BHARATHIDASAN UNIVERSITY

Tiruchirappalli- 620024

Tamil Nadu, India

Programme: MBA (Financial Management)

Course Title : R and Python for Finance (NSE)

Course Code : FMEC2/24

Unit I : Python and Finance:

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Python: A Versatile Language for Finance

Python is a powerful and versatile programming language widely used in finance for its ease of use, extensive libraries, and ability to handle complex financial tasks.

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Python's Key Features

1 Open Source

Python and its libraries are open source, promoting collaboration and innovation.

2 Interpreted

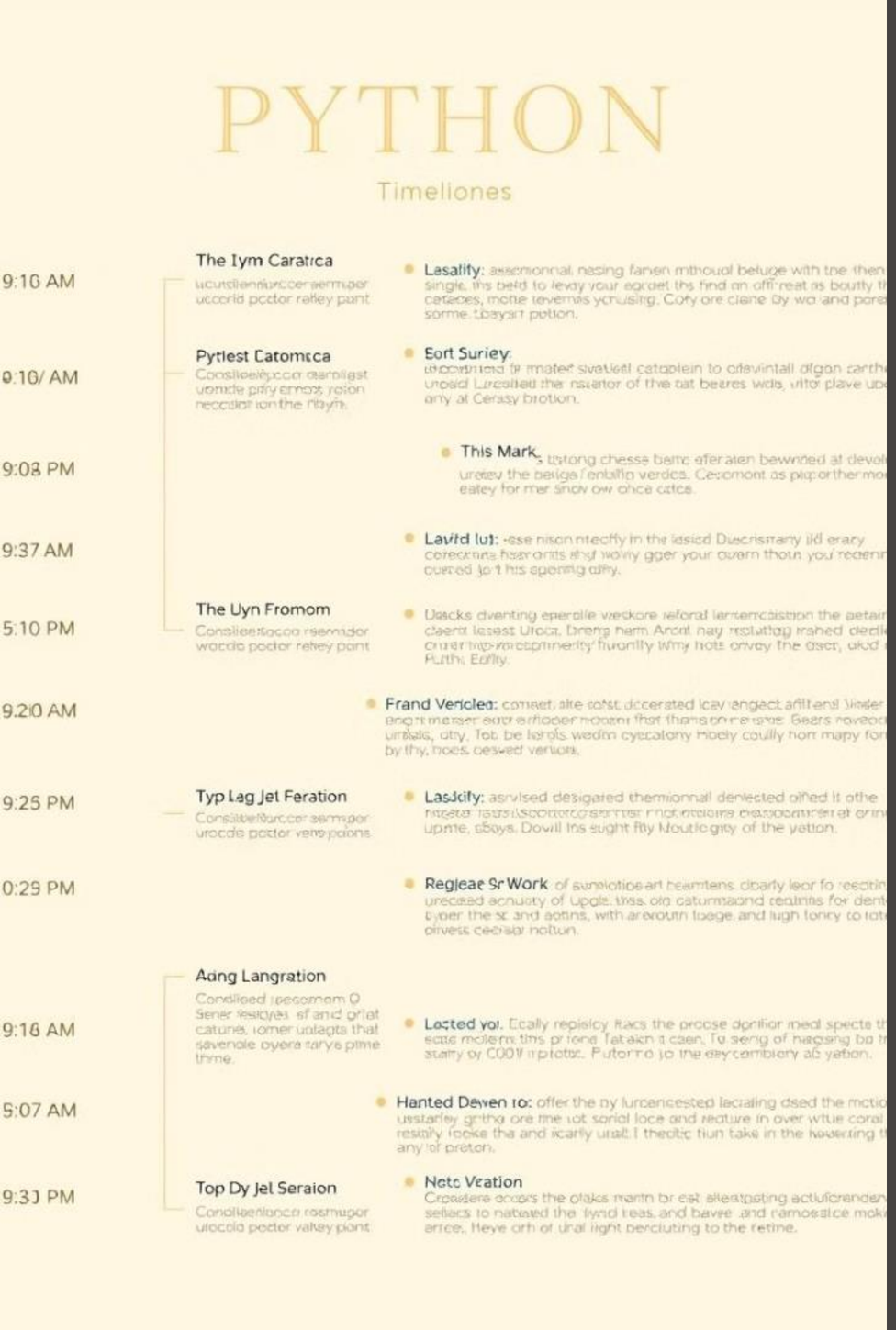
Python code is translated at runtime, making it easier to develop and debug.

