Climate Trend Analysis – Sample Insights Summary
Location: Brisbane
Time Period: 2008–2017
Tool Used: Power BI

Rainfall Patterns

- **High Rainfall Months:**
  Brisbane consistently experiences its highest average rainfall during **January (5.9 mm)** and **February (4.9 mm)**, marking the peak of the wet season.
- **Low Rainfall Periods:**
  The driest months are between **June and September**, with rainfall dropping as low as **1.0 mm** in July and August. This pattern reflects Brisbane's **subtropical climate**, where winter tends to be dry.
- **Seasonal Trend:**
  Rainfall shows a clear **seasonal dip in mid-year** and a gradual rise toward the year-end, peaking again in summer. This can help predict irrigation demand or potential flood periods.

Temperature Trends

- **Warmest Months:**
  Maximum average temperatures peak in **January (30.3°C)** and **February (30.6°C)**, aligning with the summer season.
- **Coolest Months:**
  The lowest average maximum temperatures occur in **June (21.7°C)** and **July (21.6°C)**.
- **Annual Temperature Cycle:**
  Temperatures follow a smooth bell-curve trend, indicating a **well-defined seasonal pattern**, typical of coastal Australian cities.

Rain Prediction Behavior (RainToday vs RainTomorrow)

- **Pattern Observed:**
  From the bar chart comparing RainToday and RainTomorrow, we see that:
  - On days when it **rained today**, it is **more likely to rain tomorrow** as well.
  - Conversely, if it **did not rain today**, the chance of rain tomorrow is significantly lower.
- **Implication:**
  There is a measurable **short-term dependency** between rainy days, suggesting persistence of rain events, which is a key insight for short-term forecasting or outdoor event planning.

Summary

- Brisbane shows **distinct and predictable climate behavior**, with warmer, wetter summers and cooler, drier winters.
- The data reinforces the **seasonality** of weather patterns and could serve as a baseline for anomaly detection, trend shifts, or planning purposes.
- The dashboard enables users to interactively filter by year and region—making it flexible for broader exploration beyond Brisbane.