Introduction to Python

Created by Guido Van Rossum , Python is an `object oriented` , `general purpose` programming language.

With an aim to make programming easier for beginner and get things done in fewers lines as compare to other programming languages, Python is a top choice to learn in recent times.

It was created by `Guido Van Rossum` in `1985-1990`. The language,python was finally released in `1991`

Python is designed to be highly readable .

It uses English keywords frequently whereas other languages useses punctuation , and it has fewer syntactic constructions than other languages.

The inspiration for the name came from BBC's TV show - `Montey Python's Flying Circus`. As the creator of Python -Guido wasa big fan of the tv show and also he wants a shrot ,unique and slighlty mysterious name for his inventon. And thats how the name came to be python. The name has nothing to do with python (reptile).

Features of Python

1. **Free and Open Source : -** Python language is freely available at the official website and you can download it from the given download link below click on the Download Python keyword. Download Python Since it is open-source, this means that source code is also available to the public. So you can download it, use it as well as share it.
2. **Easy to code : -** Python is a high-level programming language. Python is very easy to learn the language as compared to other languages like C, C#, Javascript, Java, etc. It is very easy to code in the Python language and anybody can learn Python basics in a few hours or days. It is also a developer-friendly language.
3. **Easy to Read : -** As you will see, learning Python is quite simple. As was already established, Python's syntax is really straightforward. The code block is defined by the indentations rather than by semicolons or brackets.
4. **Object-Oriented Language : -** One of the key features of Python is Object-Oriented programming. Python supports object-oriented language and concepts of classes, object encapsulation, etc.
5. **GUI Programming Support : -** Graphical User interfaces can be made using a module such as PyQt5, PyQt4, wxPython, or Tk in python. PyQt5 is the most popular option for creating graphical apps with Python.
6. **High-Level Language : -** Python is a high-level language. When we

write programs in Python, we do not need to remember the system architecture, nor do we need to manage the memory.

7. **Extensible feature : -** Python is an Extensible language. We can write some Python code into C or C++ language and also we can compile that code in C/C++ language.

8. **Easy to Debug : -** Excellent information for mistake tracing. You will be able to quickly identify and correct the majority of your program's issues once you understand how to interpret Python's error traces. Simply by glancing at the code, you can determine what it is designed to perform.

9. **Python is a Portable language : -** Python language is also a portable language. For example, if we have Python code for windows and if we want to run this code on other platforms such as Linux, Unix, and Mac then we do not need to change it, we can run this code on any platform.

10. **Python is an Integrated language : -** Python is also an Integrated language because we can easily integrate Python with other languages like C, C++, etc.

11. **Interpreted Language : -** Python is an Interpreted Language because Python code is executed line by line at a time. like other languages C, C++, Java, etc. there is no need to compile Python code this makes it easier to debug our code. The source code of Python is converted into an immediate form called bytecode.

12. **Large Standard Library : -** Python has a large standard library that provides a rich set of modules and functions so you do not have to write your own code for every single thing. There are many libraries present in Python such as regular expressions, unit-testing, web browsers, etc.

13. **Dynamically Typed Language : -** Python is a dynamically-typed language. That means the type (for example- int, double, long, etc.) for a variable is decided at run time not in advance because of this feature we don't need to specify the type of variable.

14. **Frontend and backend development : -** With a new project py script, you can run and write Python codes in HTML with the help of some simple tags , , etc. This will help you do frontend development work in Python like javascript. Backend is the strong forte of Python it's extensively used for this work cause of its frameworks like Django and Flask.

15. **Allocating Memory Dynamically : -** In Python, the variable data type does not need to be specified. The memory is automatically allocated to a variable at runtime when it is given a value. Developers do not need to write int y = 18 if the integer value 15 is set to y. You may just type y=18.