

## Experiment 12

### Aim:

To visualize population data in **Power BI** by creating a **Donut Chart** and morphing it into a **Tree Map** for hierarchical analysis.

### Theory:

Power BI is a powerful business intelligence tool used to create interactive visualizations. Two key charts used in this experiment are:

#### 1. Donut Chart

- Shows proportional distribution of categories.
- Represents each category as a slice of a ring.

#### 2. Tree Map

- Represents hierarchical or grouped data.
- Uses nested rectangles sized according to their value.

Power BI allows users to **morph** visuals—i.e., switch between visualization types while retaining the same data fields, enabling multi-perspective analysis of the same dataset.

### Procedure:

#### Step 1: Prepare Dataset

Create a CSV file named PopulationData.csv with columns:

- Country
- Continent
- Population (Millions)

Example rows:

China, Asia, 1400

India, Asia, 1380

USA, North America, 331

...

## **Step 2: Load Data into Power BI Desktop**

- Open Power BI → Home → Get Data → Text/CSV
- Load the population dataset.

## **Step 3: Create Donut Chart**

1. Select **Donut Chart** visual.
2. Drag:
  - **Legend** → **Country**
  - **Values** → **Population (Millions)**
3. Add title: “*Population Distribution by Country*”
4. Enable **Data Labels** to show percentages.

## **Step 4: Morph Donut Chart into Tree Map**

1. Click the Donut Chart (selected state).
2. In Visualizations pane → choose **Tree Map** icon.
3. Add:
  - **Group** → **Continent, Country**
  - **Values** → **Population (Millions)**

## **Step 5: Format Visualization**

- Adjust colors under *Format* → *Data Colors*.
- Add title: “World Population Tree Map”.
- (Optional) Add slicers for continent-level filtering.

