What is Python?
Python is a multi-paradigm Programming Language invented by Mr.GUIDO VAN ROSSUM, Named based on Monty Python's Flying Circus. It was broadcasted in BBC from 1969 to 1974.
OR
WriteLess, Create More, Run Every Where..!!

PYTHON VERSIONS:
Python 1.0 ==> 1994
Python 2.0 ==> 2000
Python 3.0 ==> Py3K 2008

PYTHON Features:
1) Easy to Learn and Use
2) Expressive Language
3) Interpreted Language
4) Cross-platform Language
5) Free and Open Source (GPL)
6) Object-Oriented Language
7) Extensible
8) Large Standard Library
9) GUI Programming Support
10) Integrated

PYTHON IN REALTIME INDUSTRY:
1 Simple & Easy to Learn
2 Portable & Extensible
3 Web Development
4 ML, DL, AI, NLP, NN
5 Computer Graphics, Games, Movie Creation and Music software
6. WebScraping
7 Testing Frameworks
8 Bigdata
9 Data Science
10. Popularity & High Salary..!!

Technology & Its Purpose:
1. C lang. => Embedded Systems
2. C++ Lang. => Graphics & Gaming Implementation
3. JAVA Lang. => Web & Gaming Development
4. .NET => Console & Windows programming
5. PHP => Web Programming
6. JavaScript => Client Side Validations
7. PYTHON => Complex data Processing & General Purpose Language.

Why Python is General Language?
PYTHON is used to develop the following software Apps:
1) WebApps=>Django, Pyramid, Flask, CherryPY..!
2) DesktopGUIApps=>TKinter,wxWidgets,Kivy,pyqt
3) SoftwareDevelopment=>BuildControl & Testing
4) Scientific &Numeric=>SciPy,Pandas, NumPy!
5) Business Apps=>Tryton, Oodo
6) Console Based Apps =>IPython
7) Audio/Video Apps =>TimPlayer, cplay
8) 3D CAD Apps =>Fandango
9) Enterprise Apps =>OpenErp,Tryton,Picalo

10) Apps for Images =>VPython, Gogh, imgSeek

Python Installation Process in Windows
1. Goto https://www.python.org/downloads/
2. Download the latest version for Windows(3.9.0)
3. Double click on that .exe file
4. Select Install for all users, click on NEXT Button
5. Finally click on Finish button.

After successful Installation You will find:IDLE
(Integrated Development & Learning Environment)

PYTHON Run Modes:
In PYTHON Programming run modes are classified into two categories:
1 Interactive Run mode
2 Script Run mode

1 Interactive Run Mode
Python offers a comfortable CLI with the Python Shell, which is also known as the"Python Interactive Shell".

>>> Triple Chevron the Prompt of the PYTHON..!!

Python IDLE : Shell Colors

Syntax	ColorName
Keywords	Orange, Purple
Stdin	Black
StdOut	Blue
Strings	Green
Comments/Errors	Red

Define Statement:
It is type of logical instruction.

Define Command:
It is type of exe file or pre-compiled program

Define Shell:
Collection of commands is called shell

Define DOS Shell (.bat) batch files
Collection of DOS commands is called DOS shell

Define Windows Shell(.wsh)
Collection of Windows commands.

Define Unix Shell? (.sh) Standard Shell
Collection of Unix commands is called Unix shell.

What is a program?
Collection of logical instructions is called program

What is software?
Collection of specilized programs is called software

Types of Softwares
1. Sytem Softwares

2. Application Softwares

1. Sytem Softwares:
It is used control all system components and devices. It is classified into the following two types.
1. Operating System
2. System Utilities

1. Operating System:
It is an interface between user and system. It is classified into the following three types.
1. SUST 2. SUMT 3. MUMT

>>> copyright
It displays copy-right information of PYTHON

>>> credits
It displays credits and web info of PYTHON

>>> license()
It display license info and history of PYTHON, if you want to continue to read hit the key Return (Enter)
if you want to exit 'q' and hit the Return.

print():
It is a function, prints the given object to the standard output device. PYTHON 3.X version onwards..!

