

Project Report

| | |
|--------------|--|
| Team ID | PNT2025TMID10260 |
| Project Name | visualizing housing market trends: an analysis of sale prices and features using tableau |

1. INTRODUCTION

1.1 Project Overview

The project titled “**Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau**” aims to transform raw housing data into meaningful visual insights. It focuses on analyzing factors such as **years since renovation, house age, number of bathrooms, bedrooms, and floors**, and how these impact **house sale prices**.

Using **Tableau** and **Tableau Prep Builder**, this project cleans, processes, and visualizes the data through interactive dashboards and storytelling features. The result is a powerful tool that helps users **understand pricing trends**, observe **buyer behavior**, and **explore property feature patterns** through engaging, data-driven visuals.

1.2 Purpose

The purpose of this project is to:

- Provide an **interactive platform** to explore housing market data.
- Identify and visualize how **specific features and renovations** influence house sale prices.
- Help users understand **sales distribution trends** based on age and renovations.
- Deliver **clear, visual narratives** for analytical insights using Tableau's storytelling capability.

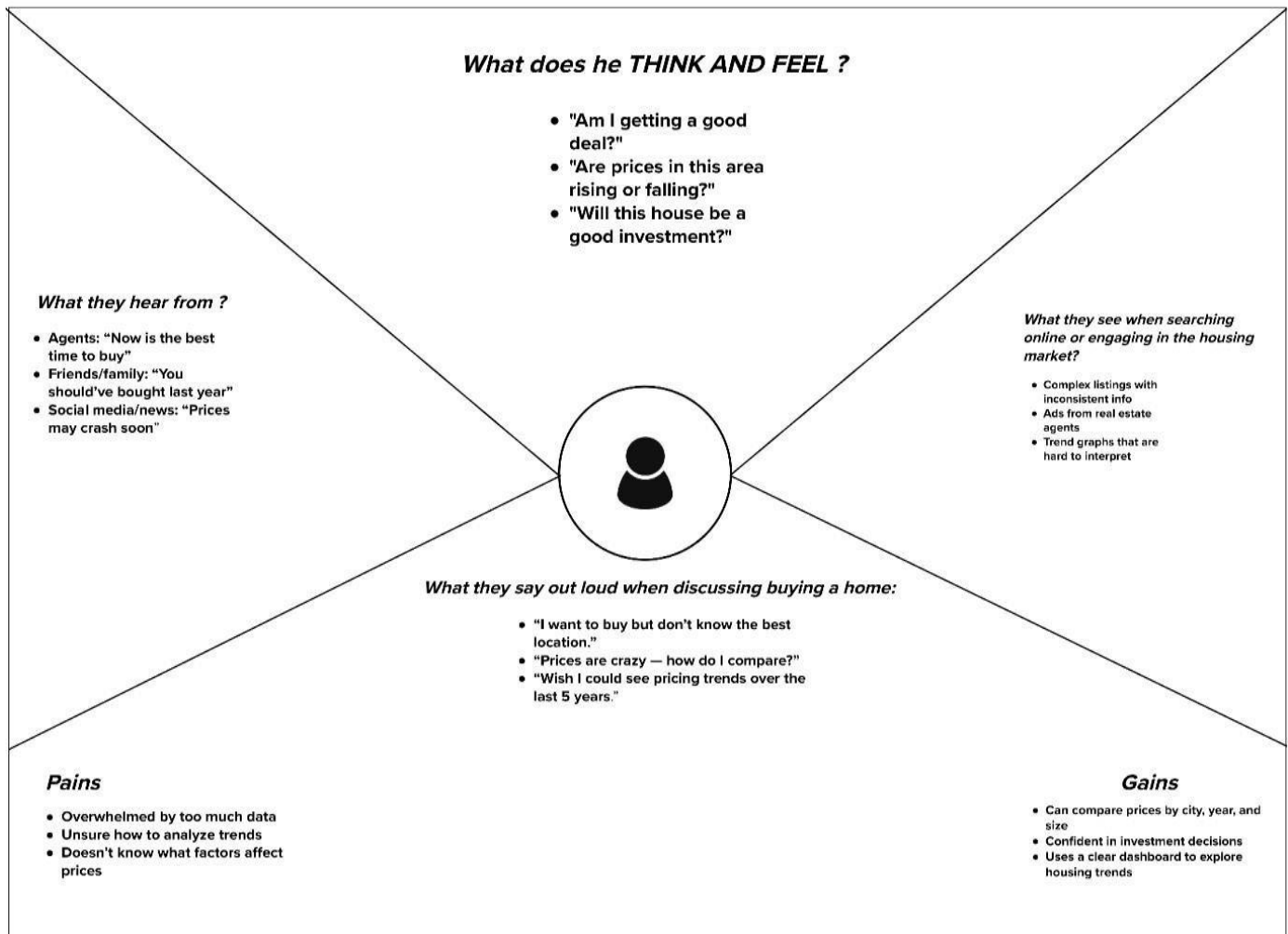
2. IDEATION PHASE

2.1 Problem Statement

| | | | | |
|----------------------------|---|---|---|---|
| I am (Customer) | → | A first-time homebuyer who wants to make an informed decision | A real estate investor looking for high-return properties | A real estate agent aiming to assist clients efficiently |
| I'm trying to | → | Find a home within my budget that meets my needs | Identify profitable properties based on price trends and key influencing factors | Provide accurate and insightful recommendations based on market data |
| But | → | The available market data is difficult to interpret and scattered across multiple sources | Existing datasets require extensive manual analysis and lack clear insights | The data is time-consuming to analyze and spread across various reports |
| Because | → | There is no centralized, easy-to-use tool that visualizes housing trends based on historical sales data | No interactive visualization tool allows me to compare property appreciation trends effectively | There is no comprehensive tool to aggregate and visualize pricing trends for quick insights |
| Which makes me feel | → | Confused and overwhelmed, making me hesitant to proceed | Frustrated and uncertain about making investment decisions | Less efficient, unable to provide quick, data-backed advice to clients |

| Problem Statement(PS) | I am (Customer) | I'm trying to | But | Because | Which makes me feel |
|-----------------------|------------------------|--|--|---|--|
| PS-1 | A real estate analyst | understand what features affect house prices | the data is too complex and scattered | I don't have a single dashboard that shows clear trends | frustrated and unsure about my decisions |
| PS-2 | A marketing strategist | target the right segment of buyers | I don't know what trends are | I can't link buyer behavior to house characteristics | ineffective and misaligned |
| | | | influencing sales | | |
| PS-3 | A company executive | make strategic investment decisions | I can't clearly see performance patterns | current reports lack visual clarity and interactivity | hesitant and data-blind |


2.2 Empathy Map Canvas



2.3 Brainstorming

Step-1: Team Gathering, Collaboration and Select the Problem Statement

template



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

⌚ 10 minutes to prepare
👥 1 hour to collaborate
👤 2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⌚ 10 minutes

Team gathering

No team members – this is a solo project. Pre-research will be done using online datasets and Tableau.

Set the goal

The goal is to analyze real estate data to uncover how features like location, square footage, and year built affect house sale prices.

Learn how to use the facilitation tools

I will use Tableau to build dashboards and visualize trends.

[Open article](#) →


1 Define your problem statement

Understanding housing market trends is challenging due to the volume and complexity of real estate data. This project aims to analyze how housing features—such as location, square footage, number of bedrooms, and year built— influence sale prices. Using Tableau, we will develop interactive dashboards and charts to visualize key patterns, trends, and anomalies.

⌚ 5 minutes

PROBLEM

How might we analyze how housing features influence sale prices?



Key rules of brainstorming

Be clear. Be specific. Welcome to brainstorming. Consider, question, brainstorm, and build on each other's ideas.

Stay in topic.

Encourage wild ideas.

Defer judgment.

Document insights.

Go for volume.

If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2 Brainstorm

Write down any ideas that come to mind that could address the problem statement.

⌚ 10 minutes

Idea 1

Use Zillow or Kaggle to find real estate datasets

Extract features: location, size, year built, no. of bedrooms

Clean data using Excel or Python if needed

Idea 2

Create a heatmap of average sale prices by location

Use scatter plot for square footage vs. price

Map view to show regional trends

Idea 4

Top section: KPIs (avg. price, total listings)

Middle: Interactive map & filters

Bottom: Trend line & scatter chart side by side

Idea 3

Add filters for year built, number of bedrooms

Enable selection by city or ZIP code

Add tooltips to show detailed info on hover

Idea 5

Highlight anomalies or surprising trends

Suggest insights for buyers/ investors

Create tabs - Story points to walk through analysis

TIP You can select a story view and hit the open all stories to select story to start group!

3 Group Ideas

Organize similar ideas into clear groups such as data sources, key features, visualizations, and dashboard design. Label each group with a short phrase describing its focus. If a group has too many ideas, split it into smaller, more specific categories for better clarity.

