**PYTHON**

**INTRODUCTION**

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Python Overview

* Interpreted and Interactive
* Object-Oriented: Supports object-oriented programming (OOP) techniques.
* Beginner-Friendly

Python IDE Environment (IDLE):

* Integrated Development Learning Environment.
* Multi-window text editor.
* Shell window for command execution.

Operations:

* print() used for output.
* input() for user keyboard input.
* Escape sequences for special characters.

Variables in Python:

* Types: Integer, Float, String, Boolean.
* Case-sensitive.
* Variable deletion using del().

Python Versions:

* Python 2 and Python 3 are active.
* Python 2 is retained for compatibility.

Interpreters vs. Compilers

* Python is an interpreted language, distinguishing it from compiled languages.
* The interpreted nature allows testing in bits and pieces before assembling the complete application.

Python Features

* Easy to Learn and Maintain: Clear syntax and simple structure.
* Portable: Runs on various platforms with a consistent interface.
* Extendable and Scalable: Supports adding low-level modules and provides a good structure for large programs.
* Interactive Mode: Allows testing and debugging interactively.
* Broad Standard Library: Extensive set of prebuilt libraries.
* Object-Centric: Everything in Python is an object.

Why Python?

* Readability: Clear syntax and simple structure.
* Maintainability: Easy-to-write and debug code.
* Portability: Compatible with various operating systems.
* Broad Standard Libraries: Rich set of prebuilt libraries.
* Interactive: Provides an interactive shell for testing.
* Database Interfaces and GUI Programming:

History of Python

* Guido van Rossum conceptualized Python in the late 1980s.
* First released in 1991, Python has evolved through various versions.
* Derived from the ABC programming language.
* Named after Monty Python's Flying Circus.

Python Syntax

* Indentation is used to delimit blocks, and a colon terminates compound statement headers.
* Basic syntax includes optional semicolons and various methods for printing and reading input.
* Comments can be single or multiple lines.

Variables and Data Types

* Python is dynamically typed; variables are declared automatically when assigned values.
* Variables can change types, and multiple assignments are possible.
* Python supports various data types, including numbers .