

# Data Visualization





# What is data Visualization

**Data visualization is the process of presenting findings from data in a visual format.**

It helps communicate data clearly, reveals insights, and makes the information more accessible and understandable.



# Why is Data Visualization Important?

- Enhances understanding of data
- Makes patterns and trends easier to see
- Helps in decision-making



# Matching Data with Visualization Types

- **Categorical:** Bar chart, pie chart
- **Numerical:** Histogram, box plot
- **Time-Series:** Line graph



# Common Visualization Types

- **Bar Chart:** Comparing quantities (e.g., sales per product)
- **Line Chart:** Showing trends over time (e.g., stock prices)
- **Pie Chart:** Proportions of a whole (use sparingly!)
- **Scatter Plot:** Showing relationships between two variables
- **Histogram:** Distribution of numerical data



# Design Principles for Effective Visuals

- **Color:** Use contrasting, colorblind-friendly palettes
- **Labels:** Always label axes and provide titles
- **Simplicity:** Avoid clutter (chartjunk)
- **Storytelling:** Make sure the visualization tells a clear, insightful story



# How to do visualization using matplotlib and seaborn?