⌚ 20 minutes

TIP Add a brainstorming key to story notes to make it easier to reference insights and categorize important ideas as they emerge throughout.

Data Preparation

- Use Zillow/ Kaggle dataset- Clean data using Excel/Python- Handle missing values

Key Features to Analyze

- Square footage- Bedrooms- bathrooms- Year built- Location/ ZIP code

Visualization Techniques

- Map view of prices- Scatter plot (sq ft vs price)- Trend line (over years)

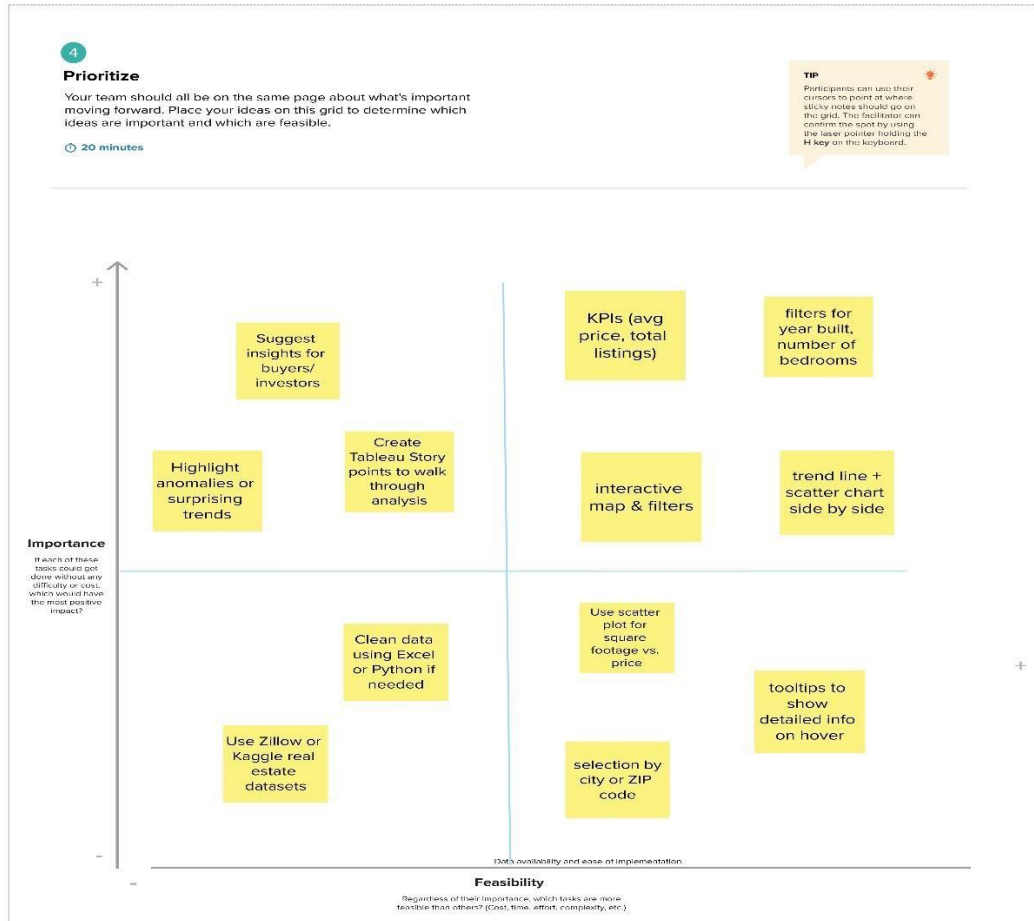
Dashboard Design

- Top KPIs section- Filters for year, bedrooms- Tooltip interactivity

Insights & Outcomes

- Compare old vs new homes- Highlight anomalies- Investment recommendations

Step-3: Idea Prioritization



3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

CUSTOMER JOURNEY MAP | LAXMI ESTATE: VISUALIZING HOUSING MARKET TRENDS

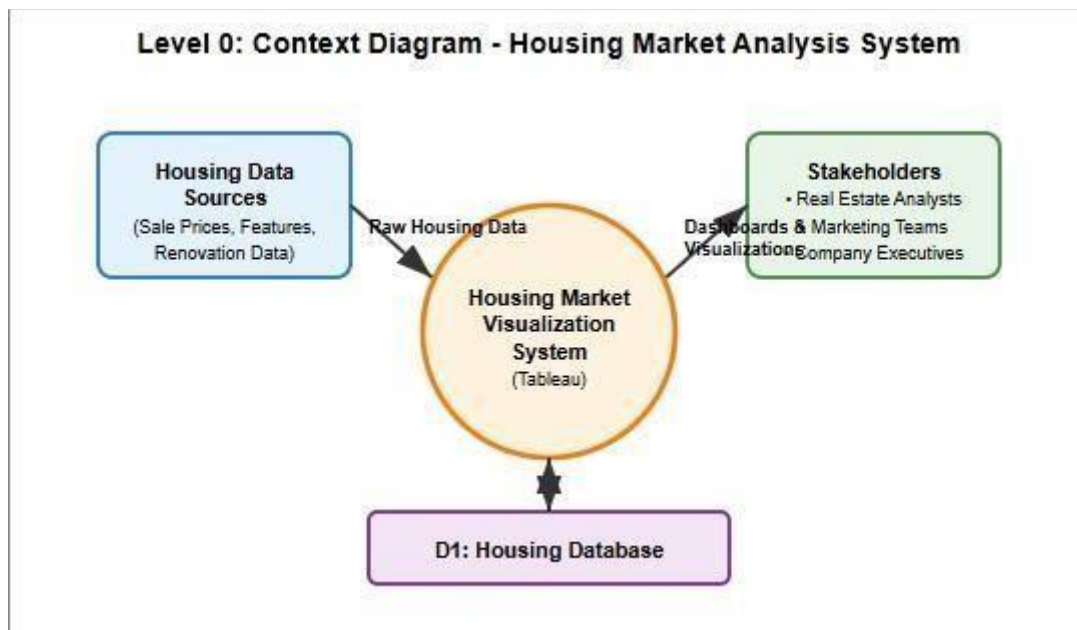
| ENTER | ENTICE | ENGAGE | IDENTIFY | EXTEND |
|--|--|--|---|--|
| <h3>Access Dashboard</h3> <p>Initial access to the Tableau: housing market dashboard</p> | <h3>Overview Data</h3> <p>Reviewing key housing market metrics</p> | <h3>Explore Renovation Impact</h3> <p>Analyzing a histogram of price distribution by years</p> | <h3>Identify Trends</h3> <p>Explore line charts tracking median price changes over time</p> | <h3>Apply Findings</h3> <p>Use insights to guide sales, pricing, and forecasting</p> |
| <h3>Steps</h3> | <p>View summary statistics, average prices and key figures</p> | <p>Use filters, hover tooltips, and interactive controls</p> | <p>Use time filters to spot market strategic planning</p> | <p>Export reports or present findings to stakeholders</p> |
| <h3>Goals</h3> | <p>Understand scope and scale of available housing data</p> | <p>Identify how renovations affect property prices</p> | <p>Recognize long-term price trends for strategic planning</p> | <p>Turn data into actionable business strategies</p> |
| <h3>Positive Experiences</h3> | <p>Clear and concise overview builds confidence in the data</p> | <p>Visualization reveals unexpected insights about renovation ROI</p> | <p>Clear timeline charts make trends easy to understand</p> | <p>Data-driven decisions improve competitiveness</p> |
| <h3>Negative</h3> | <p>Complex charts may be harder for new users to interpret</p> | <p>Detailed visual analysis supports pricing strategies</p> | <p>Conflicting trends between charts may cause uncertainty</p> | <p>Translating insights into actions may face operational challenges</p> |

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|------------------------------------|---|
| FR-1 | Data Import and Processing | Import housing dataset into Tableau |
| | | Data transformation and cleaning |
| | | Validate data quality and completeness |
| FR-2 | Interactive Dashboard Creation | Create overall data overview dashboard |
| | | Develop sales by renovation years histogram |
| | | Build house age distribution pie chart |
| | | Design grouped bar chart for house features |
| FR-3 | Data Visualization and Analytics | Generate average sales price calculations |
| | | Calculate total area metrics |
| | | Analyze renovation impact on pricing |
| | | Create age-based distribution analytics |
| FR-4 | Reporting and Export Functionality | Export visualizations as images/PDFs |
| | | Generate summary reports |
| | | Create stakeholder presentation materials |