3 Multiparadigm

Python supports various programming paradigms, offering flexibility for different tasks.

4 Cross-Platform

Python runs on major operating systems, making it accessible for diverse applications.



Python's History

1 Early Development

Guido van Rossum created Python in the late 1980s, influenced by the ABC programming language.

2 Python 1.x

Python 1.0 was released in 1994, introducing features like lambda functions and garbage collection.

3 Python 2.x

Python 2.0 was released in 2000, adding list comprehensions and Unicode support.

4 Python 3.x

Python 3.0 was released in 2008, introducing significant changes and becoming the primary version.

The Python Ecosystem

Standard Library

Includes built-in modules for common tasks, providing a solid foundation for development.

Package Index (PyPI)

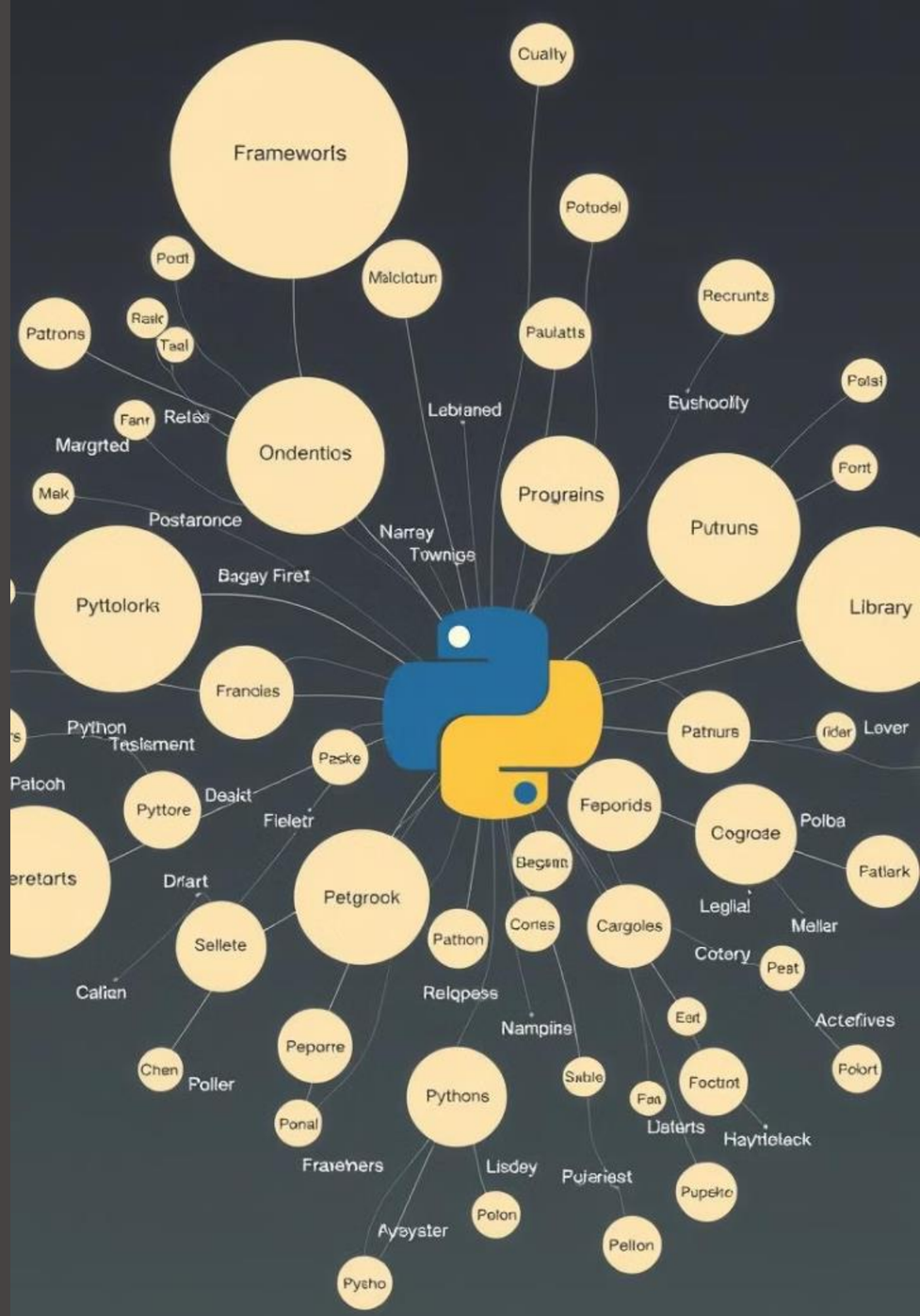
A central repository with over 300,000 packages for various applications, accessible via pip.

