

SmartBridge Final Project Documentation

Project Title: Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau

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Date: June 19, 2025

Overview

This project is designed for ABC Company to solve the challenge of understanding the key factors influencing house sale prices and trends over time. By analyzing housing data using Tableau dashboards, the project reveals insights on renovation impacts, house age characteristics, and structural features— aiding decision-makers in optimizing pricing and strategy.

Objectives

- Analyze and visualize housing sales data
- Understand the impact of renovations on house price
- Explore house age distributions across different features
- Provide strategic insights through visual storytelling
- Embed Tableau dashboards into a Flask-based website

Tools & Technologies Used

Tool	Purpose
Tableau	Data Visualization
Python (Flask)	Web App & Dashboard Hosting

HTML/CSS

Frontend Styling & Layout

GitHub

Version Control & Project Showcase

Git

Source Code Management

Data Insights and Visual Scenarios

📊 Scenario 1: KPI Overview

Displays average sales price, total house count, and total basement area.

📊 Scenario 2: Total Sales by Years Since Renovation

Shows how recently renovated houses relate to higher/lower sale prices.

📊 Scenario 3: House Age by Renovation Status

Pie chart showing renovated vs non-renovated houses across age.

📊 Scenario 4: House Age by Features

Bar chart showing age variation by bathrooms, bedrooms, and floors.

Project Development Steps

1. Data Preparation
2. Visualization in Tableau
3. Flask Web App Integration
4. Hosting on GitHub

Unique Features

- ✦ Stylish splash screen
- 📊 Interactive embedded Tableau dashboards
- 📱 Modern, responsive UI
- ✓ Built using Flask from scratch
- 👤 Signature by Rayeesa

Outcome & Benefits

Stakeholders can explore trends visually, use renovation insights for pricing, and reuse the platform for other markets.

Data Used for Project

The dataset used is a synthetic housing dataset inspired by King County Housing Data and customized for SmartBridge.

Key columns:

- SalePrice
- LotArea
- YearBuilt
- YearRenovated
- Bedrooms
- Bathrooms
- Floors
- Location

Calculated Fields:

- HouseAge = 2025 - YearBuilt
- YearsSinceRenovation = 2025 - YearRenovated
- Renovated = Yes/No

Project URLs

KPI Overview Dashboard:

<https://public.tableau.com/app/profile/s.rayeesa.tabusum/viz/kpioverview/Dashboard1>

Renovation Dashboard:

<https://public.tableau.com/app/profile/s.rayeesa.tabusum/viz/renovatedhouses/Dashboard2>

GitHub Repository: <https://github.com/rayeesa163/smartbridge-final-project>