# Practice session for theory

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## Q. Write significance of all basic graphs required for Data Visualization.

**1. Bar Chart**

**Significance:**
Bar charts are used to compare discrete categories or groups. They are ideal for showing differences in magnitude, frequency, or count across multiple categories. Useful in business analytics, surveys, and categorical comparisons.

**2. Histogram**

**Significance:**
Histograms show the distribution of a continuous variable by grouping data into intervals (bins). They are crucial for identifying data spread, central tendency, and skewness.

**3. Line Chart**

**Significance:**
Line charts are used to track changes or trends over time. They are especially useful for time-series data, such as stock prices or temperature changes.

**4. Pie Chart**

**Significance:**
Pie charts display proportions of a whole. They are good for showing relative percentages but can become less effective with many categories or close values.

**5. Scatter Plot**

**Significance:**
Scatter plots are used to determine relationships or correlations between two numeric variables. They help in identifying patterns, clusters, and outliers.

**6. Box Plot (Box-and-Whisker Plot)**

**Significance:**
Box plots summarize data distribution using median, quartiles, and outliers. They are excellent for comparing distributions across groups.

**7. Area Chart**

**Significance:**
Area charts are similar to line charts but with filled areas. They help in visualizing cumulative totals over time, emphasizing volume.

**8. Heatmap**

**Significance:**
Heatmaps use color gradients to represent data values in a matrix format. They are useful for understanding complex data patterns, such as correlations or activity levels.

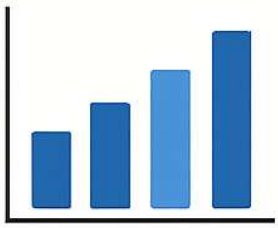
**9. Bubble Chart**

**Significance:**
Bubble charts are an extension of scatter plots where a third variable is represented by bubble size. They allow multi-dimensional analysis in two dimensions.

**10. Violin Plot**

**Significance:**
Violin plots combine box plots and kernel density plots. They show distribution shape and summary statistics, useful for comparing multiple distributions.

# SIGNIFICANCE OF ALL BASIC GRAPHS REQUIRED FOR DATA VISUALIZATION



## Bar Chart

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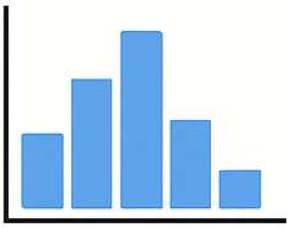

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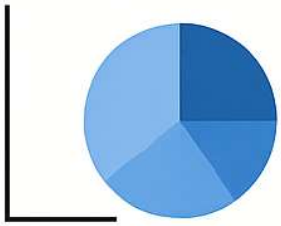

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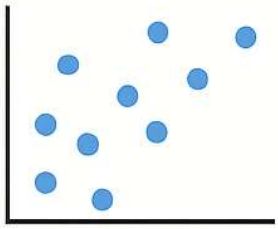

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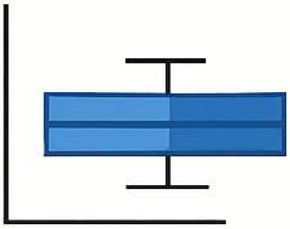

## Box-Plot

**(Box-and-Whisker Plot)**

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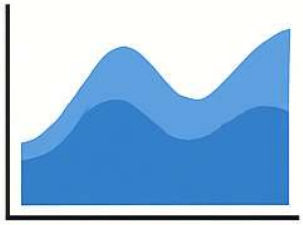

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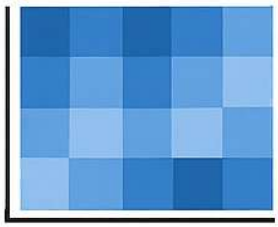

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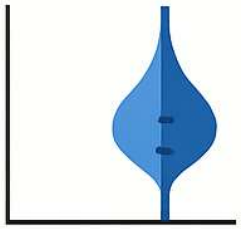

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