Python Fundamentals

* Introduction to Python and its Features (simple, high-level, interpreted language).
* Python is a powerful, versatile, and widely-used programming language known for its simplicity and readability. Created by **Guido van Rossum** in 1991, Python emphasizes code readability with its clean syntax and indentation structure. It is designed to be beginner-friendly while being robust enough for advanced applications such as web development, data analysis, artificial intelligence, and more.

**Features of Python:-**

* Easy to Learn and Use
* Interpreted Language
* High-Level Language
* Portability
* Extensive Standard Library
* Dynamically Typed
* Object-Oriented and Functional Programming
* Rich Ecosystem and Frameworks
* Community Support
* Scalability
* Integration Capabilities
* Readable and Maintainable Code
* Open Source
* History and evolution of Python.
* Python was created by **Guido van Rossum** in the late 1980s and officially released in **1991**. It was designed as an easy-to-read and versatile programming language, drawing inspiration from languages like **ABC, Modula-3, C, C++, and Algol-68**. The goal was to make programming fun and accessible while being powerful for real-world applications.
* Advantages of using Python over other programming languages.
* Python stands out among programming languages due to its simplicity, versatility, and vast ecosystem. Here are some key advantages:
* Ease of Learning and Use
* Versatility Across Domains
* Large Standard Library
* Cross-Platform Compatibility
* Extensive Ecosystem and Community Support
* Faster Development Cycle
* Strong Support for Integration
* Suitability for Rapid Prototyping
* Thriving in Emerging Fields
* Cost-Efficiency
* Installing Python and setting up the development environment (Anaconda, PyCharm, or VS Code).
* Step 1: Download Python
* Visit the official Python website: <https://www.python.org/downloads/>.
* Download the latest stable version for your operating system (Windows, macOS, or Linux).
* Step 2: Install Python
* Run the downloaded installer.
* **Important**: Check the box **"Add Python to PATH"** before proceeding.
* Follow the installation prompts and choose default settings unless you have specific needs.
* Step 3: Verify Installation
* Open your terminal or command prompt and type:
* Python --version