Final Report — Housing Visualization Analysis Trend

1. INTRODUCTION

1.1 Project Overview

The project Housing Visualization Analysis Trend focuses on analyzing housing market data to identify key factors that influence sale prices and trends. Using Tableau, we have created interactive dashboards that help real estate stakeholders interpret complex housing data easily.

1.2 Purpose

The purpose is to provide visual insights that support better pricing strategies, renovation decisions, and market competitiveness for real estate companies and customers.

2. IDEATION PHASE

2.1 Problem Statement

It is challenging for real estate companies and buyers to understand how factors like house age, renovations, and features impact sale prices.

2.2 Empathy Map Canvas

Stakeholders: Real estate analysts, buyers, sellers, and company executives.
Needs: Easy-to-understand insights into pricing trends**.**
Pains: Lack of clear, actionable data leads to poor pricing and investment decisions.
Gains: Visual dashboards that show clear patterns, trends, and factors driving prices.

2.3 Brainstorming

The team brainstormed possible ways to visualize historical housing data, experimented with multiple chart types in Tableau, and decided on four scenarios that show different angles of the market:

1. Overall Data Overview
2. Total Sales by Years Since Renovation
3. House Age by Renovation Status
4. House Age by Features (bathrooms, bedrooms, floors)

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

- **Data Collection:** Gather and clean housing data
- **Analysis:** Explore and visualize key trends

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Action: Stakeholders use insights for pricing and investment

3.2 Solution Requirement

- Clean dataset with sale prices, house age, renovation status
- Tableau installed for analysis
- Visualizations: histogram, pie chart, grouped bar chart
- Interactive dashboard with filters

3.3 Data Flow Diagram
Data Source → Data Cleaning → Tableau → Dashboards → Stakeholders

3.4 Technology Stack

- **Data Analysis:** Tableau Desktop
- **Data Preparation:** Tableau prep • **Reporting: PDF 4. PROJECT DESIGN**

4.1 Problem–Solution Fit
We matched the problem (poor understanding of price trends) with an interactive, userfriendly Tableau dashboard solution that solves this by visualizing critical factors.

4.2 Proposed Solution
A four-scenario Tableau dashboard that reveals the relationship between renovation status, house age, and features with sale prices.

4.3 Solution Architecture

1. **Data Source:** Transformed housing data CSV
2. **Data Preparation:** Cleaned missing values, created new fields
3. **Tableau Visualizations:** Created four scenarios
4. **Dashboard & Story:** Combined all scenarios for stakeholder use

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning Planned in four sprints:

- **Sprint-1:** Data collection & cleaning (14–18 June 2025)

  Sprint-2: Build first two scenarios (19–23 June 2025)

- **Sprint-3:** Build remaining scenarios (24–28 June 2025)

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- **Sprint-4:** Dashboard integration & export (29 June–3 July 2025)

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- Verified dataset integrity after cleaning
- Confirmed Tableau dashboards load correctly
- Tested filters, calculated fields, and interactions

7. RESULTS

7.1 Output Screenshots Include
screenshots of:

- Scenario 1: Overall Data Overview
- Scenario 2: Total Sales by Years Since Renovation
- Scenario 3: House Age by Renovation Status
- Scenario 4: House Age by Features
- Final combined dashboard and story in Tableau

8. ADVANTAGES & DISADVANTAGES Advantages:

- Visualizes complex data clearly
- Supports better decision-making
- Scalable to other regions/datasets **Disadvantages:**
- Relies on data quality
- Tableau license required for full features

9. CONCLUSION

This project demonstrates how **interactive data visualizations** can uncover valuable insights in housing markets. Stakeholders can understand trends and make data-driven decisions.

10. FUTURE SCOPE

- Expand analysis to other cities or countries
- Integrate predictive modeling for price forecasts
- Automate data updates with live connections

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11. APPENDIX

Dataset Link: C:\Users\vappa\OneDrive\Desktop\tableau project\project executable files\Cleaned_Housing_Data.csv

GitHub & Project Demo Link:

GitHub link: https://github.com/sai-koushik-99

Dashboard link:
https://public.tableau.com/views/project_17514799460140/Dashboard1?:language=enUS&publish=yes&:sid=&:display_count=n&:origin=viz_share_link&:device=desktop

Storyboard link:
https://public.tableau.com/views/project_17514799460140/Story1?:language=enUS&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Video link:C:\Users\vappa\OneDrive\Desktop\video.mp4