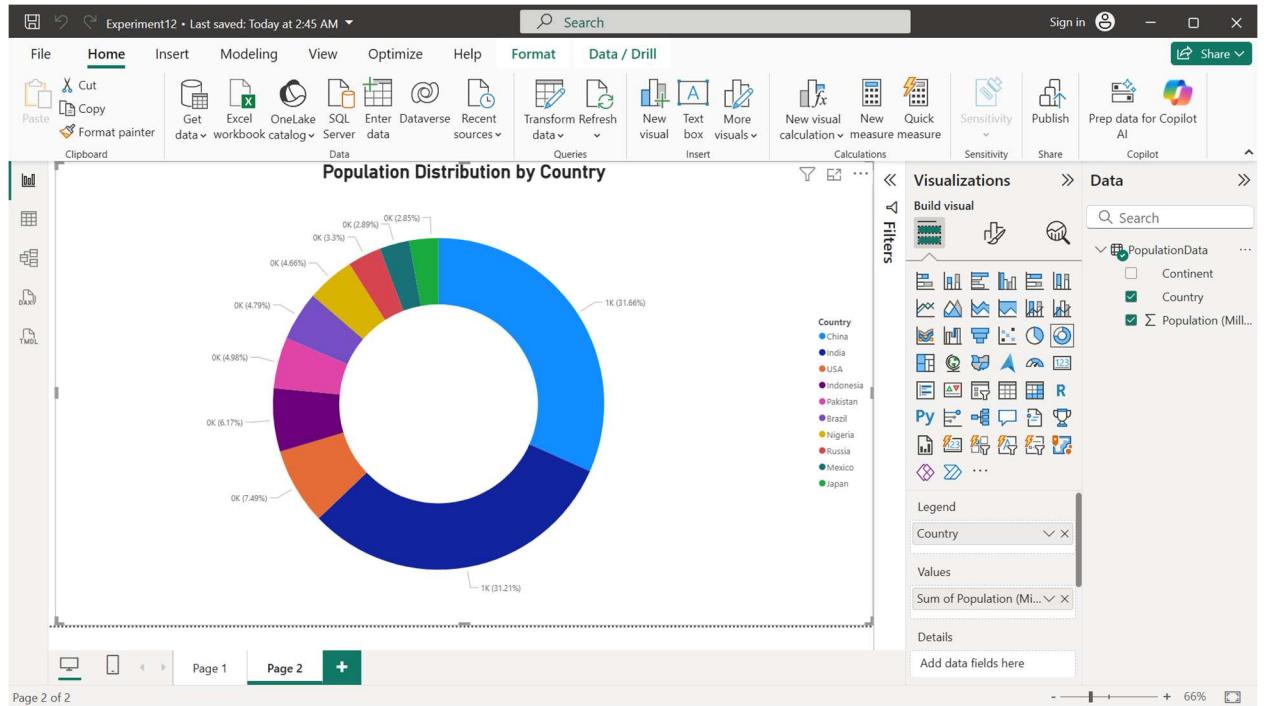
## **Step 6: Save Report**

Save as Population\_Visualization.pbix.

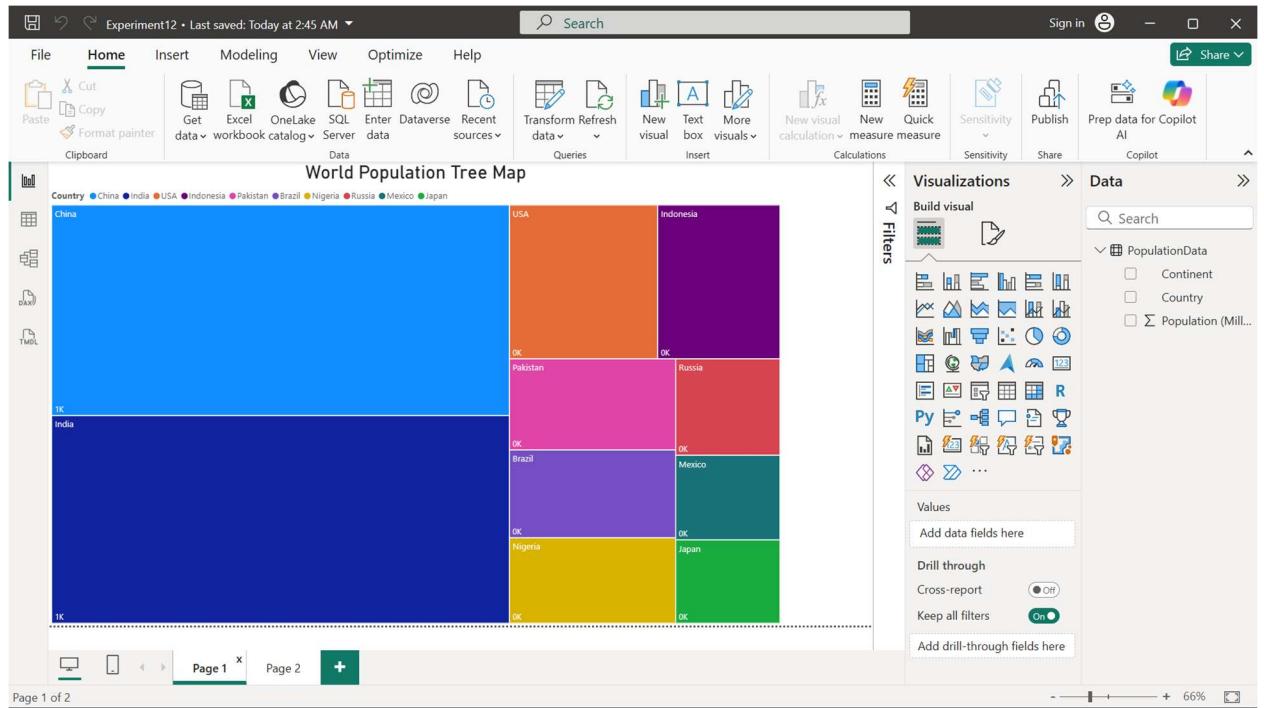
### **Output:**

Two visual representations:

1. **Donut Chart** showing proportion of population for each country.



## 2. Tree Map showing hierarchical distribution of population by continent and country.



## Conclusion:

This experiment demonstrates how Power BI can transform data views from proportional (Donut Chart) to hierarchical (Tree Map). Using visual morphing and interactive filtering, Power BI provides dynamic insights into real-world population data.