

# Data Visualization – Beginner Learning Notes

## Bar Plot

Used to compare **average (mean)** values across categories.

**Examples:**

- Compare mean age by gender
- Average sales per product

*Best when X is categorical and Y is numeric.*

## Box Plot

Shows **distribution** of data including median, quartiles, and outliers.

**Examples:**

- Age distribution of survivors vs non-survivors

*Best for comparing medians and detecting outliers.*

## Line Plot

Shows **trend over time** or sequence.

**Examples:**

- Monthly sales trend
- Website traffic per day

*Best for time-series data.*

## Scatter Plot

Shows **relationship** between two numeric variables.

**Examples:**

- Age vs fare
- Study hours vs marks

*Best to detect correlation or patterns.*

## Histogram

Shows **frequency distribution** of a numeric variable.

**Examples:**

- Age distribution
- Salary distribution

*Best to understand data spread and skewness.*

## Count Plot

Shows **number of observations** in each category.

**Examples:**

- Count of males vs females
- Survivors vs non-survivors

*Best for categorical data counts.*

## **Subplot**

Used to draw **multiple plots in one figure**.

**Examples:**

- Line + Bar + Scatter together

*Best for comparison and dashboards.*