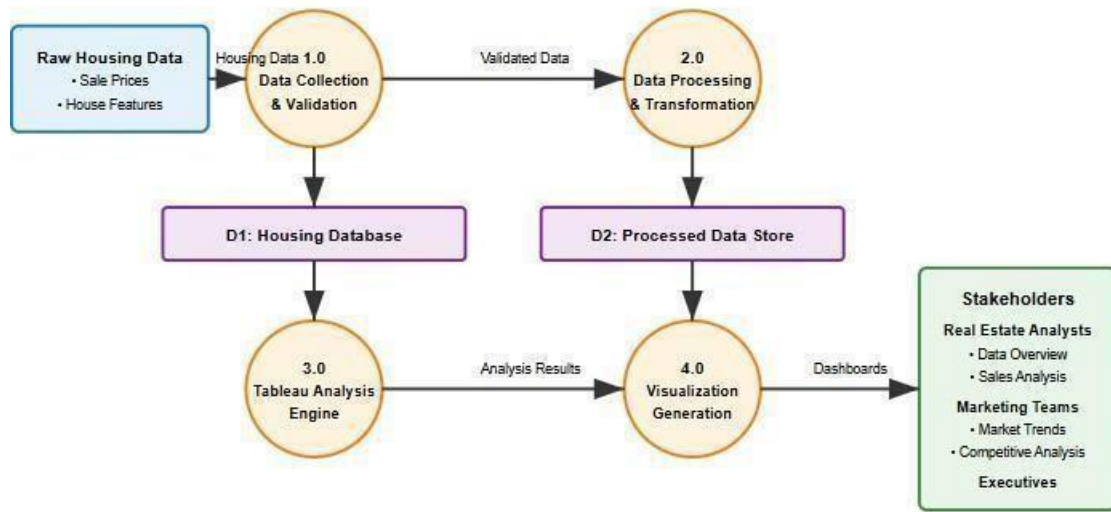
Non-functional Requirements:

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|---|
| NFR-1 | Usability | Dashboard should be intuitive and easy to navigate for real estate analysts, marketing teams, and executives with minimal training required |
| NFR-2 | Security | Ensure data privacy and secure access to housing market data with appropriate user authentication and authorization controls |
| NFR-3 | Reliability | System should provide consistent and accurate visualizations with 99.5% uptime and reliable data processing capabilities |
| NFR-4 | Performance | Dashboard should load within 3 seconds and handle interactive filtering smoothly even with large datasets containing thousands of housing records |
| NFR-5 | Availability | Tableau dashboard should be accessible 24/7 to stakeholders across different time zones with minimal scheduled maintenance downtime |
| NFR-6 | Scalability | Solution should accommodate growing datasets and additional visualization requirements as ABC Company expands its housing market analysis |

3.3 Data Flow Diagram



Level 1: Detailed Data Flow Diagram - Housing Market Analysis



Scenarios Supported:

1. Overall Data Overview - Summary statistics and key metrics
 2. Total Sales by Years Since Renovation - Histogram analysis
 3. House Age Distribution by Renovation Status - Pie chart visualization
 4. House Age by Bathrooms, Bedrooms, Floors - Grouped bar charts
- Data Flows: Raw Data → Validation → Processing → Analysis → Visualization → Stakeholders

User Stories

Use the below template to list all the user stories for the product.

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|---------------------|-------------------------------|-------------------|--|--|----------|----------|
| Real Estate Analyst | Data analysis & Visualization | USN-1 | As a real estate analyst, I can view the overall data overview dashboard to understand the dataset scale and key metrics | I can see count of housing records, average sales price, and total basement area | High | Sprint-1 |
| Real Estate Analyst | Renovation Impact analysis | USN-2 | As a real estate analyst, I can analyze total sales by years since renovation through histogram visualization | I can identify correlation between renovation timing and price ranges | High | Sprint-1 |

| | | | | | | |
|---------------------|------------------------|-------|---|--|--------|----------|
| Real Estate Analyst | House Age Distribution | USN-3 | As a real estate analyst, I can view house age distribution by renovation status through pie chart | I can assess age characteristics and renovation prevalence | High | Sprint-1 |
| Real Estate Analyst | Feature analysis | USN-4 | As a real estate analyst, I can analyze house age distribution by number of bathrooms, bedrooms, and floors | I can identify patterns in housing characteristics over time | High | Sprint-2 |
| Real Estate Analyst | Interactive dashboard | USN-5 | As a real estate analyst, I can access an interactive dashboard combining all visualizations | I can navigate between different views and filter data dynamically | Medium | Sprint-2 |

3.4 Technology Stack

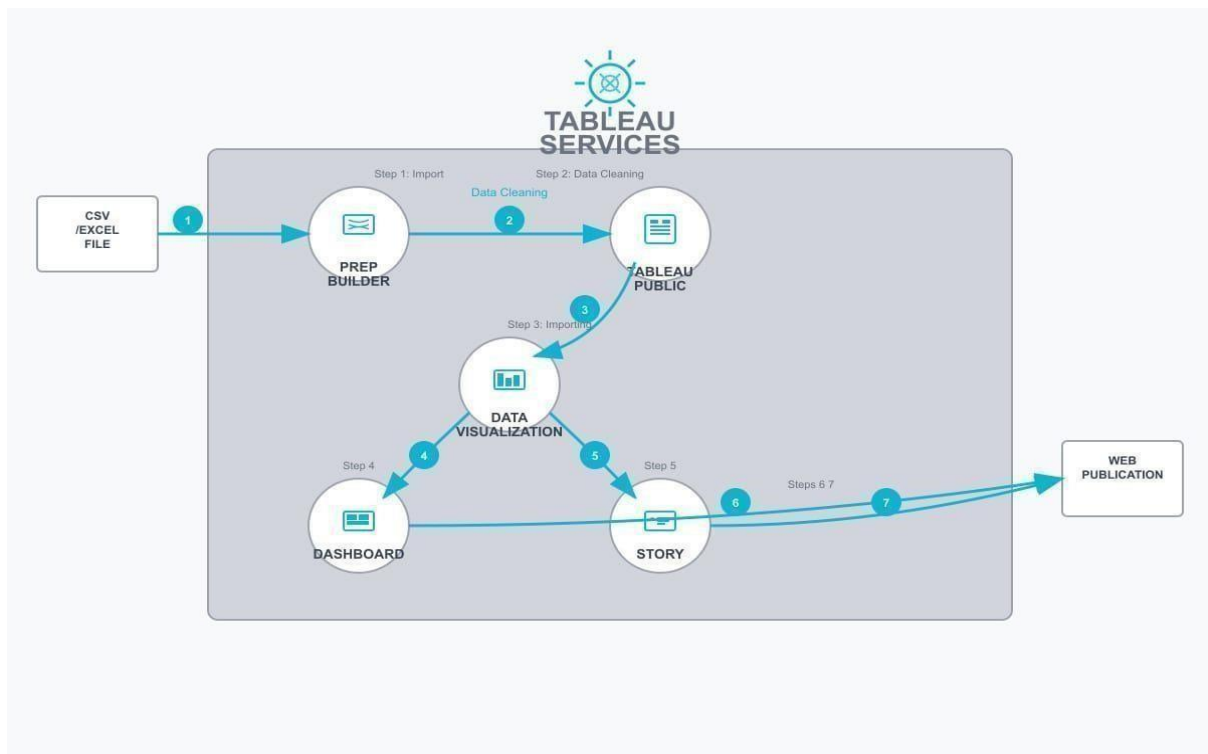
Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|-----------------------|--|--------------------------------------|
| 1. | User Interface | Web-based dashboards for viewing and interaction | Tableau Public |
| 2. | Application Logic-1 | Data preprocessing and transformation workflows | Tableau Prep Builder |
| 3. | Application Logic-2 | Interactivity using filters, parameters, and actions | Tableau Filters, Parameters, Actions |
| 4. | Dashboard/Story Logic | Logical flow of insights using story features | Tableau Story Feature |
| 5. | Data Source | Flat files used as housing market datasets | CSV |
| 6. | File Storage | Housing datasets stored locally | Local File System / Google Drive |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|---|----------------|
| 1. | Open-Source Frameworks | yes | Tableau Public |
| 2. | Security Implementations | N/A | N/A |
| 3. | Scalable Architecture | Can scale by publishing to Tableau Cloud for wider access | Tableau Public |
| 4. | Availability | Dashboards available online 24/7 | Tableau Public |
| 5 | Performance | Good \ Better performance | Tableau Public |

Technical Architecture:



4. PROJECT DESIGN

4.1 Problem Solution Fit

Problem-Solution fit canvas

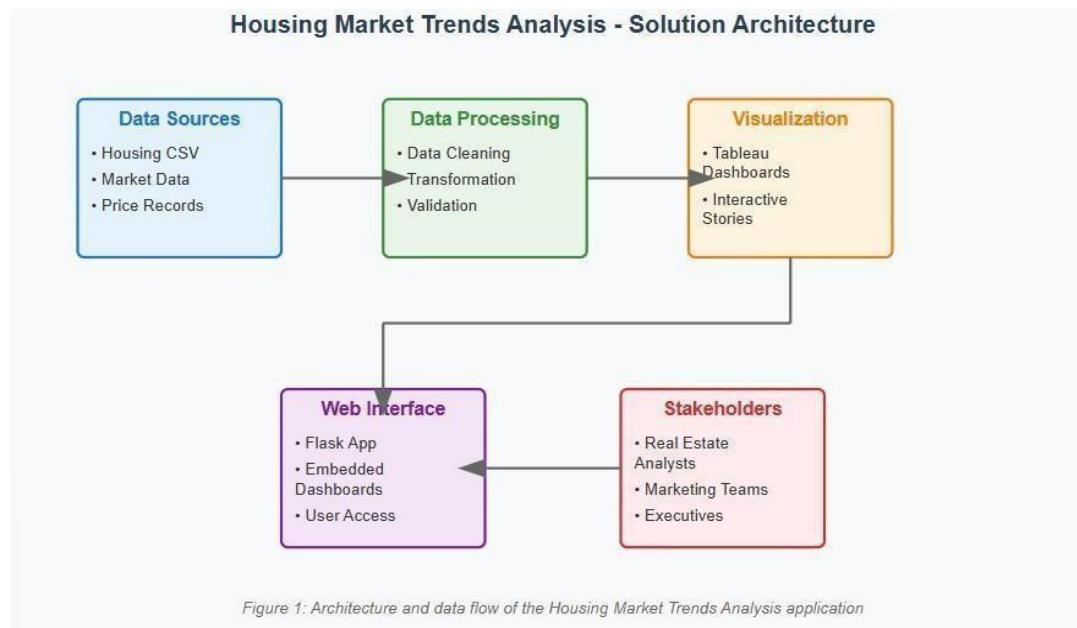
| | | |
|---|--|--|
| 1. CUSTOMER SEGMENT(S) First time home buyers, real estate investors, urban professionals (ages 25-48), brokers and real estate agents | 2. CUSTOMER CONSTRAINTS Limited knowledge of data tools Budget constraints Overload of conflicting information Distrust in brokers Limited time to explore options | 8. PROBLEM ROOT CAUSE Housing market data is scattered and unorganized Lack of visualization makes it hard to detect |
| 2. JOBS TO BE-DONE / PROBLEMS Understand housing price trends Compare property features and sale Identify good investment zones Make data-driven decisions about buying properties | 7. BEHAVIOUR Browse listings on real estate Compare prices manually Ask friends/family for opinions Use EMI calculators | 6. BEHAVIOUR Browse listings on real estate sites Compare prices manually Ask friends/family for opinions Watch property review videos |
| 3. TRIGGERS Rising rental prices Ads or deals on properties Peer/family recommendations Using clear charts as pie charts | YOUR SOLUTION An Interactive Tableau dashboard that visualizes housing data (sale price, size, type, local, trends) | 8. CHANNELS OF BEHAVIOUR 6.1 ONLINE Real estate websites (MagicBricks, 99- Tableau dashboards Kaggle datasets Youtube reviews 6.2 OFFLINE Property site visits Broker consultations |
| EMOTIONS. BEFORE / AFTER Before, Confused, unsure, overwhelmed, skeptical | | |
| EMOTIONS. BEFORE / AFTER | | |

4.2 Proposed Solution

| S.No. | Parameter | Description |
|-------|--|--|
| 1. | Problem Statement (Problem to be solved) | People struggle to understand how housing prices vary by location, room count, or size, making it hard to compare data and make informed decisions. |
| 2. | Idea / Solution description | The solution is an interactive Tableau dashboard that visualizes housing data using charts, maps, and filters, making complex trends easy to understand. |
| 3. | Novelty / Uniqueness | Unlike static reports, this solution offers dynamic, filterable visuals that users can interact with, giving personalized insights in real time. |
| 4. | Social Impact / Customer Satisfaction | It empowers homebuyers, sellers, and agents with clear, accessible data, leading to confident decisions and greater market transparency. |
| 5. | Business Model (Revenue Model) | Proposes a tiered subscription model with additional revenue streams. |
| 6. | Scalability of the Solution | Describes how the solution can grow with increased data, users, and market expansion. |

| | | |
|--|---|--|
| Problem Statement Problem Statement (Problem to be Solved): The housing market often lacks clarity regarding how property renovations impact sales prices over time. Buyers and sellers struggle to assess the return on investment for renovations due to the absence of clear data analytics. This limits effective decision-making and market efficiency. | 2. Idea/Initiative Description Our project addresses this issue by visualizing total sales in relation to the number of years since a house was renovated. Using Tableau, we created a histogram that displays how recently renovated properties correlate with various sales price ranges. This visualization enables stakeholders to identify patterns and trends in buyer preferences and renovation impact. | 3. Novelty/Uniqueness This solution stands out by offering an interactive, visual data analysis centered around the renovation timeline—a variable rarely explored in depth in traditional market reports. It brings actionable insights to the forefront using clear, user-friendly dashboards, making the data more accessible to both experts and laypeople. |
| 4. Social Impact / Customer Satisfaction: The solution empowers homebuyers with valuable insights into how renovation age affects home value, leading to more informed purchasing decisions. It also helps sellers and agents time renovations effectively to increase profits. Overall, it supports transparency, enhances consumer trust, and contributes to better housing policy and urban planning. | 5. Business Model (Revenue Model): The solution can be monetized through a subscription-based model targeting real estate agencies, property investors, and developers. Additional income streams include custom dashboard development, real-time market reporting, and integration services with existing property listing platforms or CRMs. | 6. Scalability of the solution: This model can be extended to include multiple variables such as location, square footage, number of bedrooms, or neighborhood crime rates. It can also scale geographically to analyze real estate markets across different cities or countries. With integration into national real estate databases, it can provide ongoing, large-scale market intelligence. |

4.3 Solution Architecture



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Product Backlog, Sprint Schedule, and Estimation

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|----------|-------------------------------|-------------------|---|--------------|----------|--------------|
| Sprint-1 | Data Collection & Extraction | USN-1 | As a user, I can collect housing market data from reliable sources, including prices, property types, and trend. | 2 | High | 1 |
| Sprint-1 | Data Preprocessing | USN-2 | As a user, I can preprocess data to clean and filter out unnecessary information, such as outliers, duplicates, or missing values | 3 | High | 1 |
| Sprint-2 | Data Visualization | USN-3 | As a user, I can visualize housing trends using charts, graphs, and heatmaps to understand the current market dynamics and pricing fluctuations | 3 | High | 1 |
| Sprint-2 | Interactive Dashboard | USN-4 | As a user, I can interact with a dashboard that displays live market trends, data filters, and performance insights for better decision-making | 2 | High | 1 |

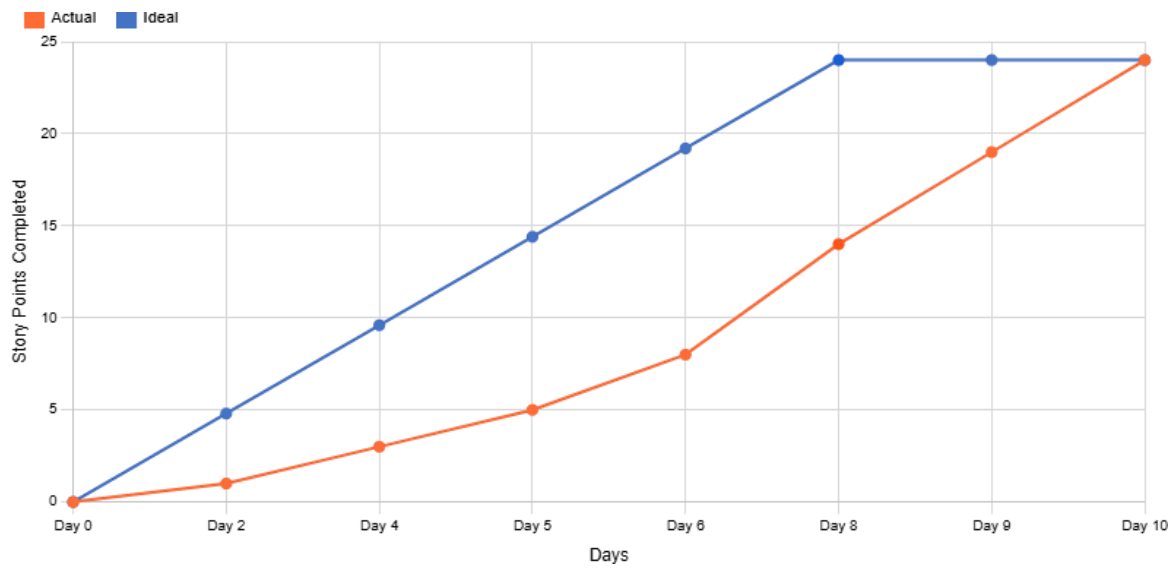
| | | | | | | |
|----------|--------------------------------|-------|--|---|--------|---|
| Sprint-3 | User Stories (Dashboard Views) | USN-5 | As a user, I can set custom views of the dashboard to save preferences for quick future reference (e.g., specific locations, budget, etc.) | 3 | Medium | 1 |
|----------|--------------------------------|-------|--|---|--------|---|

