Python Programming

Features

- It is high level programming language, and it is freeware
- It is platform independent. (Any os system)
- It is machine independent. (h/w independent)
- It supports garbage collector, no memory leakage problem is there.
- It supports multithreading, multiprocessing.
- It supports network programming.
- It is easy to use, easy to learn
- Database connectivity is possible to do using python.
- Modules and packages
- The code is readable, so finding errors become very easy, because of indentation is must

To install python use following link

https://www.python.org/downloads/

Where the python is installed? In Linux

$whereis python

$apt-get install python3

$apt-get install idle

$python3 --version

In windows system python gets installed at the following location

C:\Users\anilk\AppData\Local\Programs\Python

In python, variables are dynamically typed-→ data type of a variable will be decided at run time, based on the value you are assigning to the variable.

Basic data types in python, All basic data type variable are immutable

Number--- int, float, complex

String

Boolean-→ True, False

Data structure in python

List, tuple, set, frozenset, dictionary

Structure of python program

- The code in python has to be indented, minimum 4 spaces
- No { , } curly braces are there for if statement, while loop and for loop and for user defined functions, () brackets are not required for the condition

Strings

- Strings can be enclosed in single quote('this is string') or double quotes("this is string")
- If the string contains more than one line, like a paragraph, then enclose it in triple single quote, or triple double quotes

Comments

- To add single line comment we use #
- to add multiline comments we may use (""" """) or (''' ''')

Operators in python

Arithmetic operators

+, -, *, /(float division), //(integer division), %(mod),**

There is no ++ and – operator in python

Ternary operator in python

a if a>b else b

Relational operators

>, <, >=, <=, !=

Logical operators

and, or, not

Bitwise operators

&, | , not, >>, << , ~

Walrus operator

:=

In python to accept data from user the function is input, it always accepts data in string format, hence to convert it into number, we use int() or float()

#to find maximum of 3 numbers

a=int(input("enter number")) #always accepts and store data in the form of strings b=int(input("enetr number2")) c=int(input("enter number 3"))	a=int(input("enter number")) #always accepts and store data in the form of strings b=int(input("enetr number2")) c=int(input("enter number 3"))

if a>b and a>c:
  print("a is the maixmum value",a)
else:
  if b>a and b>c:
  print("b is the maixmum value",b)
  else:
  print("c is the maximum value",c)
	if a>b and a>c:
	  print("a is the maixmum value",a)
	elif b>a and b>c:
	  print("b is the maixmum value",b)
	else:
	  print("c is the maximum value",c)

Various ways of print statement

```
a=12
b=23
c=34
print("A:",a,"B:",b,"C:",c)
print("A:"+str(a)+"B:"+str(b)+"C:"+str(c))
print(f"A: {a} B: {b} C: {c}")
print("A: {2} B: {1} C: {0}".format(a,b,c))
print("A: %d B: %d C: %d" % (a,b,c))
print(a,b,c,sep=":",end=" ")
print("welcome")
print("Hello")
```