

16. DATA VISUALIZATION USING PYPLOT: LINE CHART, PIE CHART AND BAR CHART

Learning Objectives

After learning this chapter, the learners will be able to

- ❖ Define the term Data Visualization.
- ❖ List the types of Data Visualization.
- ❖ List the uses of Data Visualization.
- ❖ List the types of Visualizations in Matplotlib.
- ❖ Practice installing Matplotlib.
- ❖ Explore importing Matplotlib.
- ❖ Classify the types of Data Visualization plots.
- ❖ Practice creating various types of plots using Matplotlib.

Key Points and Notes

- ⌘ The objective of Data Visualization is to communicate information visually to users.
- ⌘ Data Visualization help users to analyze and interpret the data easily.
- ⌘ Various Charts in Data Visualization helps to show relationship in the data for one or more variables.

- ❏ **Infographics** → An infographic (information graphic) is the representation of information in a graphic format.
- ❏ **Dashboard** → A dashboard is a collection of resources assembled to create a single unified visual display. Data visualizations and dashboards translate complex ideas and concepts into a simple visual format. Patterns and relationships that are undetectable in text are detectable at a glance using dashboard.
- ❏ **Scatter plot:** A scatter plot is a type of plot that shows the data as a collection of points. The position of a point depends on its two-dimensional value, where each value is a position on either the horizontal or vertical dimension.
- ❏ **Box plot:** The box plot is a standardized way of displaying the distribution of data based on the five number summary: minimum, first quartile, median, third quartile, and maximum.
- ❏ A Line Chart or Line Graph is a type of chart which displays information as a series of data points called 'markers' connected by straight line segments.
- ❏ Bar chart represents categorical data with rectangular bars. Each bar has a height corresponds to the value it represents. The bars can be plotted vertically or horizontally.

❏ Bar Graph and Histogram are the two ways to display data in the form of a diagram.

❏ Pie Chart is probably one of the most common type of chart. It is a circular graphic which is divided into slices to illustrate numerical proportion.