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|----------|-------------------------------|-------------------|--|--------------|----------|--------------|
| Sprint-3 | Web Integration | USN-6 | As a user, I can integrate the dashboard and data visualizations into a website for online accessibility and usability | 2 | Medium | 1 |

Project Tracker, Velocity & Burndown Chart

| Sprint | Total Story Points | Duration | Sprint Start Date | Sprint End Date (Planned) | Story Points Completed (as on Planned End Date) | Sprint Release Date (Actual) |
|----------|--------------------|----------|-------------------|---------------------------|---|------------------------------|
| Sprint-1 | 5 | 2 Days | 18 July 2025 | 19 July 2025 | 5 | 18 July 2025 |
| Sprint-2 | 5 | 3 Days | 21 July 2025 | 23 July 2025 | 5 | 22 July 2025 |
| Sprint-3 | 5 | 2 Days | 24 July 2025 | 25 July 2025 | 5 | 26 July 2025 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Burndown Chart



6. FUNCTIONAL AND PERFORMANCE TESTING

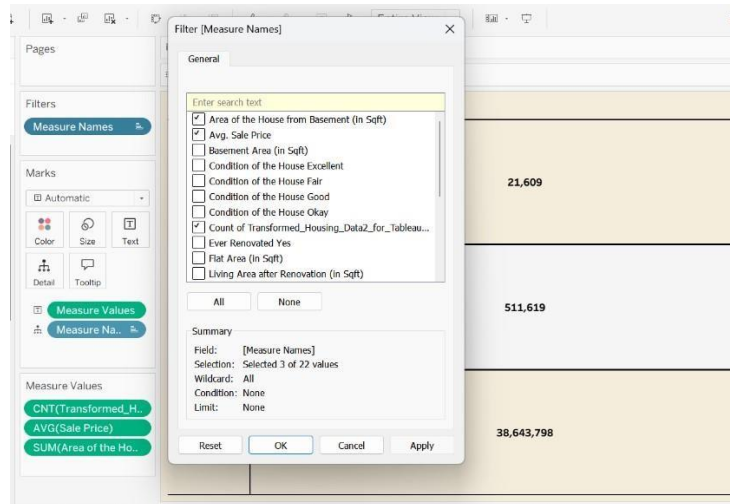
6.1 Performance Testing

Project team shall fill the following information in model performance testing template.

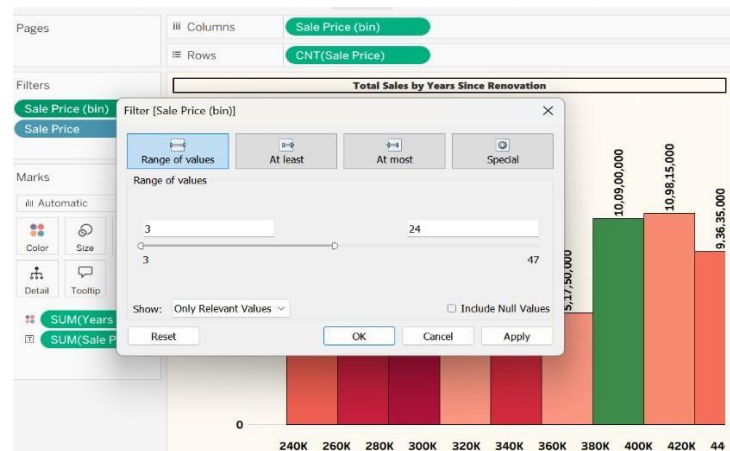
| S.No. | Parameter | Screenshot / Values |
|-------|---------------|--|
| 1. | Data Rendered | <div><div><div><div>1. Desktop - Work</div><div>File Edit View Help</div><div><div>Tableau Desktop Public Edition</div><div>Help Contents</div></div><div><div>Connections</div><div>Transformed_L1_2_for_Tableau</div></div><div><div>Files</div><div>1. Desktop - Work</div></div><div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. Desktop - Work</div><div>1. 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3. Utilization of Filters

