

PYTHON

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INTRO

Python is termed to be one of the easiest language in case of syntax of programming. This language can be used in almost any field of computer science which includes web development, software making ,GUI making, IOT programming and most importantly Data Analysis.

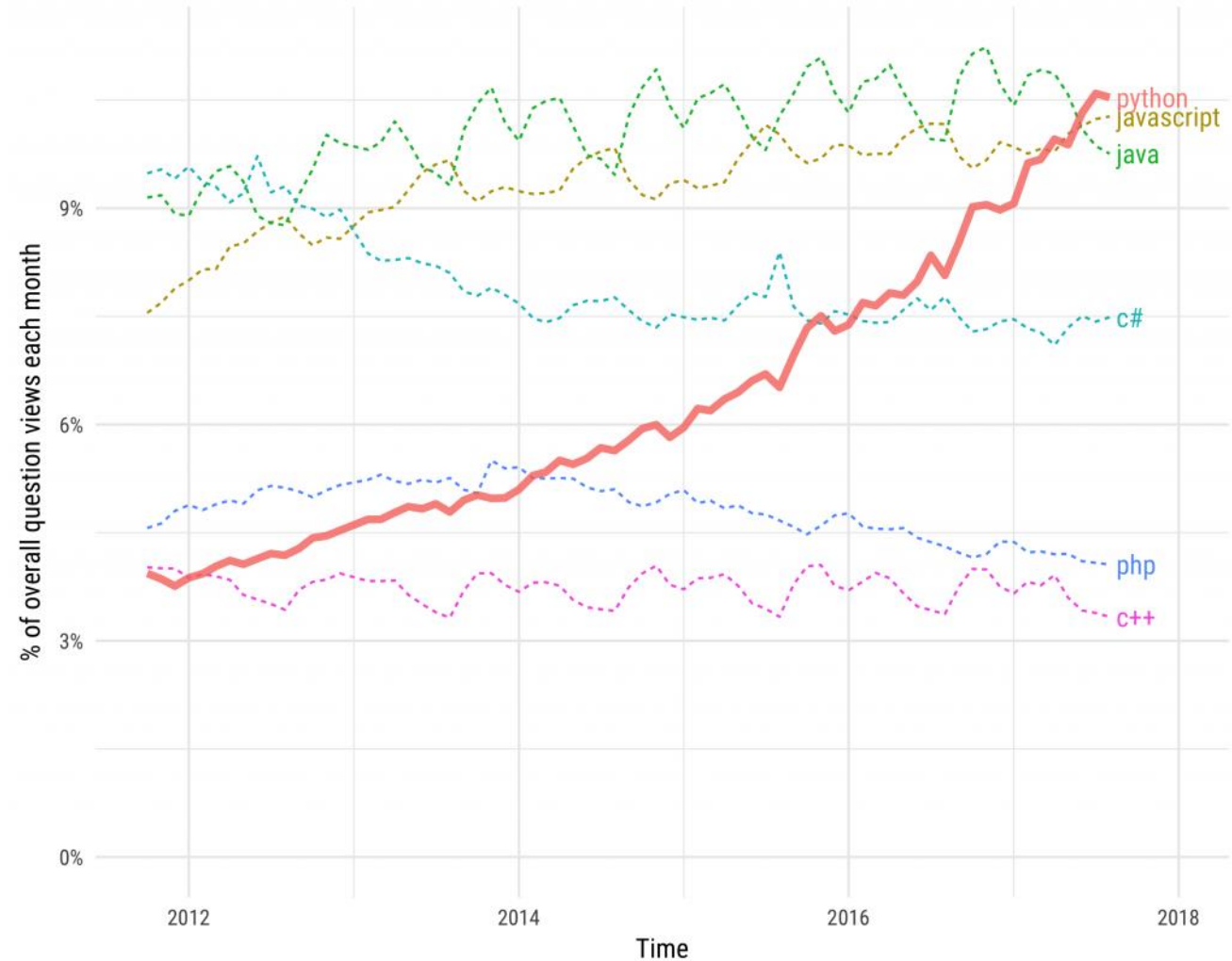


Why Python?

