Python Overview and Installation

Tushar B. Kute,
http://tusharkute.com

What is Python?

- Python is a high-level, interpreted, interactive and object-oriented scripting language.

- Python is designed to be highly readable.

- It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

What is Python?

- **Python is Interpreted**: Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.

- **Python is Interactive**: You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.

- **Python is Object-Oriented**: Python supports Object-Oriented style or technique of programming that encapsulates code within objects.

- **Python is a Beginner's Language**: Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

History

- Python was developed by Guido van Rossum in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands.

- Python is derived from many other languages, including ABC, Modula-3, C, C++, Algol-68, SmallTalk, Unix shell, and other scripting languages.

- Python is copyrighted. Like Perl, Python source code is now available under the GNU General Public License (GPL).

- Python is now maintained by a core development team at the institute, although Guido van Rossum still holds a vital role in directing its progress.

Python features

- **Easy-to-learn**: Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly.

- **Easy-to-read**: Python code is more clearly defined and visible to the eyes.

- **Easy-to-maintain:** Python's source code is fairly easy-to-maintain.

- **A broad standard library:** Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh.

- **Interactive Mode:** Python has support for an interactive mode which allows interactive testing and debugging of snippets of code.

Python features

- **Portable**: Python can run on a wide variety of hardware platforms and has the same interface on all platforms.
- **Extendable**: You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- **Databases**: Python provides interfaces to all major commercial databases.
- **GUI Programming:** Python supports GUI applications that can be created and ported to many system calls, libraries, and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.
- **Scalable**: Python provides a better structure and support for large programs than shell scripting.

Python features +

- IT supports functional and structured programming methods as well as OOP.
- It can be used as a scripting language or can be compiled to byte-code for building large applications.
- It provides very high-level dynamic data types and supports dynamic type checking.
- It supports automatic garbage collection.
- It can be easily integrated with C, C++, COM, ActiveX, CORBA, and Java.

Supported OS of Python

- Unix (Solaris, Linux, FreeBSD, AIX, HP/UX, SunOS, IRIX, etc.)
- Win 9x/NT/2000
- Macintosh (Intel, PPC, 68K)
- OS/2
- DOS (multiple versions)
- PalmOS
- Nokia mobile phones
- Windows CE
- Acorn/RISC OS
- BeOS
- Amiga
- VMS/OpenVMS
- QNX
- VxWorks
- Psion
- Python has also been ported to the Java and .NET virtual machines

Getting Python

- The most up-to-date and current source code, binaries, documentation, news, etc., is available on the official website of Python: http://www.python.org/

- You can download Python documentation from www.python.org/doc/ . The documentation is available in HTML, PDF, and PostScript formats.

- Python is by default available on all Linux flavors.

Installation on Linux

- Open a Web browser and go to http://www.python.org/download/

- Follow the link to download zipped source code available for Unix/Linux.

- Download and extract files.

- Editing the Modules/Setup file if you want to customize some options.

- run `./configure` script

  `make`

  `make install`

- This installs Python at standard location `/usr/local/bin` and

- /usr/local/lib/pythonXX where XX is the version of Python.

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Installation on Windows

- Open a Web browser and go to http://www.python.org/download/

- Follow the link for the Windows installer python-XYZ.msi file where XYZ is the version you need to install.

- To use this installer python-XYZ.msi, the Windows system must support Microsoft Installer 2.0. Save the installer file to your local machine and then run it to find out if your machine supports MSI.

- Run the downloaded file. This brings up the Python install wizard, which is really easy to use. Just accept the default settings, wait until the install is finished, and you are done.

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Running python

- Interactive Interpreter
  - You can start Python from Unix/Linux system that provides you a command-line interpreter or shell window. Enter python the command line.

    ```
    $ python
    ```

- Script from the Command-line
  - A Python script can be executed at command line by invoking the interpreter on your application, as in the following:

    ```
    $python script.py
    ```

- Integrated Development Environment
  - You can run Python from a Graphical User Interface (GUI) environment as well, if you have a GUI application on your system that supports Python. IDLE is the very first Unix IDE for Python.

Thank you

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Blogs
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tushar@tusharkute.com