Python

About this Course

- Understand python fundamentals

- Data types and structures in python

- Programming paradigm in python

- To enable all kinds of simple and complex general-purpose python program

- This course will open window for all kinds of specialization in computer application development and data computation

Founder

Guido Van Rossum

What is Python?

- High level programming language

- Interpreted language

- Open Source Software

Python– Features?

- Dynamic Typing : No declaration required. Data type is determined at run-time

- Multiple programming paradigm (structured programming, object-oriented programming)

- Multiple operating platform support

- Robust standard library

- Open Source frameworks and library

Python Applications

- **Web Development**: Django, Pyramid, Bottle, Tornado, Flask, web2py
- **GUI Development**: tkInter, PyGObject, PyQt, PySide, Kivy, wxPython
- **Scientific and Numeric**: SciPy, Pandas, IPython
- **Software Development**: Buildbot, Trac, Roundup
- **System Administration**: Ansible, Salt, OpenStack

Python versions

- Python2x and Python3x are two different versions of Python

- Python 2.0.1 was released on June of 2001

- Python 3.0.0 was released on December of 2008

- Where Python 2 accepts both notations, the old and the new syntax, Python 3 chokes when raising exception

- Anyways Python 2 is an older version with more reference and open-source projects

Python Installation

- https://www.python.org/
- Downloads

IDE For Python

An **integrated development environment** (**IDE**) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger

Python IDE Works in Two Modes:

<u>Interactive Mode</u>:
- This mode takes command as in terminal.
- In this mode it prompts for the next command with the *primary prompt*, usually three greater-than signs (>>>);
- for continuation lines it prompts with the *secondary prompt*, by default three dots (...).
- The interpreter prints a welcome message stating its version number and a copyright notice before printing the first prompt
- This is also called read–eval–print loop (**REPL**)

<u>Scripting Mode</u>:
- This mode works like normal scripting language.
- In python's original IDE the code has to saved to run

Script vs Module

- A script is generally a directly executable piece of code, run by itself

- A module is generally a library, imported by other pieces of code

- Any Python module may be executed as a script. The only significant difference is that when imported as a module the filename is used as the basis for the module name whereas if you execute it as a script the module is named __main__