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Todays Discussion

01 Introduction to Python

- What is python
- Python : Features
- where we use python
- Compiling Python code

PYTHON

Python is a high-level, general-purpose, and very popular programming language. Python programming language (latest Python 3) is being used in web development, and Machine Learning applications, along with all cutting-edge technology in Software Industry.

Python was created by **Guido van Rossum**, and first released on February 20, 1991

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PYTHON

High Level Programming Language

- Independent of a particular type of computer
- Easier code writing, reading, and maintenance
- Allows programmers to focus more on solving problems

General-purpose Programming Language

- It is designed to be used in a wide variety of programming tasks.
- web development, data analysis,
- artificial intelligence,
- scientific computing, automation

Scripting Language

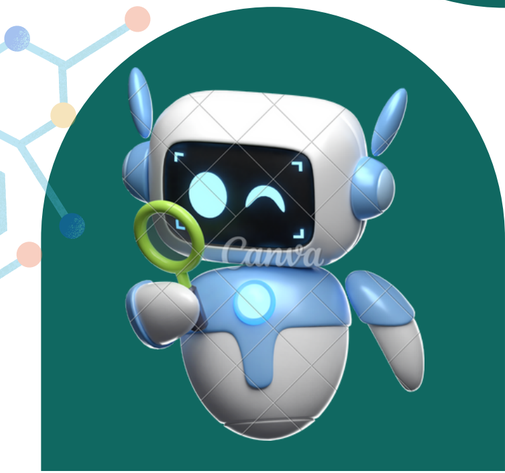
- Interpreted Language
- Rapid Development
- Interactive Mode

Features of Python

1. Easy to Learn and Use
2. Interpreted Language
3. Cross-Platform Compatibility
4. Extensive Standard Library
5. Dynamic Typing
6. Object-Oriented
7. High-Level Language
8. Large Community and Support
9. Versatility
10. Embeddable
11. Readability and Maintainability

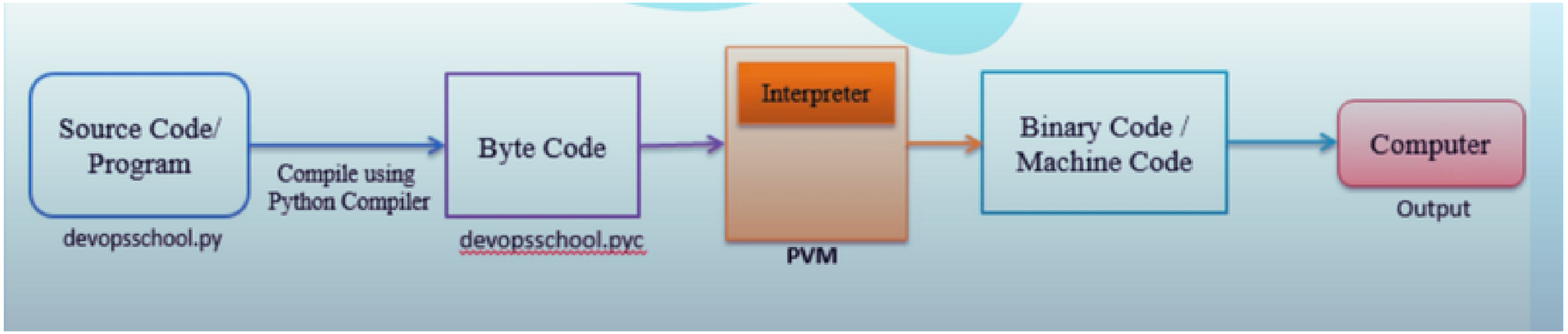
Where we use Python

- Web Development
- Machine Learning and Artificial Intelligence
- Scientific Computing
- Automation and Scripting
- Game Development
- Desktop GUI Applications
- Network Programming
- Cybersecurity and Ethical Hacking
- Internet of Things (IoT)
- Finance and Trading
- Data Visualization



Interpreting Python language

- **Compilation:** Python source code is compiled into bytecode.
- **Loading:** The PVM loads the bytecode into memory.
- **Execution:** The PVM interprets and executes the bytecode instructions, translating them into machine-level operations on the host system.



Working Of PVM

A Python compiler does the same task but in a slightly different manner. It converts the program source code into another code, called byte code. Each Python program statement is converted into a group of byte code instructions.