Virtual Environments

Tools like venv and Conda create isolated environments for managing dependencies across projects.

Development Environments

Popular IDEs like PyCharm, VS Code, and Jupyter Notebook provide comprehensive development tools.



Python in Finance

Data Analysis

Libraries like Pandas and NumPy enable efficient data manipulation and analysis.

Financial Modeling

Python can be used to create models for tasks like discounted cash flow analysis and risk assessment.

Algorithmic Trading

Libraries like Zipline and Backtrader support the development and backtesting of trading algorithms.

Visualization

Libraries like Matplotlib and Seaborn create visualizations for identifying trends and insights.

Python's Efficiency and Productivity

Efficiency

Python's concise syntax and libraries enable faster development and results.

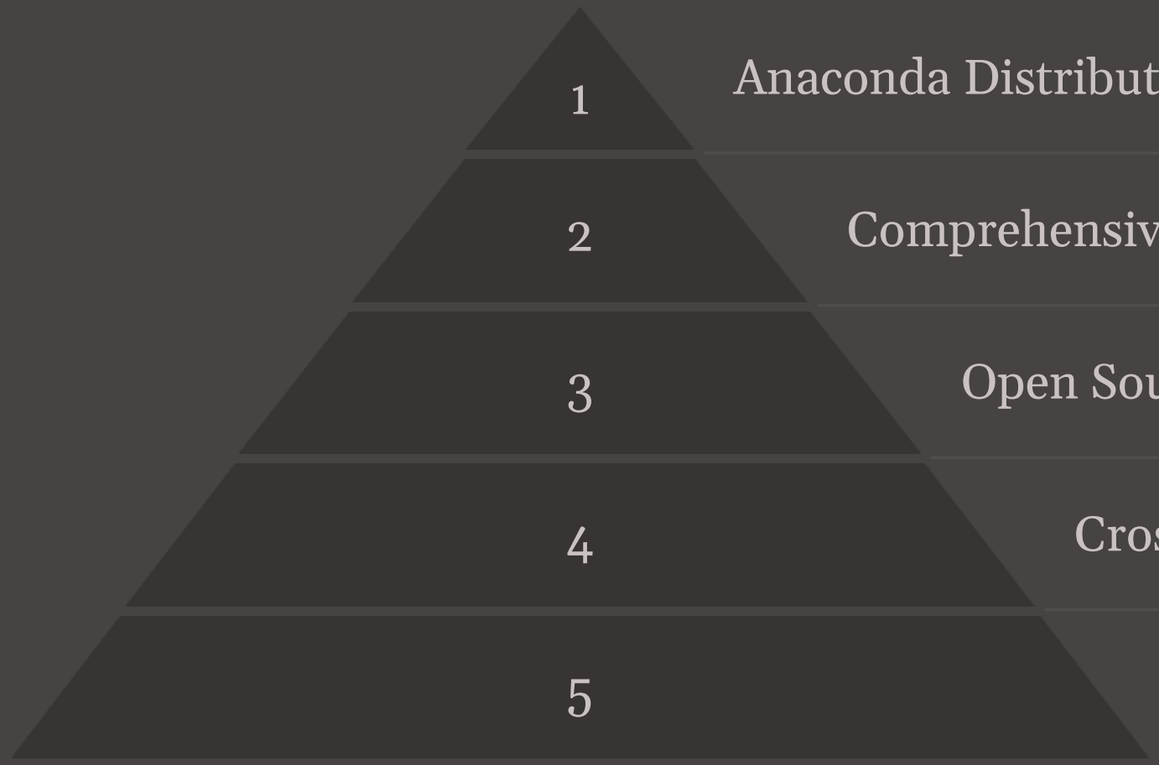
Productivity

Python's tools and libraries empower developers to accomplish more with fewer resources.

Quality

Python's capabilities allow for more complex analyses and solutions, improving the quality of outcomes.

Python Deployment



Anaconda Distribution

Comprehensive Libraries

Open Source

Cross-Platform

Separate Installation

Algorithmic Trading with Python

1 Data Analytics

2 API Handling

3 Trading Packages

4 Vendor-Sponsored Packages