Module 2 :- Introduction to Python

Python Introduction

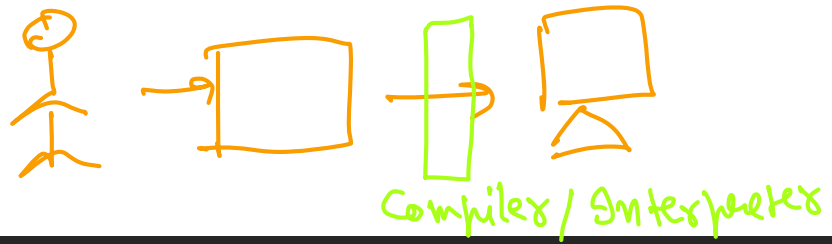
Today's Agenda

An Introduction to Python

- Necessity Of Programming
- What Is Python ?
- Why And Who Created It ?
- **What Python Can Do ?**
- **Why Should I Learn Python**
- **Important Features**

Why Do We Need Programming ?

- To communicate with digital machines and make them work accordingly
- Today in the programming world , we have more than 800 languages available.
- And every language is designed to fulfill a particular kind of requirement



Brief History Of Programing Language

- **C language** was primarily designed to develop "System Software" like Operating Systems, Device Drivers etc.
- To remove security problems with "C" language , C++ language was designed.
- It is an Object Oriented Language which provides data security and can be used to solve real world problems.
- Many popular softwares like Adobe Acrobat , Winamp Media Player, Internet Explorer, Mozilla Firefox etc. were designed in C++
- Courtesy: http://www.stroustrup.com/applications.html

What is Python ?

- Python is a **general purpose** and **powerful** programming language.
- It is free and open-source.
- Python is considered as one of the **most versatile programming language** as it can be used to develop almost any kind of application including **desktop application**, **web applications**, **CAD** ,**Image processing** and many more.

Who created Python ?

- Developed by **Guido van Rossum** , a Dutch scientist
- Created at **Center For Mathematics and Research** , Netherland
- It is inspired by another programming language called **ABC**

Why was Python created ?

- **Guido** started Python development as a hobby in 1989

- But since then it has grown to become one of the most polished languages of the computing world.

How Python got it’s name?

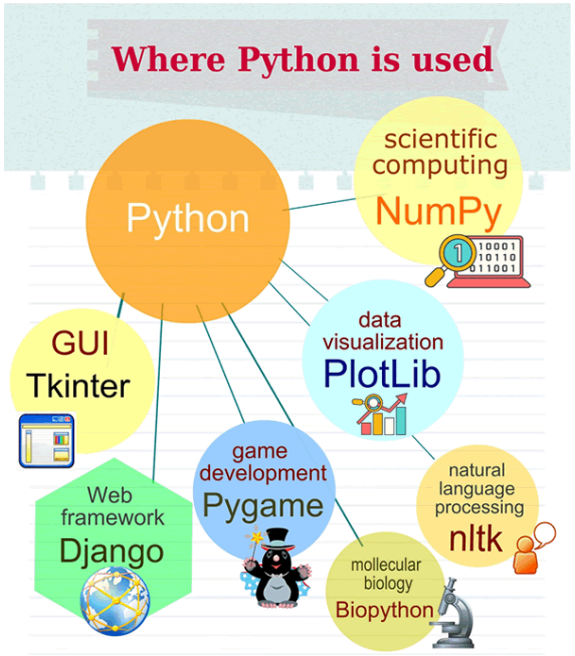
- The name Python is inspired from Guido’s favorite **Comedy TV show** called “**Monty Python’s Flying Circus**”
- Guido wanted a name that was short, unique, and slightly mysterious, so he decided to call the language Python.

Who manages Python today ?

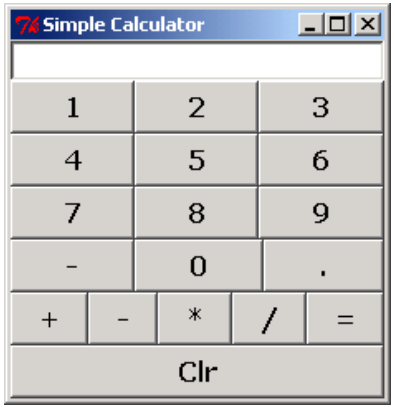
- From version 2.1 onwards , python is managed by **Python Software Foundation** situated in **Delaware** , **USA**
- It is **a non-profit organization** devoted to the growth and enhancement of Python language
- Their website is **http://www.python.org**

What Python can do ?

- GUI Application
- Web Application
- Data Analysis
- Machine Learning
- Raspberry Pi
- Game Development

