Day 1. MODULE: PYTHON ESSENTIALS INTRODUCTION

**What is Python...?**

Python is a high-level, interpreted programming language known for its

1. simplicity,
2. versatility,
3. readability.
4. Community and support.

It features general purpose which is clean and concise syntax, making it easy to learn and use for a wide range of tasks, from

1. web development
2. data analysis
3. artificial intelligence (ml, dl)
4. scientific computing
5. Game Development

Pandas

numpy

Python emphasizes code readability and encourages a modular and object-oriented programming approach, fostering rapid development and collaboration.

**A Brief History of Python**

Python was created by **Guido van Rossum** in the late **1980s,** with its first release in **1991.** It underwent major revisions with **Python 2.0 in 2000 and Python 3.0 in 2008,** aiming for simplicity, readability, and efficiency, evolving into one of the most popular programming languages globally with a rich ecosystem and supportive community.

3.1.1

3.1.2

3.2.1

**Installing Python**

[**https://www.python.org/downloads/**](https://www.python.org/downloads/)

**Installing Anaconda**

[**https://www.anaconda.com/download**](https://www.anaconda.com/download)

**Installing Vs Code IDEs**[**https://code.visualstudio.com/download**](https://code.visualstudio.com/download)

**Interpreted VS Compiled**

Interpreted languages like Python are executed line by line, translating each line into machine code at runtime, offering **flexibility and ease of debugging.**

Compiled languages like C++ , java are translated into machine code before execution, resulting in faster performance but **less flexibility during development**.

**Why anaconda Navigator?(jupyter)**

Anaconda is preferred for Python development because it offers

1. **easy package management with Conda**, includes a wide range of
2. **pre-installed libraries** and tools, is compatible across multiple platforms, provides performance optimization, and simplifies the deployment of Python applications.

Python spefic version

Pandas

Numpy

Matplotlib

Vs code

Xyz app

Env(package)3.7 pythond, pandas1.2 , numpy1.2

Abc app

Env(package)3.8 pythond, pandas1.2 , numpy1.2,