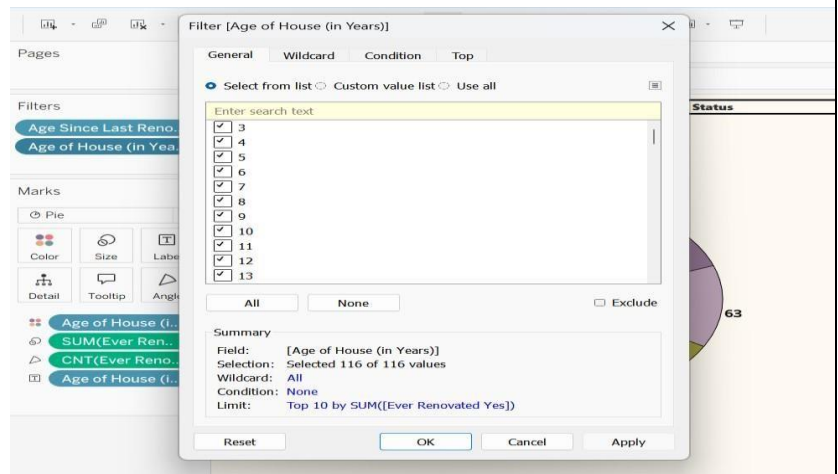
For scenario – 1



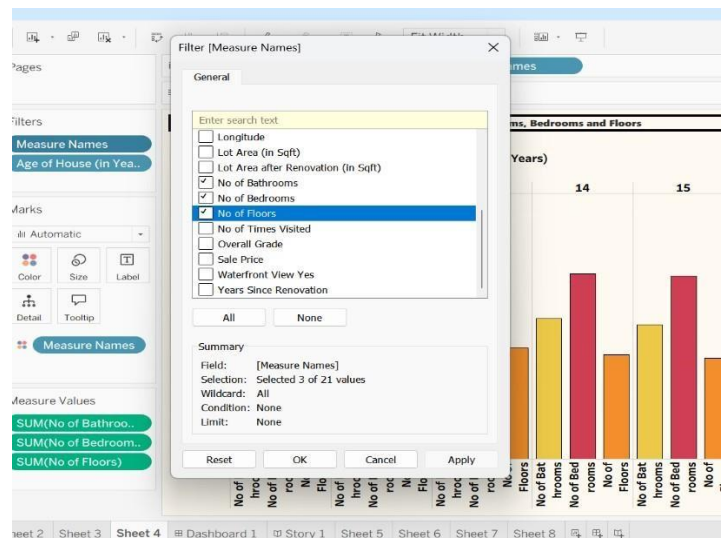
For scenario – 2



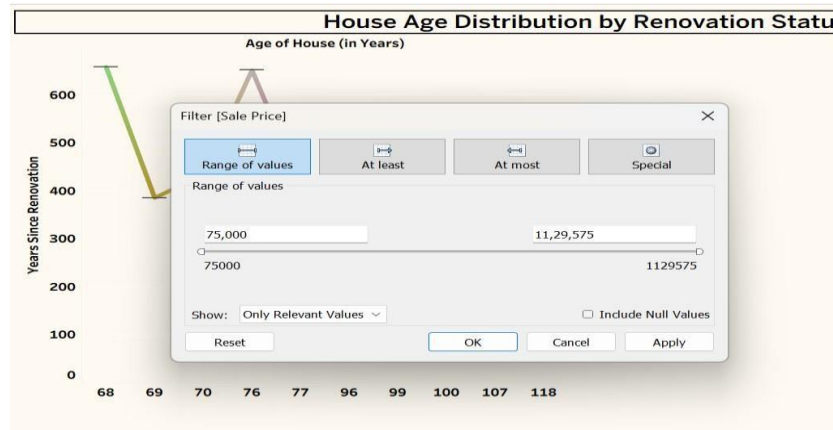
For scenario – 3



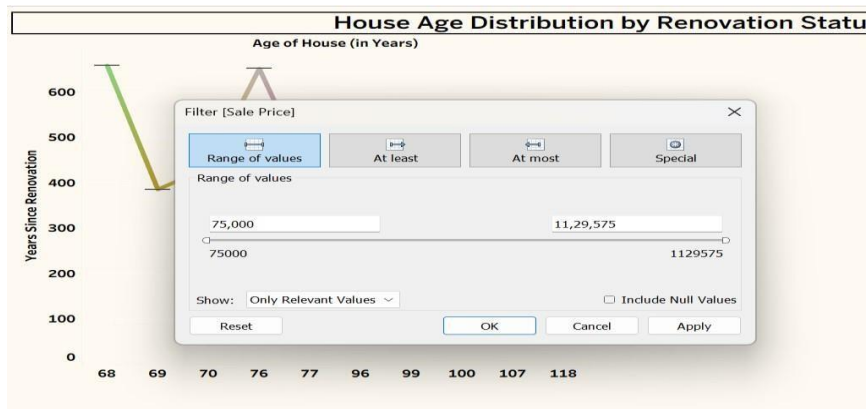
For scenario – 4



For scenario – 5



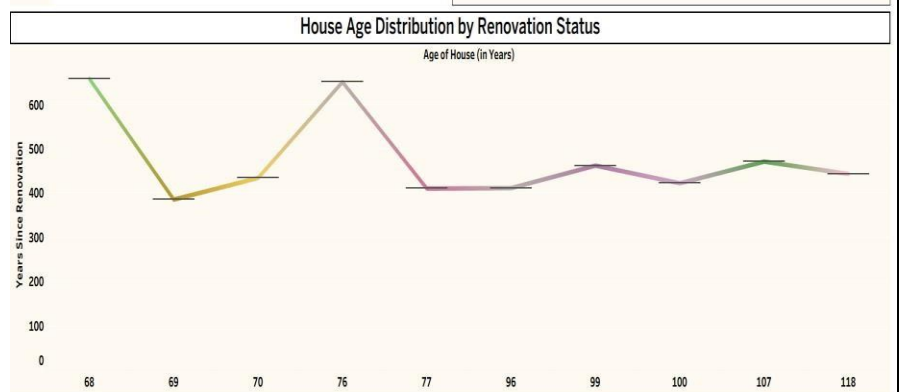
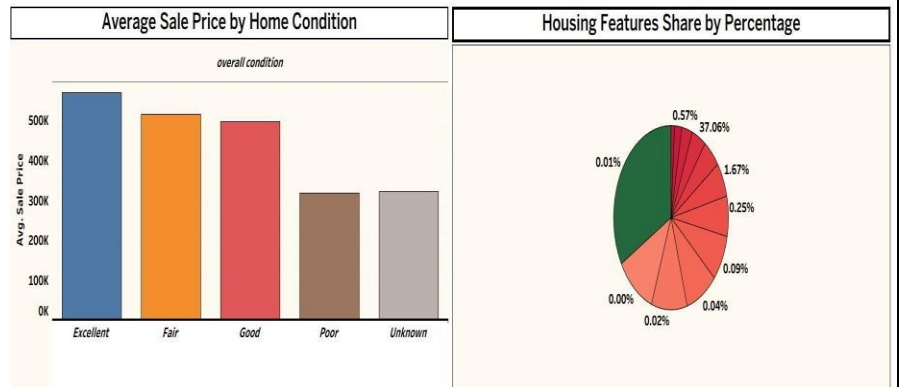
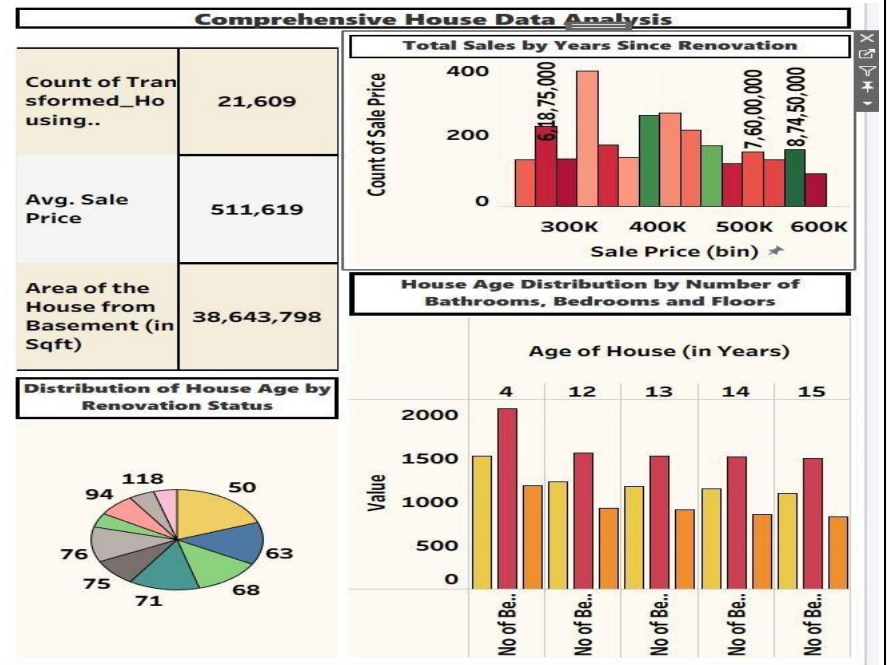
For scenario – 6

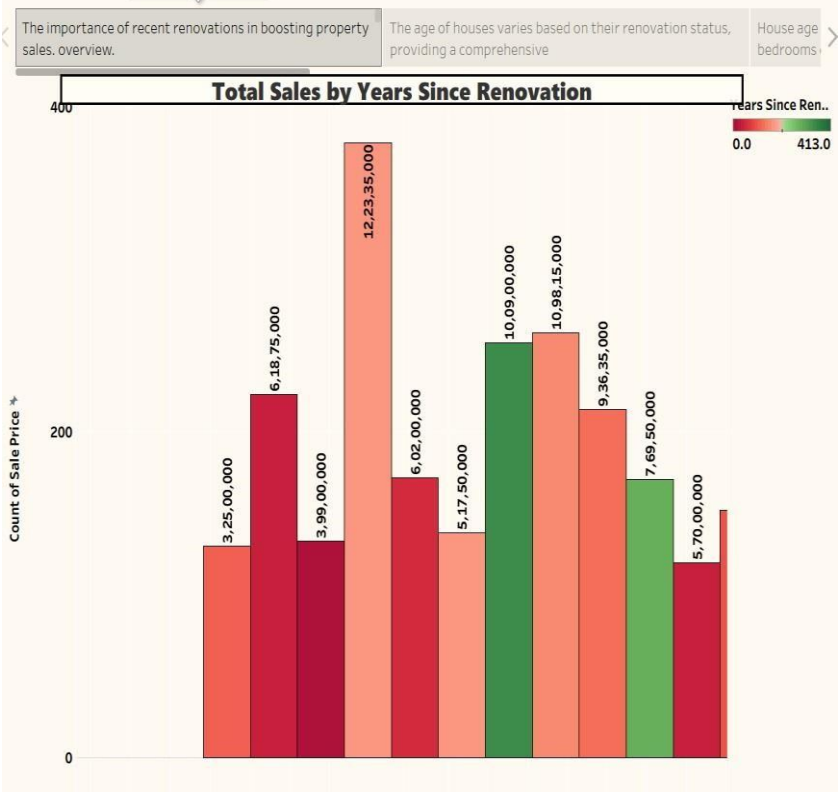


| | | |
|----|-------------------------|---|
| | | <div>For scenario – 7</div> <div><div>Housing Features Share by Percentage</div><div><div><div>Filter [No of Bedrooms]</div><div><div>Range of values</div><div>At least</div><div>At most</div><div>Special</div></div><div><div>Range of values</div><div>0</div><div>33</div><div>0</div><div>33</div></div><div><div>Show: Only Relevant Values</div><div><input type="checkbox"/> Include Null Values</div></div><div><div>Reset</div><div>OK</div><div>Cancel</div><div>Apply</div></div></div></div></div> |
| 4. | Calculation fields Used | <div><div>Distribution of House Age by Renovation Status</div><div><div>Age Since Last Reno</div><div><div>IF [Ever Renovated Yes]>0 THEN 'YES' ELSE 'NO' END</div><div>The calculation is valid.</div><div>3 Dependencies</div><div>Apply</div><div>OK</div></div><div><div>75</div><div>71</div><div>68</div></div></div></div> |

