

ADVANCED PYTHON

=====

? **Object-Oriented Python – A Recap (4 Hours)**

- Assertion
- Decorators
- Generators
- Iterators

? **Threading in Python (6 Hours)**

- Creation and execution of threads using the threading module

? **Database Programming Using Python (6 Hours)**

- Connecting to a database (SQLite)
- Executing DML and DDL queries and processing results

? **Network Programming Using Python (6 Hours)**

- Introduction to client-server programming
- Basics of TCP and UDP protocols
- Socket programming
- Building an HTTP client and server

? **GUI in Python (6 Hours)**

- Introduction to GUI building libraries
- Widgets such as Button, Canvas, Checkbutton, Entry, Frame, Label, Listbox, Menubutton, Menu, Message, Radiobutton, Scale, Scrollbar, Text, Toplevel, Spinbox, PanedWindow, LabelFrame, and tkMessageBox

? **Basic Image Processing Using Python (6 Hours)**

- Introduction to digital image processing
- Basic operations on an image: crop, scale, rotate, flip, changing contrast, brightness, color, edge detection, blur, sharpening

? **Basic Numerical Processing Using Python (6 Hours)**

- Introduction to NumPy
- Creation of vectors and matrices
- Matrix manipulation

? **Basic Data Analysis Using Python (6 Hours)**

- Introduction to Pandas
- Pandas data structures – Series and DataFrame

- Data wrangling: loading datasets, selecting columns and rows, adding and deleting data

Basic Data Visualization Using Python (4 Hours)

- Introduction to Matplotlib
- Scatter plot, line plot, bar chart, histogram, box plot

Regular Expressions (6 Hours)

- RE package

Web Scraping (4 Hours)

- BeautifulSoup