- ▶ python according to stack overflow is one of the majorly used programming language and is also one of the fastest growing language (with JavaScript).
- ▶ As shown in graph it is growing as an enormous pace as of popularity and usage
- ▶ Almost everyday some new library is rolled out for python users

Growth of major programming languages

Based on Stack Overflow question views in World Bank high-income countries



Major Uses

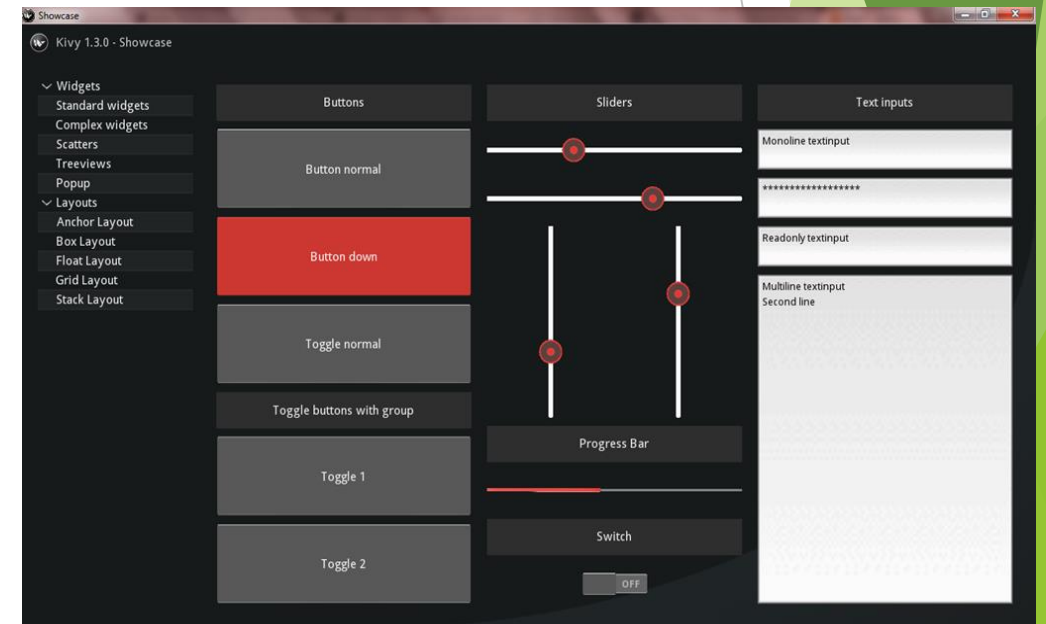
You can virtually make anything with python as stated below:

- ▶ Want to do android development we have **KIVY** and **BUILDZER**.
- ▶ Want to do web development we have **DJANGO**, **FLASK** and **PYMAID**.
- ▶ Want to do package indexing we have **BEAUTIFULSOAP** and **REQUESTS**.
- ▶ Want to do scientific calculation we have **SCIPY**, **NUMPY**, **MATPLOTLIB** etc.
- ▶ Want to make GUI's we have **PYQT**, **TKINTER** and **KIVY**.
- ▶ And most importantly for AI and Machine learning with **TENSORFLOW**, **KERAS** etc.
- ▶ And the list goes on...

ANDROID DEVELOPMENT



- ▶ It is something which do not require any introduction mainly in this stage of the human history.
- ▶ But what it takes to become a android developer is not something fully new language or method.
- ▶ Actually it turns out that knowing python can do that job for us. **KIVY** and **PYGAME** are some frameworks those frameworks that we require to do so.



Web Development

- ▶ Python can be used to make the backend of almost any website or web app.
- ▶ **Django** is one of the most famous framework of python is used widely even tech giants like Instagram are also using this tech only.
- ▶ **Flask** is easy to get started with as a beginner because there is little boilerplate(initially required code) for getting a simple app up and running.



