

Library, Environment & Framework [What-Why-How]

Name : Gopalkumar Katariya
En. no.: 210133062005
Sub : PWD





Library

Python library is a collection of functions and methods that allows us to perform many actions without writing our code. Each library in Python contains a huge number of useful modules that we can import for our everyday programming.



What is Library ?

A Python library is a reusable chunk of code that you may want to include in your programs/projects. Compared to languages like C++ or C, a Python libraries do not pertain to any specific context in Python. Here, a 'library' loosely describes a collection of core modules. Essentially, then, a library is a collection of modules.



Why Library ?

A Python library is a collection of related modules. It contains bundles of code that can be used repeatedly in different programs. It makes Python Programming simpler and convenient for the programmer. As we don't need to write the same code again and again for different programs.



How do we use Library ?

Some of the most useful python libraries are as follows: NumPy, SciPy, Pandas, SciKit-Learn, Matplotlib, TensorFlow, PyTorch.

```
import pandas as pd
df = pd.DataFrame(
    {
        "Name": ["Gopal", "Parth", "Jainam"],
        "Age": [20, 20, 20],
        "Sex": ["male", "male", "male"],
    }
)
```



What is Environment ?

A virtual environment is a Python environment such that the Python interpreter, libraries and scripts installed into it are isolated from those installed in other virtual environments, and (by default) any libraries installed in a “system” Python, i.e., one which is installed as part of your operating system.



Why we use Environment ?

A virtual environment is a tool that helps to keep dependencies required by different projects separate by creating isolated python virtual environments for them. This is one of the most important tools that most of the Python developers use.



How do I use Environment ?

```
conda create --name myenv
```

```
conda activate ./myenv
```




What is Framework ?

Python Web framework is a collection of packages or modules that allow developers to write Web applications or services. With it, developers don't need to handle low-level details like protocols, sockets or process/thread management.



Why do we use Framework ?

The purpose of a framework is to assist in development, providing standard, low-level functionality so that developers can focus efforts on the elements that make the project unique. The use of high-quality, pre-vetted functionality increases software reliability, speeds up programming time, and simplifies testing.



How we can use Framework ?

A minimal Flask application looks something like this:

```
from flask import Flask

app = Flask(__name__)

@app.route("/")

def hello_world():

    return "<p>Hello, World!</p>"
```