**1. Bar Chart**

**Purpose**: Compare values across categories.

* **Use When**:
  + Comparing categories like sales by product, revenue by region, etc.
  + Highlighting differences among distinct groups.
* **Example**: Revenue comparison across multiple product categories.

**2. Column Chart**

**Purpose**: Similar to bar charts but oriented vertically.

* **Use When**:
  + Tracking performance over time, like monthly sales or yearly profit.
* **Example**: Monthly sales figures for a year.

**3. Line Chart**

**Purpose**: Show trends over time.

* **Use When**:
  + Analyzing continuous data, like stock prices, temperature, or sales trends.
* **Example**: Website traffic over several months.

**4. Pie Chart**

**Purpose**: Show proportions or percentage distribution.

* **Use When**:
  + Visualizing part-to-whole relationships, like market share.
* **Example**: Market share of different brands.

**5. Donut Chart**

**Purpose**: Similar to a pie chart but with a central space.

* **Use When**:
  + Want a modern look for part-to-whole relationships.
* **Example**: Expense distribution in a budget.

**6. Area Chart**

**Purpose**: Show trends and magnitude over time.

* **Use When**:
  + Emphasizing volume or cumulative value, like total sales.
* **Example**: Quarterly revenue growth.

**7. Scatter Chart**

**Purpose**: Show relationships or correlations between two variables.

* **Use When**:
  + Exploring outliers, clusters, or trends between two numeric fields.
* **Example**: Advertising spend vs. revenue.

**8. Bubble Chart**

**Purpose**: Enhanced scatter chart with a third variable represented by bubble size.

* **Use When**:
  + Showing relationships with an additional variable.
* **Example**: Revenue (X), profit margin (Y), and market size (bubble size).

**9. Stacked Bar/Column Chart**

**Purpose**: Compare parts of a whole across categories.

* **Use When**:
  + Showing subcategories within categories.
* **Example**: Sales by region broken down by product type.

**10. Clustered Bar/Column Chart**

**Purpose**: Compare multiple categories side by side.

* **Use When**:
  + Highlighting differences between groups for each category.
* **Example**: Male vs. female sales distribution by product.

**11. Waterfall Chart**

**Purpose**: Show cumulative effects of sequential values.

* **Use When**:
  + Analyzing how values contribute to a total.
* **Example**: Tracking profit starting from revenue and subtracting expenses.

**12. Funnel Chart**

**Purpose**: Represent stages in a process.

* **Use When**:
  + Showing sales pipeline, customer journey, etc.
* **Example**: Steps in a sales process (leads → opportunities → conversions).

**13. Gauge Chart**

**Purpose**: Display progress toward a target.

* **Use When**:
  + Measuring KPIs like sales goal achievement.
* **Example**: Percentage of sales target met.

**14. Card**

**Purpose**: Highlight key metrics.

* **Use When**:
  + Showcasing single values like total revenue or count.
* **Example**: Total number of customers.

**15. Heat Map**

**Purpose**: Display data density or patterns.

* **Use When**:
  + Identifying high and low-performing areas.
* **Example**: Website traffic by hour and day.

**16. Treemap**

**Purpose**: Show hierarchical data.

* **Use When**:
  + Representing parts of a whole in a structured way.
* **Example**: Sales contribution by product categories and subcategories.

**17. Map (Geospatial Visualizations)**

**Purpose**: Show data geographically.

* **Use When**:
  + Representing data with location aspects.
* **Example**: Sales distribution across countries or cities.

**18. Slicer**

**Purpose**: Enable dynamic filtering.

* **Use When**:
  + Allow users to interactively filter data.
* **Example**: Filter sales by year, region, or product category.

**19. KPI (Key Performance Indicator)**

**Purpose**: Measure progress against goals.

* **Use When**:
  + Tracking metrics relative to targets.
* **Example**: Sales performance vs. target.

**Summary Table for Quick Reference:**

| **Scenario** | **Graph Type** |
| --- | --- |
| Compare categories | Bar/Column Chart |
| Show trends over time | Line/Area Chart |
| Part-to-whole relationships | Pie/Donut Chart |
| Correlations between variables | Scatter/Bubble Chart |
| Hierarchical data | Treemap |
| Geographical representation | Map |
| Cumulative impact | Waterfall Chart |
| Stages in a process | Funnel Chart |
| Single metric highlight | Card |
| Progress toward a goal | Gauge/KPI |