Python

Introduction

* Python is a high-level, interpreted, general-purpose programming language developed by Guido van Rossum in 1991.
* It emphasizes code readability, using simple syntax that allows programmers to express concepts in fewer lines of code than other languages like C++ or Java.
* Python is an open-source language widely used for web development, data science, artificial intelligence, automation, and software development.

History

* Developed by Guido van Rossum at CWI (Centrum Wiskunde & Informatica) in the Netherlands.

First released in 1991.

* Named after the comedy series “Monty Python’s Flying Circus”, not the snake.
* Current major version: Python 3.x, which is the most widely used version.

Features of Python

* Easy to Learn and Read: Simple English-like syntax makes it beginner-friendly.
* Interpreted Language: No need for compilation; Python executes line by line.
* Object-Oriented: Supports classes, inheritance, and encapsulation.
* Portable: Works on all platforms (Windows, macOS, Linux).
* Extensive Libraries: Thousands of pre-built libraries for every task (NumPy, Pandas, TensorFlow, etc.).
* Dynamic Typing: No need to declare variable types; they are determined at runtime.
* Open Source: Freely available and community-supported.
* High-Level Language: Handles memory management automatically.
* Embeddable: Can be integrated with other languages like C/C++ or Java.
* Versatile: Used in multiple domains — from web development to AI.