Python Process

1) Source Code

Process start with the code written in .py file.

2) Lexical Analysis

Python interpreter reads the source code and breaks it down into tokens [lexical components like keywords, operators, identifiers]

3) Parsing

Tokens are passed to parser, which checks the syntax of the code.

4) Abstract Syntax Tree [AST]

Hierarchical structure of the source code, relationship between codes.

5) Byte code compilation

.pyc files

6) Interpreter execution

Python Virtual Machine [PVM]

7) Memory management

8) Runtime

Extensions → .mp3, .mp4, .ppt, .pptx

- .py [source code]
- .pyc [compiled]
- .pyw [GUI]
- .pyz [zip files]

Variables

Block of container

To store a value

Datatype

$x = 5$

$z = 10$

$y = 15$

Datatypes

1) Integer (int) → 5, 0, -5, -1000, 7, 9

2) Float (float) → 5.5, -1.1, 180.997, -11.11

"12.....4.....5"

3) Complex Number

"abc123"

"1234"

4) Strings → "abc", "xyz", 'aaaaaa', "x"
(Str)

5) Boolean [Bool] → True / False

6) List / Tuple / Dictionary / Set

7) NoneType → None

Rules to name a variable

x = 5

y = "Aniruddh"

1) Start with a-z, A-Z, _

2) Can contain a-z, A-Z, _, 0-9

3) Cannot contain special symbol (?, >, <, -

4) Should not be a reserved keyword [if, else, while, for, print, ... 32-35]

Operators

2 or more variable / values

5 % 10

%

208 % 10 = 0

$\frac{20}{10} = 2$