# Data Visualization Power BI Assignment

## 1. What are the different charts supported in power BI.

| Chart Type | Description |
|---|---|
| Bar / Column Chart | Compare values across categories. |
| Line Chart | Show trends over time. |
| Pie / Donut Chart | Show part-to-whole relationships. |
| Area Chart | Line chart with filled area. |
| Scatter Chart | Show relationship between two numerical values. |
| Map / Filled Map | Visualize geographical data. |
| Tree Map | Show data hierarchy as nested rectangles. |
| Gauge | Show progress towards a goal. |
| KPI Visual | Display key performance indicators. |
| Card / Multi-row Card | Show single or multiple metrics clearly. |
| Slicer | Used for filtering data on the report page. |
| Funnel Chart | Track data through stages of a process. |
| Waterfall Chart | Show how values increase/decrease in a process. |
| Matrix Visual | Similar to pivot table; useful for drill-down. |
| Table Visual | Show raw data in tabular form. |

**2. When to use which chart, explain with one example.**

| Chart Type | Use | Example |
|---|---|---|
| Bar/Column | Comparing categories | Sales by Region |
| Line Chart | Showing trends | Revenue over Months |
| Pie Chart | Part-to-whole | Market Share by Brand |
| Map | Geo-distribution | Sales by Country |
| Tree Map | Hierarchical data | Sales by Category & Sub-category |
| Scatter Plot | Relationship analysis | Price vs Quantity sold |
| Gauge | Target vs Actual | Sales Target Completion |
| Waterfall | Contribution of changes | Profit movement over time |
| Funnel | Process tracking | Lead conversion stages |

**3. What is the difference between matrix visual and table visual.**

| Feature | Matrix Visual | Table Visual |
|---|---|---|
| Structure | Pivot-style, hierarchical format | Simple tabular format (like Excel) |
| Grouping | Supports row and column grouping | No row/column grouping |
| Drill-down | Supported (for hierarchies) | Not supported |
| Subtotals | Available | Not available |
| Pivot Capability | Yes (acts like a Pivot Table) | No |