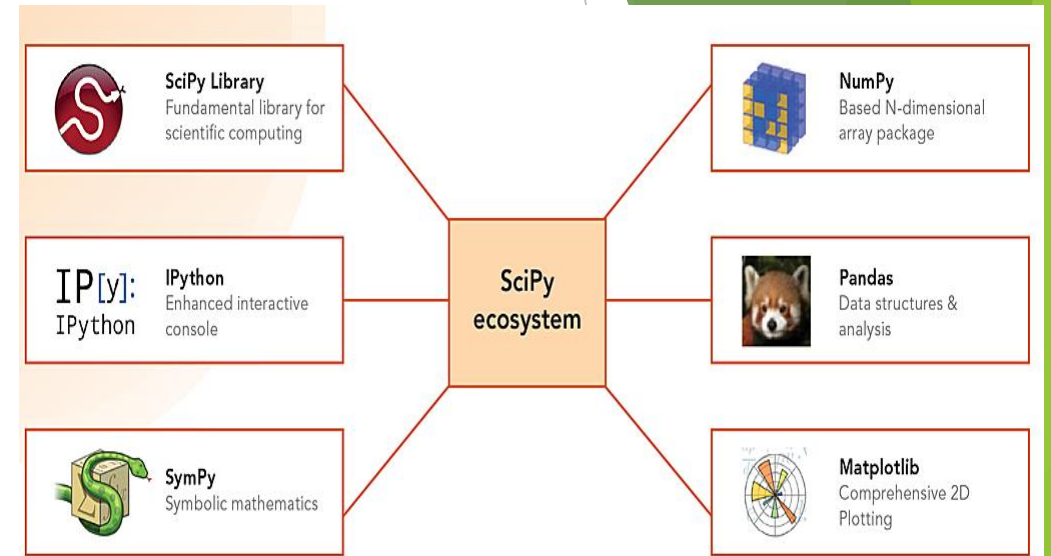
Web Scrapping

- ▶ Web scrapping is basically taking important info from web page having a lot of info like links or some other tags.
- ▶ **Beautiful Soap** is a Python library for pulling data out of HTML and XML files. It works with your favorite parser to provide idiomatic ways of navigating, searching, and modifying the parse tree. It commonly saves programmers hours or days of work.
- ▶ **Requests** allows to directly scrap data by giving those tags or attributes.



Scientific Calculations

- ▶ Any kind of advanced calculations required in physics or any science field can be easily done with python.
- ▶ **Matplotlib** is a library to visualize the data with graphs and much more.
- ▶ **NumPy** is basically used for data management and sorting in a manner in which it can be used.
- ▶ The **SciPy ecosystem**, a collection of open source software for scientific computing and machine learning in Python.



Numpy & SciPy Essential Training

GUI Making

- ▶ **GUI(Graphical User Interface)** is made to take input from user through a graphical method instead of old CLI(Command Line Interface).
- ▶ **TKINTER** is a python library used for making [TK Interfaces] hence the name tkinter.
- ▶ **KIVY** can also be used as it is cross platform to even mobiles.
- ▶ **PyQT** is used to make QT interfaces in python.



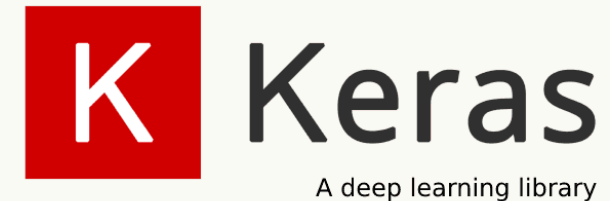
Games

- ▶ Yes, python can be used to make games, not very large but intermediate level games.
- ▶ **Pygame** is the library used for making games in python.
- ▶ **Pygame** is a Python wrapper module for the SDL multimedia library.

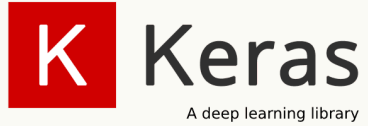


ML And AI

- ▶ **ML(Machine Learning) and AI(Artificial Intelligence)** is one the of most flourishing branch of this time as of now.
- ▶ The major work is either done on **python** or **R**.
- ▶ Python has libraries of almost all major languages in **ML** hence it is now been used by almost all data scientists.
- ▶ **TENSORFLOW, KERAS, PYTORCH** and many more libraries are used in this branch of computer science.



Deep Learning with PyTorch



- ▶ As we saw in all these slides that python can be used to make virtually anything and is also getting a good developer base.
- ▶ All these are the are the indications that this language may rule the programming field and may change the way we think of it.
- ▶ This Is The Best Time To Learn Stuff.
- ▶ FUTURE IS OURS.

