📘 King County House Sales Dashboard – Documentation

---

1. Project Overview

The **King County House Sales Dashboard** is a business intelligence solution developed in Tableau to analyse real estate sales data from King County, Washington. It offers a user-friendly interface for examining housing market trends, identifying key drivers of price, and exploring the spatial distribution of house sales.

This dashboard supports decision-making by enabling dynamic data exploration through filtering, mapping, and comparative analysis. It is especially valuable for stakeholders seeking to understand local housing dynamics during the 2014–2015 period.

---

2. Data Source Description

- **Dataset Name**: King County House Sales
- **Timeframe**: January 2014 – May 2015
- **Source**: King County Assessor's Public Data / Kaggle
- **Number of Records**: ~21,600 transactions
- **Key Fields**:
    - id: Unique transaction ID
    - date: Date of sale
    - price: Sale price (target variable)
    - bedrooms, bathrooms: Home configuration
    - sqft_living, sqft_lot: Interior and lot sizes
    - floors, waterfront, view, condition, grade
    - zipcode, lat, long: Geographic identifiers
    - yr_built, yr_renovated: Construction and renovation years

Data has been cleaned, formatted, and transformed to ensure consistency and usability in Tableau.

---

3. Dashboard Components

- **Top KPIs**:
    - Total Houses Sold
    - Total Sales Value
    - Average Price per Home

    - Average Price per Square Foot

- **Sales Trend Line**:
  Monthly trend of the total number of homes sold and average sale prices
- **Map View (Choropleth)**:
  Zip code-level average prices shown with color intensity
- **Feature Comparison Bar Charts**:
  Sales by number of bedrooms, price by condition, waterfront vs. non-waterfront comparison
- **Distribution Charts**:
  Price distribution, square footage vs. price (scatterplot)

---

4. Key Metrics and KPIs

- **Total Sales Volume**: Aggregate monetary value of all homes sold
- **Average Sale Price**: Mean price across all transactions
- **Price per Sqft**: Average price per square foot of interior space
- **Median Price by Zipcode**: Useful for identifying local market behavior
- **Home Count by Type**: Based on condition, bedrooms, waterfront, etc.

---

5. Interactivity and Filters

- **Filter Controls**:
    - Date range
    - Zipcode
    - Bedrooms / Bathrooms
    - Price Range
    - Property Features (waterfront, view, condition)
- **Interactive Map**:
  Zoomable and clickable zip codes with tooltips and pop-ups
- **Drill-Down Capabilities**:
  Click a chart element or map region to filter the rest of the dashboard
- **Dynamic Tooltips**:
  Hovering provides additional insights, such as averages and counts

---

6. Use Cases and Target Audience

- **Real Estate Agents**: Identify high-performing neighborhoods

- **Homebuyers**: Compare price trends by area or house features
- **Investors**: Analyze ROI potential by location and property characteristics
- **Government Officials**: Study housing trends to inform policy and development
- **Data Analysts**: Gain insights for market prediction or segmentation models

---

7. Limitations and Opportunities

Current Limitations:

- Static timeframe (2014–2015)
- Geographic limitation to King County only
- No demographic overlays included

Future Enhancements:

- Add more years of data and apply forecasting techniques
- Integrate Zillow/Home Value Index for market benchmarking
- Overlay demographic data (school ratings, income levels)
- Embed predictive modeling tools (e.g., regression, machine learning)
- Optimize dashboard for large-scale datasets and responsiveness

---