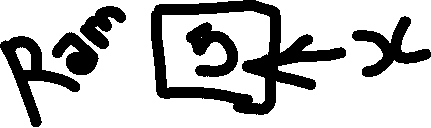
# Python

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python’s elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms.

# Memory Reference of variables



When a data is assigned to variables. A memory is allocated to that data value .And variables point to that value



X=5

# Data types

There are numeric data types and non- numeric data types

Numeric data types

These can be 1,2,3.23,0.0001,-1,-0.2 etc

They are further divided into int and float data types

Int are without decimal whereas float are with decimal values.

Non numeric data types

Strings are non numeric data types .They are basically text .

# Some function related to data type

## type(…)

it returns the data type of variable present inside it.

Eg. x=5

type(x)

<class 'int'>

x=1.02

type(x)

<class 'float'>

x="study"

type(x)

<class 'str'>

x='c'

type(x)

<class 'str'>

## 2.id

It returns unique id for the specified object

id(x)

1553327640240

x=5

id(x)

1553323000176

y=x

id(y)

1553323000176

## 3.len(x)

## (Where x is a string) it returns the length of the string

## 4.x[int ]

If the int is positive then it will return the character placed at that index .if the int is negative then the index -1 will refer to last,-2 to second last and so on

x="0123456789"

x[0]

'0'

x[3]

'3'

x[-1]

'9'

x[-2]

'8'

## x[3:8]-This generates the substring b/w index 3 and 8. The element of index 8 wont be taken

## '34567'

# X[a:b:c]

a stands for initial position b stands for final position and c is the step size

eg.

x[1:8:1]

'1234567'

x[1:8:2]

'1357'

x[3:5:2]

'3'

x[::3]

'0369'

x[9:1:-1]

'98765432'

x[9:1:-2]

'9753'

# Printing statements

x=5

print(x)

5

print("hello world!")

hello world!

print(1,"abc",12+15)

1 abc 27

## Printsep

print('G','F','G', sep**=**'')

#for formatting a date

print('09','12','2016', sep**=**'-')

#another example

print('pratik','geeksforgeeks', sep**=**'@')

GFG

09-12-2016

pratik@geeksforgeeks

## Printend

**print**('prtk','agarwal', sep**=**'', end='@')

**print**('geeksforgeeks')

prtkagarwal@geeksforgeeks

Type casting: any suitable data can be changed from one data type to another

If it is done forcible then it is explicit

If it is done automatically then it is implicit