Python Webinar - Guide

Python is an interpreted, high-level, general-purpose programming language. Created by Guido van Rossum and first released in 1991. An interpreter is a computer program that directly executes, i.e. performs, instructions written in a programming or scripting language, without requiring them previously to have been compiled into a machine language program. So unlike Java, Python uses an interpreter. The interpreter is a program that we need to run our python code or scripts. It basically provides an interface between the code and the computer hardware to get the results of the code. No matter in which programming language the code is written, it goes through an interpreter when it comes to python. For example pypy is used to execute the code written in python.

Python Applications

1. Artificial Intelligence
2. Desktop Application
3. Automation
4. Web Development
5. Data Wrangling, Exploration And Visualization

Python IDE

IDE typically provides code editor, compiler/ interpreter and debugger in one GUI (Graphical User Interface). It encapsulates the entire process of code creation, compilation and testing which increases the productivity of developers. We will be using Google Colab as our IDE which is an online free platform of Jupyter notebook by Google

You can go to colab.research.google.com and get started with the first Python 3 notebook

First Code in Python

The first program in any programming language

```
print('Hello World')
```

Python Block Comments A block comment in python is written with the same indentation as the code, it is used to explain the code. A block comment looks something like the one written in the example below.

```
#This is a comment
```

Python Variables

Variables are nothing but reserved memory locations to store values. This means that when you create a variable you reserve some space in memory.

Example:

```
a = 1
print(a)
```

Here, we don't have to declare the datatype of variable. Its automatically declared by the Python Interpreter

Datatype

We have 4 basic datatypes in Python:

1. Int
2. Float
3. Str
4. Boolean

To check the datatype in python we use **type()** function To check the memory we use **id()** function

Addition of 2 numbers:

```
A = 1
B =  2
C = A+B
print( C )
#The above is a valid python code. We use + operator to add.

print(A+B) # Addition
print(A-B) # Subtraction
print(A/B) #Division float
print(A*B) #Multiplication

print(A//B) # Int Division
print(A%B) # Remainder
```

Input() function

To take the value from the user, we use input() function

a = input('What is the topic of Webinar') print('The topic is : ', a)

Addition of 2 numbers using input function

```
a = input('Enter 1st number')
b = input('Enter 2nd number')
c = a+b
print('The sum is', c)
```

Here the output what you get is little different If you give a = 12 and b = 34 you will get output as The sum is 1234 which isn't the correct answer Here, the problem is input function accepts the output in the form of str So we have to do type casting(conversion of a variable from one data type to another data type)

Final program will be:

```
a = int(input('Enter 1st number'))
b = int(input('Enter 2nd number'))
c = a+b
print('The sum is', c)
```

Here you will get correct output

Functions in Python

A function is a set of statements that take inputs, do some specific computation and produces output. Writing your own function

```
def season(a):
    print("This is ",a,"season")
season("Summer")
```

We have parts in Functions:

1. Function Definition
2. Function Call Always define the function first and then call

If else Condition:

The if..else statement evaluates test expression and will execute the body of if only when the test condition is True . If the condition is False , the body of else is executed. Indentation is used to separate the blocks.

```
a = 17
if(a> = 18):
    print("Eligible to Vote")
else:
    print(" Vote after" ,18-a,"years")
```

Output: Vote after 1 years

Calculator using Functions:

```
def sum(a,b):
    c = a+b
    print (c)
def dif(a,b):
    c = a-b
    print (c)
def mul(a,b):
    c = a*b
    print (c)
def div(a,b):
    c = a/b
    print (c)
while True:
    print(" CALCULATOR")
    a = int(input(' Enter 1st :'))
    b = int(input(' Enter 2nd :'))
    print(' Enter the Operation ')
    choice = input( ' A- Addition, S - Subtraction, M- Multiplication and D- Division
')
    if( choice == 'A'):
        sum(a,b)
    elif( choice == 'S'):
        dif(a,b)
    elif( choice == 'M'):
```

```
        mul(a,b)
    elif( choice == 'D'):
        div(a,b)
    elif( choice == 'Q'):
        break
    else:
        print(' Wrong input')
```

Here I have used

- 4 functions
- Print statements for output
- 2 inputs
- if,elif and else statements
- forever loop
- break statement to break the loop