5. Dashboard design

No of Visualizations / Graphs – 4

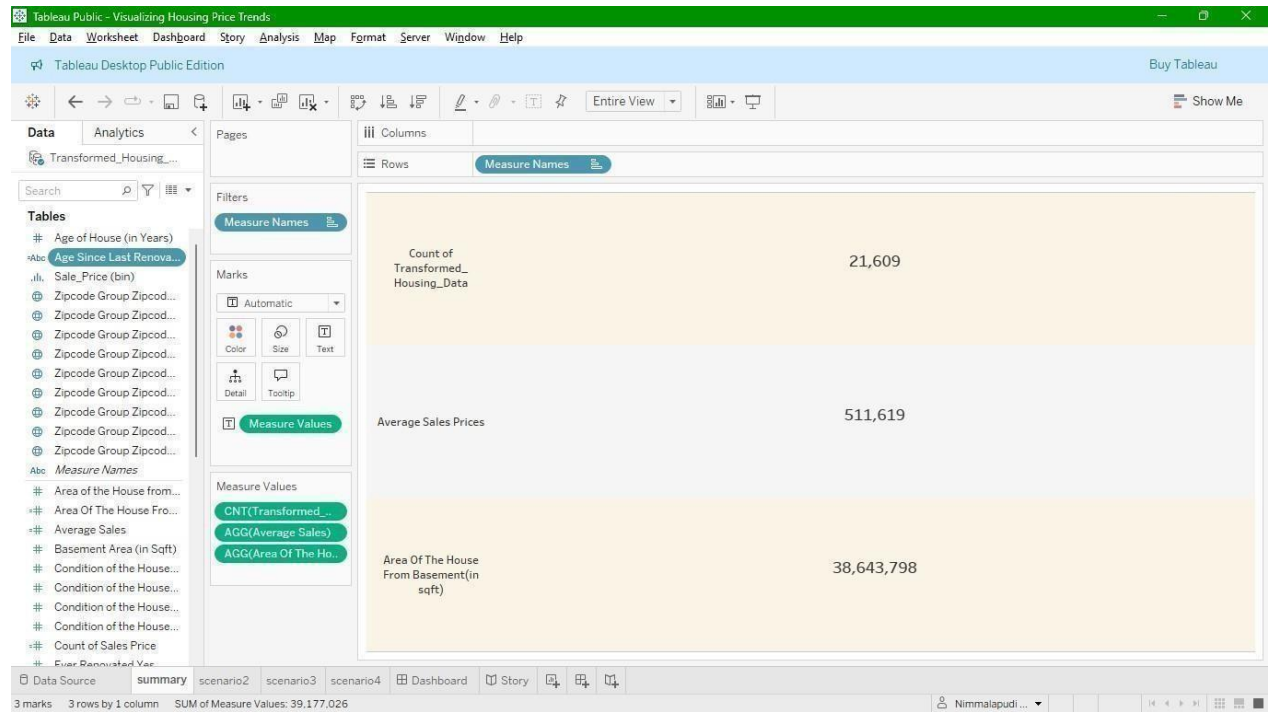




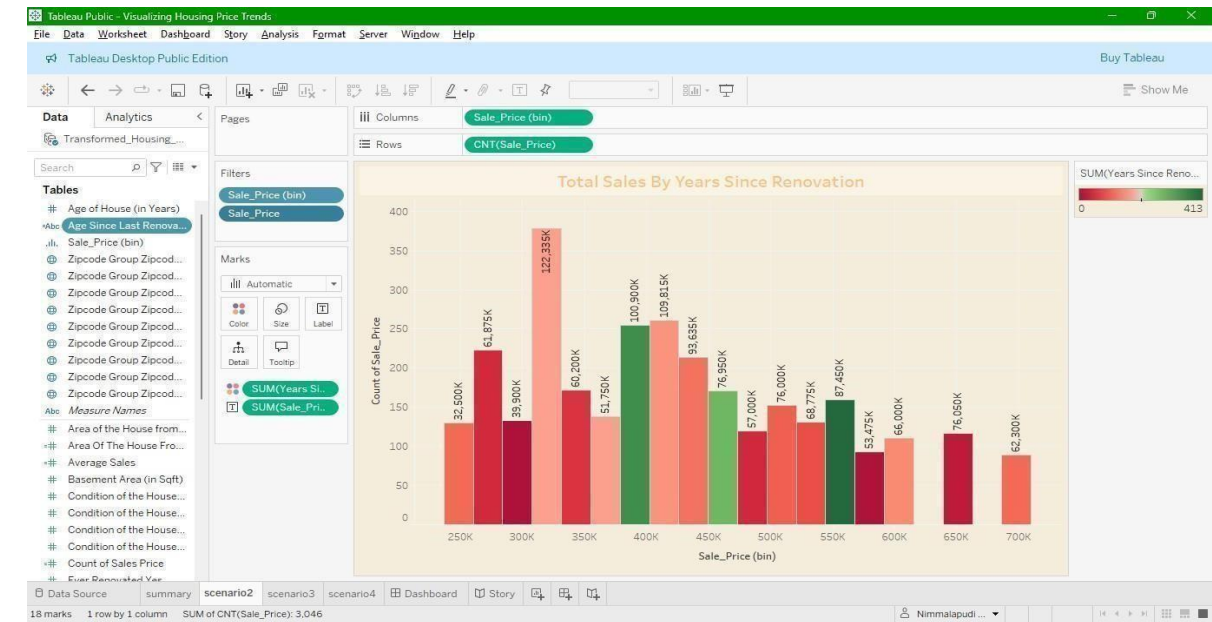
7. RESULTS

7.1 Output Screenshots

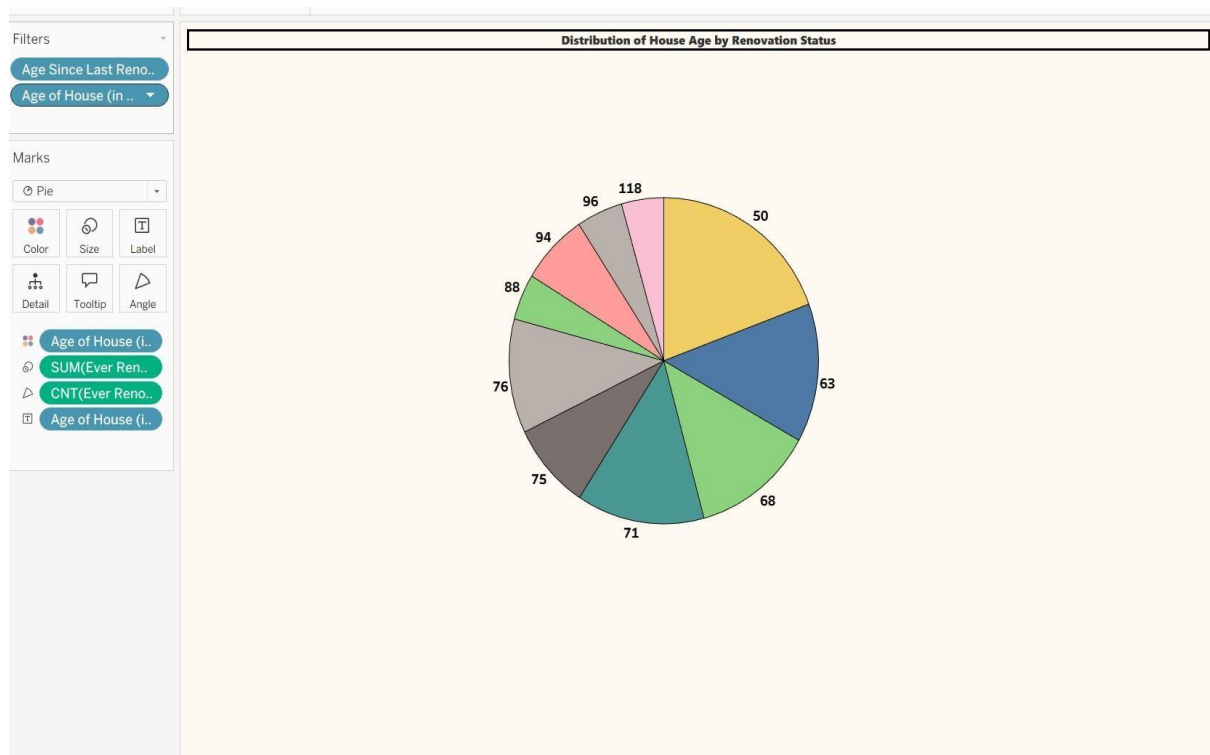
Scenario-1



Scenario-2



