Introduction to Python

Python is an easy-to-learn and a powerful Object-Oriented Programming language. It is a very high-level programming language.

Why Python?

1. **Easy to Use**: Python is comparatively an easier-to-use language as compared to other programming languages.

2. **Expressive Language**: The syntax of Python is closer to how you would write pseudocode, which makes it capable of expressing the code's purpose better than many other languages.

3. **Interpreted Language**: Python is an interpreted language; this means that the Python installation interprets and executes the code one-line-at-a-time.

4. Python is one of the most popular programming languages to be used in **Web Development** as popular Web Development platforms such as Django and Flask are built over it.

Python Download

The very first step towards Python Programming would be to download the tools required to run the Python language. We will be using Python 3 for the course. You can download the latest version of Python 3 from **https://www.python.org/downloads/**

Note:- If you are using Windows OS, then while installing Python make sure that *"Add Python to PATH"* is checked.

Getting an IDE for writing programs:

You can use any IDE of your choice, however, you are recommended to use Jupyter Notebook. You can download it from **https://jupyter.org/install**

Working in Python

Once you have Python installed on your system, you are ready to work on it. You can work in Python in two different modes:-

a) **Interactive Mode:** In this mode, you type one command at a time and Python executes the same. Python's interactive interpreter is also called Python Shell.

b) **Script Mode**: In this mode, we save all our commands in the form of a program file and later run the entire script. After running the script, the whole program gets compiled and you'll see the overall output.

First Program in Python

As we are just getting started with Python, we will start with the most fundamental program which would involve printing a standard output to the console. The `print()` function is a way to print to the standard output. The syntax to use `print()` function is as follows:-

```
In[] : print(<Objects>)
```

- <Objects> means that it can be one or more comma-separated 'Objects' to be printed.
- <Objects> must be enclosed within parentheses.

Example: If we want to print "Hello, World!" in our code, we will write it in the following way:-

```
In[] : print("Hello, World!")
```

and, we get the output as:

```
Out[] : Hello, World!
```

Python executed the first line by *calling* the `print()` function. The string value of `Hello, World!` was *passed* to the function.

Note:- The quotes that are on either side of `Hello, World!` were not printed to the screen because they are used to tell Python that they contain a string. The quotation marks delineate where the string begins and ends.