Python Interactive Dashboard Development

MODULE 1 :- NumPy package

- Introduction of NumPy
- Install Numpy
- Array Creation
- Array Reshaping
- Indexing
- Operation
- Sorting and Stacking
- BroadCasting
- Saving and Loading

DEMO 1 :- Array Creation
DEMO 2 :- Array Reshaping
DEMO 3 :- Array Operations
DEMO 4 :- Maths Function

MODULE 2 :- Pandas

- Introduction
- Slicing Dataframe
- Filtering Dataframe
- Transforming Dataframe
- Advanced indexing
- Stack and unstack
- Groupby and aggregations

DEMO 5 :- Pandas Basic operations

MODULE 3 :- Matplotlib

- Introduction to Matplotlib
- Exploring Data using Python
- Matplotlib with Jupyter
- Load data
- How to pyplot Works
- Troubleshooting issues
- Line Chart
- Multi Line Plot
- Fill Plot
- Bar Chart
- Pie Chart

- Histogram
- Scatterplot
- Themes
- Scatter
- Subplot
- 3d plot
- Grid
- Save Image
- Legend
- Style Sheets
- Custom Style Sheets
- Handling Event
- Create An Interface With ipywidgets
- Basemap
- Creating a Choropleth With Matplotlib

DEMO 6 :- Matplotlib Line Plot
DEMO 7 :- Plotting Histogram
DEMO 8 :- Bar Chart
DEMO 9 :- Pie Chart
DEMO 10 :- SubPlot
DEMO 11 :- Save Figure
DEMO 12 :- Matplotlib imshow

MODULE 4 :- Seaborn

- Introduction to Seaborn
- Importing Dataset
- Seaborn Vs Matplotlib
- Using Seaborn with Matplotlib
- Loading a built-in Seaborn data
- Loading a Pandas Dataframe
- LinePlot
- Distplot
- BarGraph
- ScatterPlot
- JointPlot (KDE)
- StripPlot
- Box
- Point Plot
- FacetGrid
- Pair Grid
- CatPlot
- Changing Figure Aesthetic

- Removal of Spines
- Changing the figure Size
- Scaling the plots
- the Style Temporarily
- Relational Plots
- Categorical Plots
- Distribution Plots
- Regression Plots
- Diverging Colour Palette
- Sequential Colour Palette
- Setting the default Colour Palette

DEMO 13 :- Seaborn- LinePlot, Distplot, BarGraph, Scatter
DEMO 14 :- KDE - jointplot() - PairPlot
DEMO 15 :- Distribution - BoxPlot
DEMO 16 :- Violin - Point Plots

MODULE 5 :- Plotly and Cufflinks

- Installation and Setup
- Line Plot
- Scatter Plot
- Bar Plot
- Box Plot and Area Plot
- 3D Plot
- Spread Plot and Hist Plot
- Bubble Plot and Heatmap

DEMO 17 :- Chart Gallery
DEMO 18 :- Cufflinks - Colors
DEMO 19 :- Cufflinks - Offline
DEMO 20 :- Quantfig

Module 6: Jupyter Notebooks

- Understanding the Jupyter ecosystem
- Advantages of using Jupyter Notebooks for interactive computing
- Installing Jupyter using pip or conda
- Launching the Jupyter Notebook server
- Working with Jupyter Notebooks (Hands-on)
- Understanding cell types (Code, Markdown)
- Executing code cells

Project Work

Problem to solve:

1) Create rich data visualizations inside our dot net application the same way we can find it for data visualization using Python and Jupyter Notebooks.

- Example: We have can create rich data visualization with Jupyter notebook, save the data in the our app Database. At the end, we would like to create the same rich data visualization in our application;

Additional Considerations:

1) Development of Interactive Dashboards in Python

Develop interactive dashboards using Python, ensuring seamless integration directly into our application. This approach eliminates the need to export dashboards as images.

2) Effective integration with other libraries

Effective integration with other libraries to facilitate real-time updates. This integration is essential to increase the accuracy of analysis and predictions in our application.

3) Embedding Graphics in Web Applications

Explore methods for embedding graphics directly into web applications. This approach aims to improve the overall user experience by providing a more fluid and interactive interface.