

Introduction to python

What is python?

- Python is an object-oriented (based around data), high-level (easier for humans to understand) programming language.
- It was launched in 1992.

What is a programming language?

- To communicate with a person, we need a specific language, similarly to communicate with computers, programmers also need a language is called Programming language.
- It is a set of instructions written in any specific language (C, C++, Python) to perform a specific task.
- If I tell the computer to add 1 and 4, it will convert 1 to its binary number and 4 to its binary number then performs addition operation.

Python and its applications

- NASA, Google, Netflix use python.
- Its ease of use and learn.
- Its simple syntax. Syntax is not complex.
- Python is used in data visualisation, artificial intelligence, machine learning, web development. (Heart attack risk prediction and car price prediction)
- Python is used in developing games like battle field 2.
- Python is portable. It is an interactive language.

Why learn Python?

Python developers are in high demand in the industry. High pay career opportunities too.

What is a compiler and interpreter?

Compiler converts human readable python code to binary code in 0s and 1s for the computer to understand. Computer performs mathematical operation and displays output.

Eg: `print("hello")` will be converted to machine language by compiler and op is displayed.

Interpreter checks the python program everytime during execution. It checks the code line by line. Line by line execution done by interpreter.

Characteristics of Python:

- It supports functional and structured programming methods as OOPs.
- Python is portable.
- Python is dynamically typed

Many programming languages need to declare the type of the variable before runtime. With Python, the type of the variable can be decided during runtime. This makes Python a dynamically typed language. For example, if you have to assign an integer value 20 to a variable “x”, you don’t need to write `int x = 20`. You just have to write `x = 15`. ok value 15 stored in var x is an integer.