the user according to the input received

Program:

```
Name = input("Enter your birth year")
Current_year = input ("Enter your current year")
Age = int(Current_year) - int(Name)
print(Age)
```

Formatted Strings - Dynamically generated text type data's.

```
first = 'john will'
last = 'smith'
message = first + '[' + last +' is a coder ]'
print(message)
msg=f'[{first} {last}] is a coder'
print(msg)
```

```
---------------------------------------------------------------------------
variable="Swathy maam is learning python"
print(len(variable))
print(variable.upper())
print(variable.lower())
print(variable.replace('Swathy', 'Swati'))
print(variable.find('is'))
print('Learning' in variable)
```

Here print(len(variable)) function is a general purpose built in python programs. We can have limit of characters such as in some websites while logging in to the website, the username is set to limit up to 20 characters(e.g.). Just like the upper method the replace method is not going to modify our original string so it's going to return a new string this is because strings in python and many other programming languages are immutable we cannot change them once we create them whenever we want to change your string we'll end up with a new string object in memory.

```
_____________________________________________________________________________
## Math function
x=-4.9876
print(round(x))
print(abs(x))
```

```
_____________________________________________________________
import  math
input(math.ceil())
```

These are all the math built in functions to perform some complex mathematical operations.