

# Week 7 Report

## Topic: Power BI Visualizations

### Introduction

In Week 7, the focus was on understanding and creating **Power BI visualizations**. Visualizations are key to interpreting data, uncovering insights, and making dashboards interactive and informative. Power BI provides a wide variety of visualization types that can be customized to display data effectively.

### Canvas, KPI, and Cards

- **Canvas:** The workspace in Power BI where all visuals, charts, KPIs, and cards are placed. Users can arrange visuals, add slicers and filters, and design interactive dashboards.
- **KPI Visuals:** Display key metrics at a glance with trend indicators. Useful for monitoring performance against targets.
- **Cards:** Show single important values like totals or averages. Ideal for highlighting critical metrics.

### Common Visualization Types in Power BI

#### 1. Bar and Column Charts

- Used to compare data across categories.
- **Example:** Number of disasters by state.

#### 2. Line Charts

- Used to show trends over time.
- **Example:** Monthly sales revenue trends.

#### 3. Pie and Donut Charts

- Display parts of a whole.
- **Example:** Distribution of disaster types.

#### 4. Area Charts

- Show cumulative totals over time.
- **Example:** Total affected people over the years.

#### 5. Scatter Plots

- Show relationships between two numerical variables.
- **Example:** Total cost vs number of people affected per disaster.

## 6. Maps and Filled Maps

- Display geospatial data using locations and regions.
- **Example:** Disaster occurrences by state.

## 7. Treemaps

- Visualize hierarchical data using nested rectangles.
- **Example:** Disaster types by region.

## 8. Waterfall Charts

- Show sequential increases and decreases.
- **Example:** Profit changes across departments or regions.

## Key Concepts

- **Filters and Slicers:** Allow dynamic selection of data to update visuals.
- **Conditional Formatting:** Highlight specific values or trends.
- **Tooltips:** Show additional data on hover for better insights.
- **Bookmarks and Drillthroughs:** Enable interactive storytelling and detailed analysis.

## Best Practices

- Choose chart type based on data type and analysis goal.
- Avoid cluttered visuals; keep dashboards clean and readable.
- Use consistent color schemes to enhance understanding.
- Combine multiple visuals to provide context and deeper insights.
- Always label axes, legends, and titles clearly.

## Outcome of Week 7

- Learned how to select and create appropriate visualizations for different data types.
- Understood interactive features like slicers, filters, drillthroughs, KPIs, and cards.
- Gained skills to design dashboards that convey insights effectively.
- Prepared to combine visuals, DAX measures, and data models for interactive reporting.