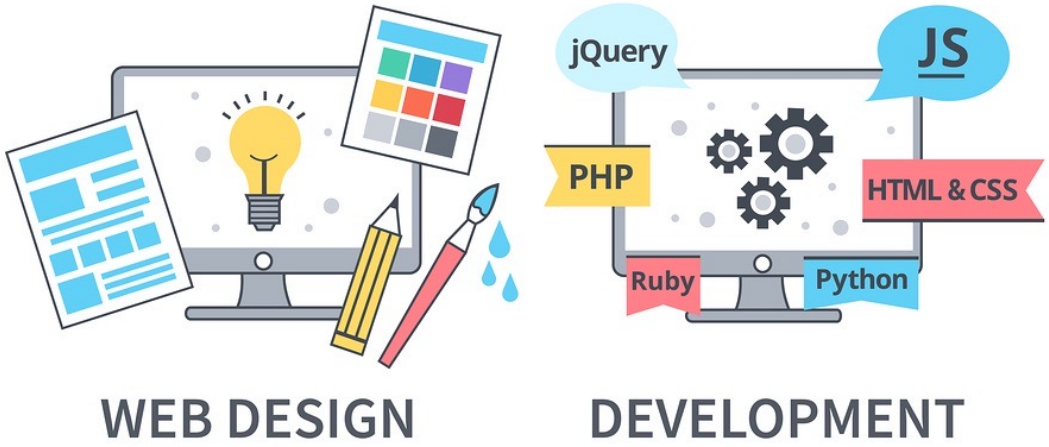


GUI In Python



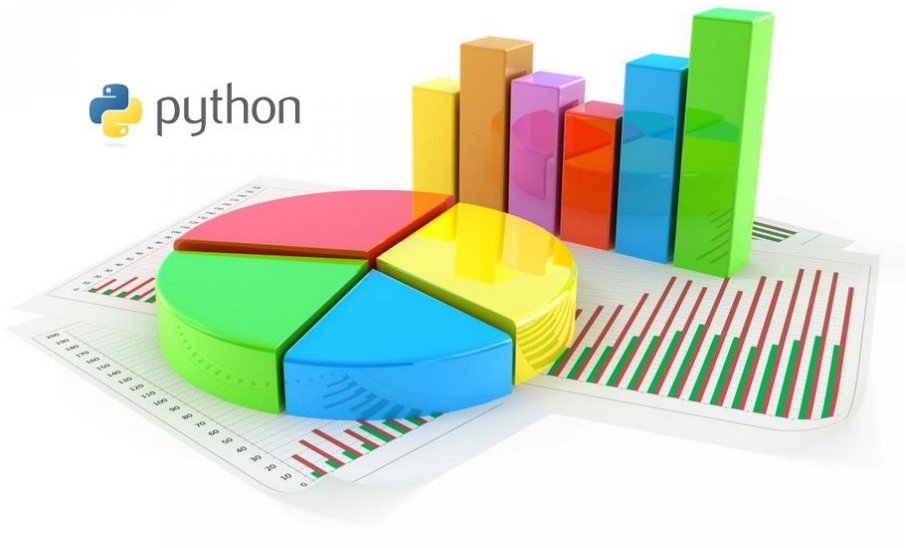
- Python is used for GUI apps all the time.
- It has famous libraries like PyQT , Tkinter to build desktop apps.

Web Application in Python



- We can use Python to create web applications on many levels of complexity
- There are many excellent Python frameworks like **Django**, **FastAPI** and **Flask** for this purpose

Data Analysis In Python



- **Data Analysis is about making predictions with data**
- Python is the leading language of choice for many data scientists
- It has grown in popularity due to it's excellent libraries like **NumPy** , **Pandas** etc.

Machine Learning In Python

Machine learning is a field of AI (**Artificial Intelligence**) by using which **software applications** can learn to increase their accuracy for the expecting outcomes.

It is heavily used in **Face recognition** , **music recommendation** , **medical data** etc.

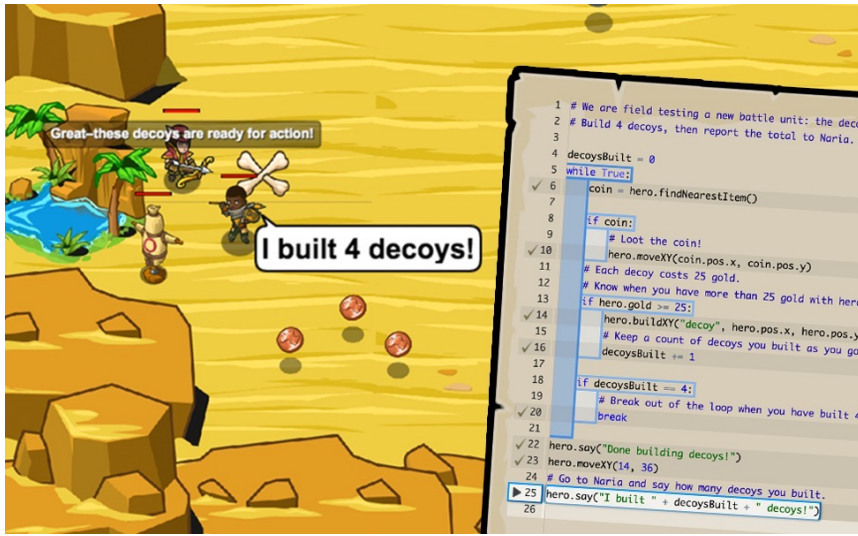
Python has many wonderful libraries to implement ML algos like **SciKit-Learn** , **Tensorflow** etc.

Game Development In Python

We can write whole games in **Python** using **PyGame**.

Popular games developed in Python are:

- **Bridge Commander**
- **Civilization IV**
- **Battlefield 2**
- **Eve Online**
- **Freedom Force**



Why should I learn Python ?

Most popular programming

Opens lots of doors

Big corporates prefer Python

Means , **PYTHON IS THE FUTURE**

TIOBE Index 2022

Programming Language	Ratings	Change
Python	17.18%	+5.41%
C	15.08%	+4.35%
Java	11.98%	+1.26%
C++	10.75%	+2.46%
C#	4.25%	-1.81%
Visual Basic	4.11%	-1.61%
JavaScript	2.74%	+0.08%
Assembly language	2.18%	-0.34%
SQL	1.82%	-0.30%
PHP	1.69%	-0.12%

Who all uses Python today ?