

1-11-2024

# Training Day – 32

## Topic: \* Bar Charts and Histograms in Matplotlib

- Created bar charts and histograms to visualize data distributions.
- Example: Plotted a histogram for a dataset of random integers.

### Topic: Bar Charts and Histograms in Matplotlib

- Visualizing categorical and continuous data distributions.
- Example:

```
data = [5, 7, 8, 6, 7]
plt.bar(range(len(data)), data)
plt.hist(data, bins=3)
plt.show()
```

### •In "barplot" some attributes are practiced to visualize the given data are as follows-

- > color: It help. to change the colour of bars in graph.
- > width: It is used to change the broadness of bars in the graph.
- >.xlabel: It used for naming of the X-axis of the bar graph.
- >.ylabel: It used for naming of the Y-axis of the bar graph.
- >.barh: This attribute change the direction of bars, i.e. Vertical to Horizontal.

### •As same like "bar graph" attributes are same in "histogram".

### •In "piechart" some attributes are used to help in the visualization of given data are -

- >explode: It help to point out the selected portion of the pie-chart by exploding the part from the whole chart according to given explode value.
- >autopct: It represent the data in percentage automatically and it's value is-  
"autopct='%1.2f%%' ".

### •In box plot there are some concepts which are important to understand for making visualization easier and identifying outliers easily.

1. IQR: It stand for "inter quartile range", which define as the difference of "third quartile(q3) and first quartile (q0)".
2. Outliers are those value which comes after the last quartile to affect our mean, as well as below the first quartile.
3. Our whole data is divided in four part i.e. 25%, 50%, 75%, 100%, and these percentile values refers to our quartile(q1,q2,q3,q4).
4. The value of lower\_limit is extracted by applying formula of  $\text{lower\_limit} = q1 - 1.5 * (\text{IQR})$ .  
The value of upper\_limit is extracted by applying formula of  $\text{upper\_limit} = q3 + 1.5 * (\text{IQR})$ .