Syntax:
print(value,sep=' ',end=' ',file=sys.stdout, flush=False)

print() Parameters
object/Value(s) - object to be printed.
sep-objects are separated with a notation (Symbol).
end - end is printed at last
file - must be an object with write method.
flush - If True, the stream is forcibly flushed. Default value is False

Example:
```
print("Hello Welcom to PYTHON")
print('Hello Welcom to PYTHON')
print("Hello Welcom to PYTHON")
print('''Hello Welcom to PYTHON''')
print("Hello Welcom to PYTHON")
print("""Hello Welcom to PYTHON""")
```

Example:
```
print("Hello","Welcome",sep="**")
print("Hello","Welcome",sep="__")
```

Example:
```
print("Hello Welcome");print("To PYTHON")
print("Hello Welcome",end="\t");print("To PYTHON")
```

Reading Keyboard Input
Python provides two built-in functions to read a line of text from

standard input.
1. raw_input() (2.x)
2. input() (from 3.x)

raw_Input(): It is used to read data from the user or from the keyboard:

Syntax
raw_input("Message")

Example:
```
>>> x=raw_input("Enter Any Number: ")
Traceback (most recent call last):
    x=raw_input("Enter Any Number: ")
NameError: name 'raw_input' is not defined
```

Input(): It is used to read data from the user or from the keyboard:

Syntax:
input("Message")

Example:
```
>>> x=input("Enter Any Number: ")
Enter Any Number: 1
>>> x
'1'
>>> y=input("Enter Any Number: ")
Enter Any Number: 2
>>> y
'2'
>>> x+y
'12'
>>>
```

NOTE:
In PYTHON programming input() function takes every value in string format..!!

Example:
```
MyNum = input("Enter Any Number:  ")
print("Your Number is: ",MyNum)
```

Example:
```
name = input("Enter Your Name:  ")
print("Nice to meet you " + name + "!")
```

PYTHON help() function:
It displays the documentation string. It is used to see the help related to modules, keywords, attributes, etc.

Example:
```
>>> help(print)
>>> help(input)
>>> help()
help> print
help> input
help> quit
```

>>>

Configure IDLE:
Open a configuration dialog and change preferences for the following: fonts, indentation, keybindings, text color themes, startup windows and size, additional help sources, and extensions.

Components in Configure Dialog:
Configure dialog has the following list of components:
1. Fonts/Tabs ==> To change the fonts and size
2. Hightlighting
3. Keys ==> To Define customized keys
4. General
5. Extensions

How to Quit the Python Shell:
It's easy to end the interactive session: You can either use quit(), exit()

Who Uses Python?

1. YouTube	2. Google	3. DropBox
4. RospBerryPI	5. BitTorrent	6. NASA
7. NSA	8. NETFLIX	9. Yahoo Maps
10. IBM	11. HP	12. Philips
13. Nokia	14. Instagram	15. Twitter
16. Mozilla	17. Amazon	18. Quora

Define PSF? (Python Software Foundation)
It is an organization devoted to advancing open source technology related to the Python.
1 PEPs ==>Python Enhancement Proposals
2 PyPI ==>Python Package Index

Python Implementation Alternatives/Flavors
1. CPython (Python for C)
2. Jython(Python for Java)
3. IronPython(Python for .NET)
4. PyPy(Python for speed)
5. MicroPYTHON (for Micro Processors)
6. PyDoop, PySpark (for Big Data Frameworks)
7. Brython (Replace Javascript with Python)
8. RubyPython (Python and Ruby)
9. Winpython (Python distribution for Windows)
10. PyObjC(Python and Objective-C)
11. AnacondaPython(Handling Huge Volume of Data Processing)
12. VPython is the Python programming language plus a 3D graphics module called Visual & Animations
13 IPython is a command shell for interactive computing in multiple programming languages.
14. RPython is a framework for implementing interpreters and virtual machines for programming languages, especially dynamic languages.