Project Title: Interactive Power BI Dashboard for Customer Satisfaction Analysis

Objective:

The objective of this project is to create an interactive Power BI dashboard to analyze customer satisfaction based on various factors such as response time, product quality, and region. The dashboard will allow users to easily explore trends, relationships, and key influencers of customer satisfaction.

Step 1: Data Preparation

Dataset Overview:

The dataset contains information about 500 customers and includes the following columns:

- **Customer ID**: Unique identifier for each customer.
- **Response Time (minutes)**: The time taken for customer service to respond to the customer (in minutes).
- **Product Quality (1-10)**: Product quality score assigned to each customer, ranging from 1 to 10.
- **Customer Satisfaction (1-100)**: Customer satisfaction score, calculated as a function of response time, product quality, and some random noise.
- **Region**: Geographical region of the customer, with four possible values: North, South, East, and West.

The data was generated using Python with a random seed for reproducibility and saved as a CSV file for use in Power BI.

Data Import:

- The dataset was imported into Power BI Desktop using the **Get Data > Text/CSV** option, and the file was located at D:\excel josh\predictive modeling\customer_satisfaction_data.csv.

Step 2: Dashboard Pages Design

Page 1: Overview Dashboard

This page serves as a summary of key metrics related to customer satisfaction.

1. **Card Visuals**:
    - **Average Response Time**: Displays the average response time of customer service.
    - **Average Product Quality**: Shows the average product quality score.
    - **Average Customer Satisfaction**: Displays the average customer satisfaction score.
2. **Bar Chart**:
    - **X-axis**: Region (North, South, East, West).

- **Y-axis**: Customer Satisfaction, showing the variation of customer satisfaction by region.

3. **Slicer**:
    - Allows filtering of data by region, enabling users to focus on specific regions.

Page 2: Detailed Analysis

This page provides a more granular view of the data, including relationships between variables.

1. **Scatter Plot**:
    - **X-axis**: Response Time (in minutes).
    - **Y-axis**: Customer Satisfaction.
    - **Size**: Product Quality (influences bubble size).
2. **Line Chart**:
    - **X-axis**: Time (if available or any time-related field).
    - **Y-axis**: Customer Satisfaction, showing how satisfaction evolves over time.
3. **Key Influencers Visual**:
    - This visual identifies which factors (such as Response Time and Product Quality) most influence Customer Satisfaction.

Step 3: Navigation Between Pages

1. **Button Navigation**:
    - On **Page 1 (Overview)**: A button labeled "Go to Detailed Analysis" navigates the user to Page 2.
    - On **Page 2 (Detailed Analysis)**: A button labeled "Go to Overview" navigates the user back to Page 1.

Step 4: Slicers and Filters

1. **Slicer**:
    - A slicer for Region was added on both pages, allowing users to filter the data dynamically.
    - Slicer synchronization across pages ensures that region selections persist across both pages.
2. **Customization**:
    - The slicer was configured to allow users to select regions either through dropdown or between modes for better usability.

Step 5: AI and Advanced Features

1. **Key Influencers Visual**:
    - On **Page 2**, the Key Influencers visual was used to analyze which factors—Response Time and Product Quality—most affect Customer Satisfaction.
2. **Q&A Visual**:
    - The Q&A visual was placed on **Page 1**, allowing users to ask natural language questions such as:
        - "What is the average satisfaction by region?"
        - "What is the relationship between product quality and satisfaction?"

Step 6: Dashboard Design and Aesthetics

1. **Color Scheme**:
    - Consistent colors were used across the visuals to maintain a cohesive design. The page background and visuals were styled using the Format Pane.
2. **Alignment**:
    - Visuals were aligned using Power BI's built-in alignment tools to ensure a polished and professional appearance.
3. **Titles**:
    - Text boxes were added to provide titles such as "Overview Dashboard" to guide users.
4. **Tooltips**:
    - Tooltips were enabled for all visuals to provide additional information when users hover over a data point.