**EVER THOUGHT, WHY PYTHON HAS BEEN THE HOTTEST VOGUE AMONG TECH AFICIONADO?**

According to statistics and StackOverflow trends, Python is the fastest-growing and highly ranked programming language in the past few years. Python showed incredible growth especially in countries with high capital and most of the developers prefer Python over any other programming language. One of the main reasons for python's popularity is the leverages that python provides through its libraries and frameworks. As python has a huge community, it has excellent open-source libraries. According to a GitHub report, there are 3,61,832 developers and contributors supporting almost more than 2,50,000 packages of python.

The various libraries of python play a significant role in various technological fields of Machine learning, Data Science, Data Visualization, etc. There are more than 1,37,000 python libraries in use. Before moving to various libraries, let's take a glimpse of What is Libraries? Why do we need Libraries? So basically library is a collection of pre-defined functions, modules. These libraries when imported eliminates the necessity of writing the code from scratch. Hence, the pre-defined code can be used iteratively by just importing it.

A particular library can be installed by running the following command: Eg.

**Pip install numpy**

So when we want to use the functions or methods of the particular library, we run the following command: Eg.

**import numpy as np**

Now as we know how to install and import the various libraries, we can play with the functions of the libraries to solve real-world problems.

Let's have a look at multiple libraries used in various technological aspects, we will name those libraries based on their applications.

1. **Mathematical Computation.**
2. Math:

It consists of various methods such as exponent, sum, mod, etc.

2.NUMPY:

It is mainly used for calculations that include array representation, matrices, etc

3.SCIPY:

It is used for Linear Algebra, Fourier Transforms, Integration, Statistics.

1. **Data Science and Machine Learning:**

Data Science and ML requires complex machine learning algorithms. So to ease these algorithms, various libraries and packages of python play an essential role. Some of the libraries are names as follows:

1. PANDAS

Pandas is the heart of Data Science.

Pandas is used for data visualization and manipulation, it also makes data analysis easy. DataFrames can be easily created using Pandas inbuilt function.

1. STATSMODELS:

It is used to build various statistical models and to evaluate various predicted models.

1. MATPLOTLIB:

To build various graphs, Histogram, designing charts, pie-chart, scatter plots, etc matplotlib is significant.

1. SEABORN:

Seaborn library is based on matplotlib library. Plays an important role in data visualization, graphical representation of linear regression models, and many more.

1. SCIKIT-LEARN:

It is an important ML library that includes a variety of applications such as classification, regression, clustering, etc. It is also used in various ML algorithms such as naïve Bayes', K-means, Random forest, etc. Spotify uses Scikit-learn for recommending songs.

1. TENSORFLOW

Tensorflow is the most popular library used by developers for deep learning and machine learning algorithms. For computing complex mathematical computations in various subjects, TensorFlow plays a major role.

1. KERAS

It is an excellent library for analyzing neural networks, build complex deep learning models. It has inbuilt functions to perform computations of neural networks. It is considered as best among Tensorflow and Theano.

1. PYTORCH

This library is used by Facebook to develop neural networks that help in auto-tagging, face-recognition. It provides APIs to integrate with Data Science and Machine Learning frameworks.

1. Image Processing

MAHOTA:

It helps in image manipulations. Provides various functionalities like applying filters, color space conversion, morphological processing, etc.

1. Natural Language Processing

1.NLTK(Natural Language Toolkit):

It is an excellent Python package for analyzing human language, processing text, etc

1. TEXTBLOB:

It is used in textual language processing, helps in tokenisation, etc.

1. For database purpose

SQL ALCHEMY:

It is a Python SQL toolkit that provides the full flexibility to work with SQL databases. It provides a bridge between Python programs and relational databases. Whenever we want to interact with a database ‘create\_engine’ function is imported, using the following code-

1. Web Scraping

Web scraping is a data extraction technique from websites.

BEAUTIFULSOUP:

It helps in parsing data from HTML and XML documents. Beautifulsoup makes it easy to scrape or extract information from websites.

1. For working with date and time

ARROW:

It is an important library to work with data, converting dates, times, and timestamps.

1. For Gaming Purpose

PYGAME:

It is used for writing video games, it also consists of computer graphics, sound waves, etc

There are many libraries in which one library can be embedded into another library to make it more efficient resulting in high-performance.

Apart from the above-discussed libraries, there are many other thousands of libraries that make python -the most preferred language by developers.