

What is program?

Program is collection of instructions and data

Programming elements are two

1. Data
2. Instructions

Every python program is called module or file.

This program is saved with extension .py

Structure of writing python program

Python is a multi paradigm programming language.

In python we can write programs using different programming approaches or paradigms.

1. Procedural Oriented Programming
2. Object Oriented Programming
3. Unstructured Programming

In procedural oriented programming instructions are organized inside functions.

In Object oriented programming instructions are organized inside classes.

In Unstructured programming instructions are organized without using functions or classes, these are organized in sequential order.

Document Section or Comments in Python

Documentation is information about program

Documentation is not instructions.

This documentation is provided using comments

(pound) sign is using defining documentation or comments

These comments are not executed by python runtime.

There should not be any space at the beginning of the statement.

Giving space at the beginning of the statement is indent.

The default indent value is 4.

Every program required 3 things

1. Input
2. Process
3. Output

Input: Data or information given to program is called input. Input is given by using various sources (keyboard, File, Scanner, Database,..). In input data is moved inside program.

Process: Performing operations on input data

Output: Processed information is called output/Result. This output is display on monitor/console, printer, file or database or any other program. In output is data is moved outside the program.

Input and Output statements

1. `print()`
2. `input()`

`print()`, `input()` are called predefined functions. These functions are provided by python library (built-ins).

`print()`

It is a built function of python.

This function is used to perform standard output operation.

This function is used to print data or information on console/monitor.

Syntax:

`print(values,sep,end,file,flush)`

1. **values**
2. **sep**
3. **end**
4. **file**
5. **flush**

Example:

Example of print function

```
print(10)
print(100,200)
print("Python")
print(10,1.5,"Python",1+2j,True)
```

```
print(10,20,30,40,50,60,sep=',')
print(1,2,3,4,5,sep=';')
print(10,20,30,40,50,sep="*")
print(10,20,30,40,50,sep="NIT")
print(10,sep=":")
#print(sep=" ",10,20,30,40)
print()
print()
print("Hello")
```

Output

```
10
100 200
Python
10 1.5 Python (1+2j) True
10,20,30,40,50,60
1;2;3;4;5
10*20*30*40*50
10NIT20NIT30NIT40NIT50
10
```

Hello

Example:

```
a=10
b="Hello"
c="Python"
print(a,b,c)
```

Output

```
10 Hello Python
```

Example:

```
rollno=1
name="naresh"
course="python"
fee=5000.0
```

```
print("RollNumber ",rollno,sep=":")
```

```
print("StudentName ",name,sep=":")
print("Student Course",course,sep=":")
print("Student Fee",fee,sep=":")
```

Output

```
RollNumber :1
StudentName :naresh
Student Course:python
Student Fee:5000.0
```

Example:

```
print(10)
print(20)
print(30)
print(40)
print(50,60,70,end='*')
print(80,90,100,end='$')
print(1,2,3)
```

Output

```
10
20
30
40
50 60 70*80 90 100$1 2 3
```

Default separator used by print is space
Default end value used by print \n (new line)

print(10,20)

"10 20\n"

print(10,20,30,40,sep=",")

"10,20,30,40\n"

print(100)

"100\n"

print()

"\n"

print(1,2,3,sep=":",end=':')

"1,2,3:"

Example:

```
a=10
b=20
c=30
d=40
print(a)
print(b)
print(c)
print(d)

print(a,b,c,d,sep="\n")
print(a,b,c,d,sep="\t")
```

Output

```
10
20
30
40
10
20
30
40
10    20    30    40
```

Print function, print/output/write all these value inside one file (stdout). Stdout is name of the file object. This file object represents monitor or console.