

latest version 3.4.1
now 3.6.0
stable version 2.7.8
2.7.13

python - high level language.

It is a scripting language, it is object oriented,

portable

powerful

easy to learn and use.

mixes good features from Java, perl and scheme.

Uses of python

1. System utilities -

2. GUIs (Tkinter, gtk, Qt, windows)

3. Internet Scripting

4. embedded scripting

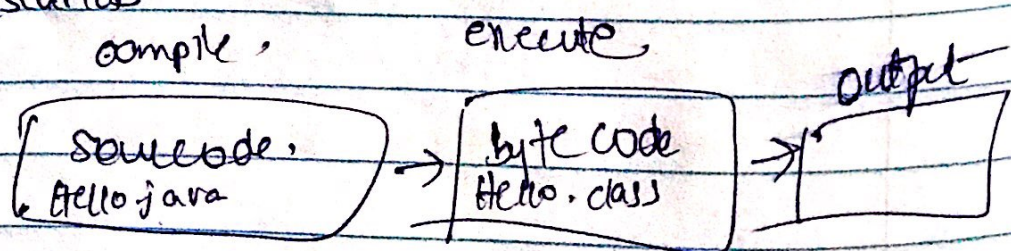
5. Database programming

6. Artificial Intelligence

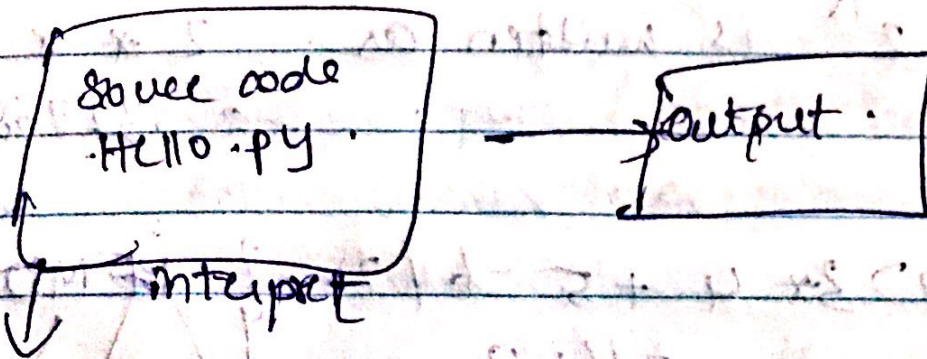
7. Image processing -

Compiling and Interpreting: -

Many languages require you to compile (translate) program into a form that the machine understands.



python is tested instead directly interpreted into machine instructions.



If any error occurs we will be able to see only at run time. → no feature to compile

In python,
Command line enter
print "Hello world"
or
open python IDE
opens Shell Scripting -

Annotations on the left side of the code block:
- curly braces and
- line 3
- ind.

For Mathematical expression

just enter num 4+5 and press enter.

Same for Subtraction

division

multiplication

$$23/7 = 3.28 \dots$$

If we write $23//7 = 3$

we can even divide decimals

$$\text{ans} = 57.123432 / 3.222 \\ = 17.762367$$

2^{15} is written as $2 * * 15$
 $= 32768$

① $>>> 3 * 4 + 5 - 6 / 2$
 $= 14.0$

PEMDAS

- parenthesis
- exponentiation
- multiplication
- division
- addition
- subtraction

② $(3 + 4) * 5 / (6 - 2) = 2$
 $= 6.75$

$$7 * 5 / 4 = 2$$

$$35 / 4 = 2$$

$$8.75 = 2$$

$$= 6.75$$

$$\frac{35}{4}$$

$$8.75$$

$$8.75 = 3$$

$$8$$

Variables in python

variable is a container of some value.

can be integer, string, float.

declaring variable in python. \rightarrow assigning a value to a variable

$>>> \text{myVariable} = 30$

myVariable + 34
= 84.

input takes value as a string.
>>> value = input("Enter the value :")
enter the value : 50
>>> value

'50' → This is a string (string)

So now if we try to give value + 20
it doesn't return 70 instead it throws
error because when we use input function
then it takes value as a string and hence
it cannot perform any arithmetic
operation. value + 50 → returns error.

Converting String to Integer :-

We perform casting here just add int
in front of input
value, int(input("Enter the value :"))
enter the value : 50

>>> value

50

Here value + 50 = 100

Built-in Modules and Functions.

>>> 2**3 = 8

say function is a piece of code which executes some logic.

>>> pow(2;3)

built in function for power

How to know built in functions in python.
Command is

dir(__builtin__)

>>> abs(18666)

>>> len("Hello")

5

>>> help(max)

Help on built-in function max in module builtins:

max(...)

max(a, b, c, ..., [key=func]) -> value.

→ with a single iterable argument, return its largest item

→ with two or more arguments, return the largest argument.

```
>>> import math
```

```
>>> math.sqrt
```

<builtin function sqrt>

```
>>> math.sqrt(9)
```

```
3.0
```

```
>>> squareRoot = math.sqrt
```

```
>>> squareRoot(9)
```

```
3.0
```

SAVE and RUN python files .py :-

```
File → New → x = int(input("enter 1st number"))  
y = int(input("enter 2nd number"))  
z = int(input("enter 3rd number"))  
print("The mean of three value is")  
print(mean(x, y, z))
```

~~File~~ Save as → NewFile.py

Next, Run → Run Module

Enter 1
2
3
and
10
22
105