

1. Explain the Features of Python.

Ans: Python is a versatile and widely-used programming language known for its simplicity and readability. Here are some of its key features.

1. **Easy to Learn and Use:** Python's syntax is clear and straightforward, making it an excellent choice for beginners.
2. **Interpreted Language:** Python is an interpreted language, meaning that code is executed line by line, which simplifies debugging and testing.
3. **Dynamically Typed:** You don't need to declare variable types explicitly. Python determines the type at runtime, allowing for more flexibility.
4. **High-Level Language:** Python abstracts complex details of the computer's hardware, allowing developers to focus on programming logic rather than low-level operations.
5. **Extensive Standard Library:** Python comes with a comprehensive standard library that provides modules and functions for various tasks, including web development, data manipulation, and more.
6. **Cross-Platform Compatibility:** Python runs on various operating systems, such as Windows,

macOS, and Linux, making it portable across platforms.

2. List down the application of python.

Ans: Python is a versatile language with a wide range of applications across various domains. Here are some common applications of Python.

- 1. Web Development:** Using frameworks like Django and Flask, Python is used to build robust web applications and APIs.
- 2. Data Science and Analysis:** Libraries such as Pandas, NumPy, and Matplotlib enable data manipulation, analysis, and visualization.
- 3. Machine Learning and Artificial Intelligence:** Python is popular for developing machine learning models with libraries like TensorFlow, Keras, and Scikit-learn.
- 4. Automation and Scripting:** Python is often used for writing scripts to automate repetitive tasks, manage files, and perform system administration.
- 5. Game Development:** Libraries like Pygame allow developers to create simple games and multimedia applications.

6. **Desktop Applications:** Python can be used to develop cross-platform desktop applications with frameworks like Tkinter and PyQt.
7. **Web Scraping:** Tools like BeautifulSoup and Scrapy are used for extracting data from websites.
8. **Scientific Computing:** Python is widely used in academia and research for simulations and complex calculations using libraries like SciPy.
9. **Internet of Things (IoT):** Python is used in IoT projects, often with Raspberry Pi and MicroPython for programming devices.

3. What do you mean by dynamic typing in python.

Ans: Dynamic typing in Python means that you do not need to explicitly declare the type of a variable when you create it. Instead, the type is determined at runtime based on the value assigned to the variable.