Scenario-3



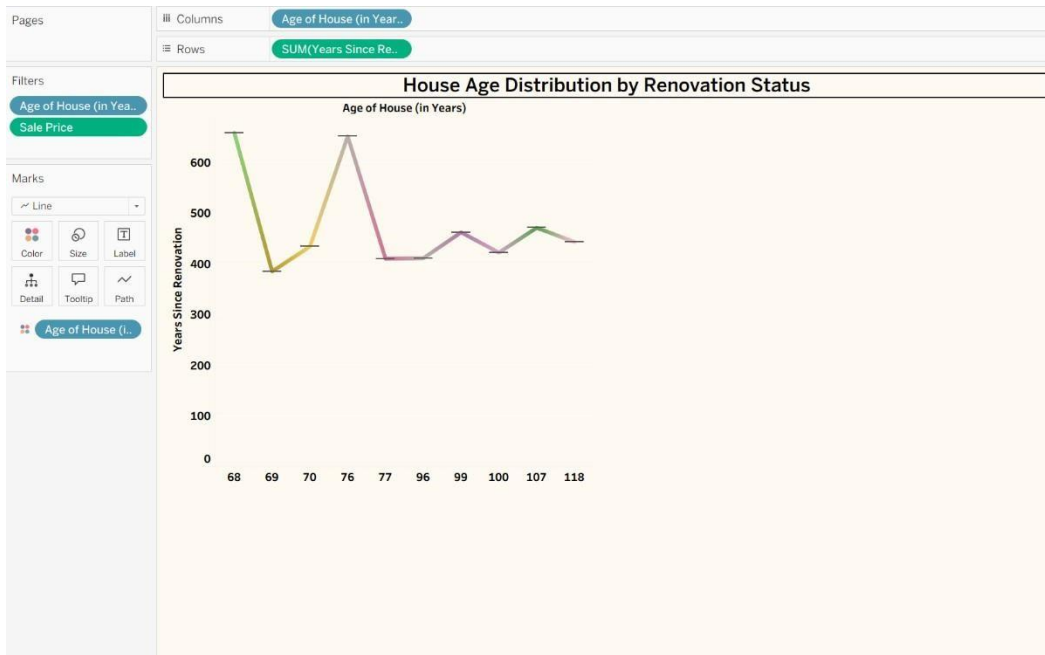
Scenario-4



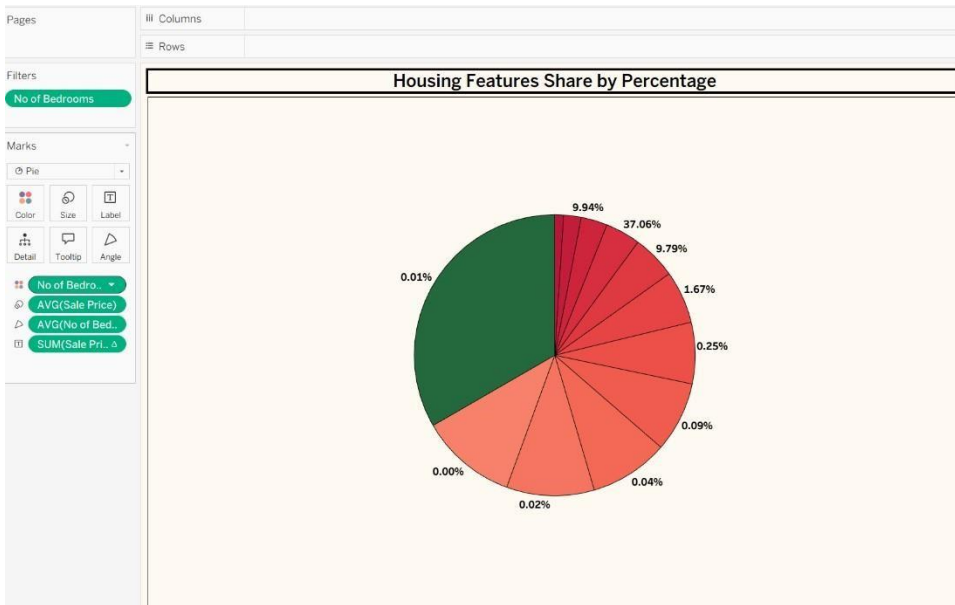
Scenario - 5



Scenario - 6

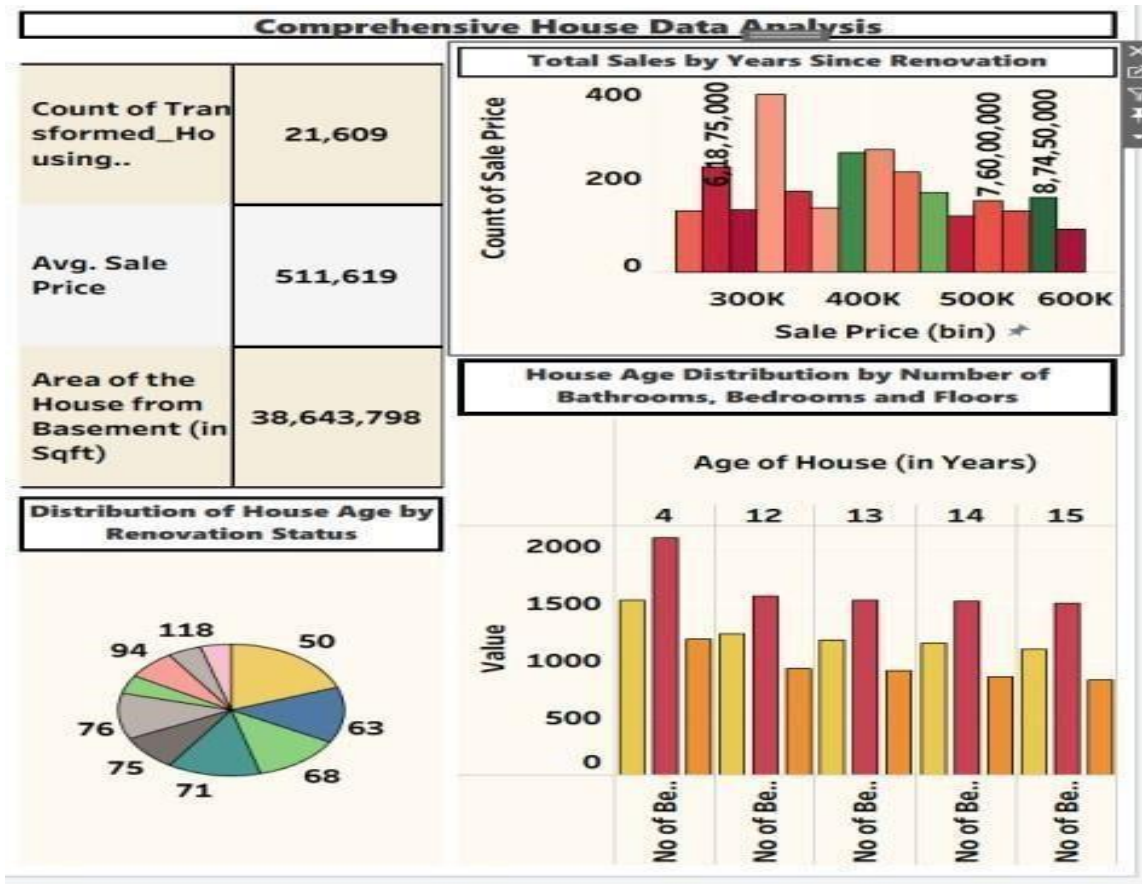


Scenario - 7

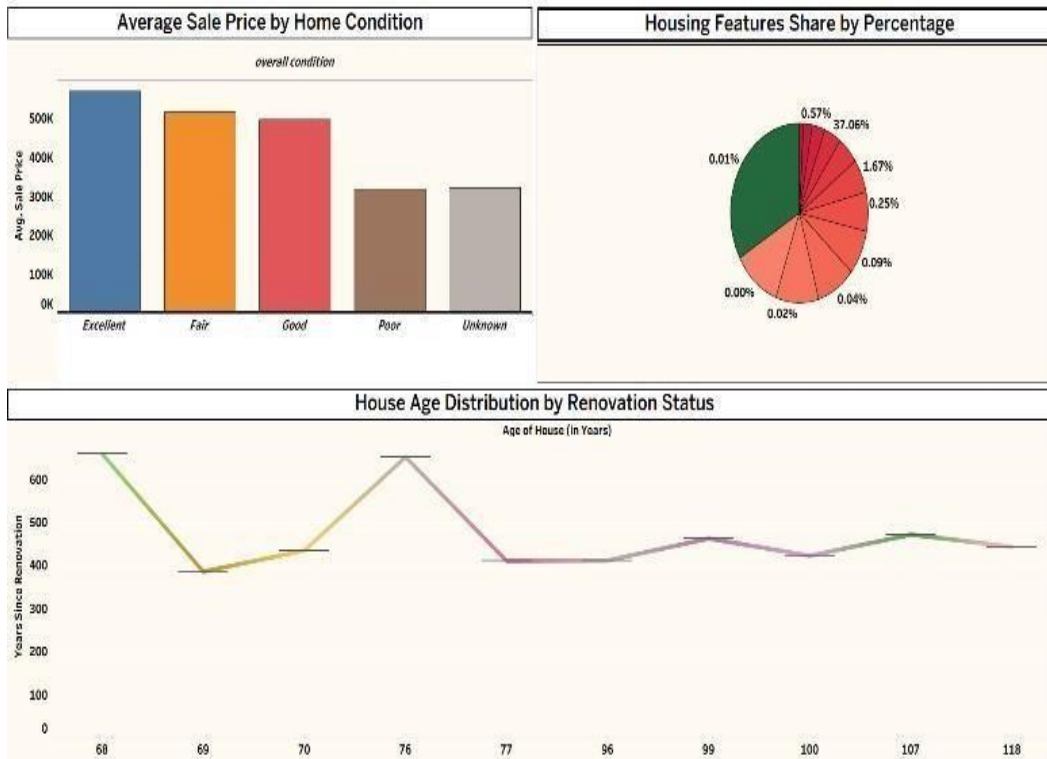


Dashboard

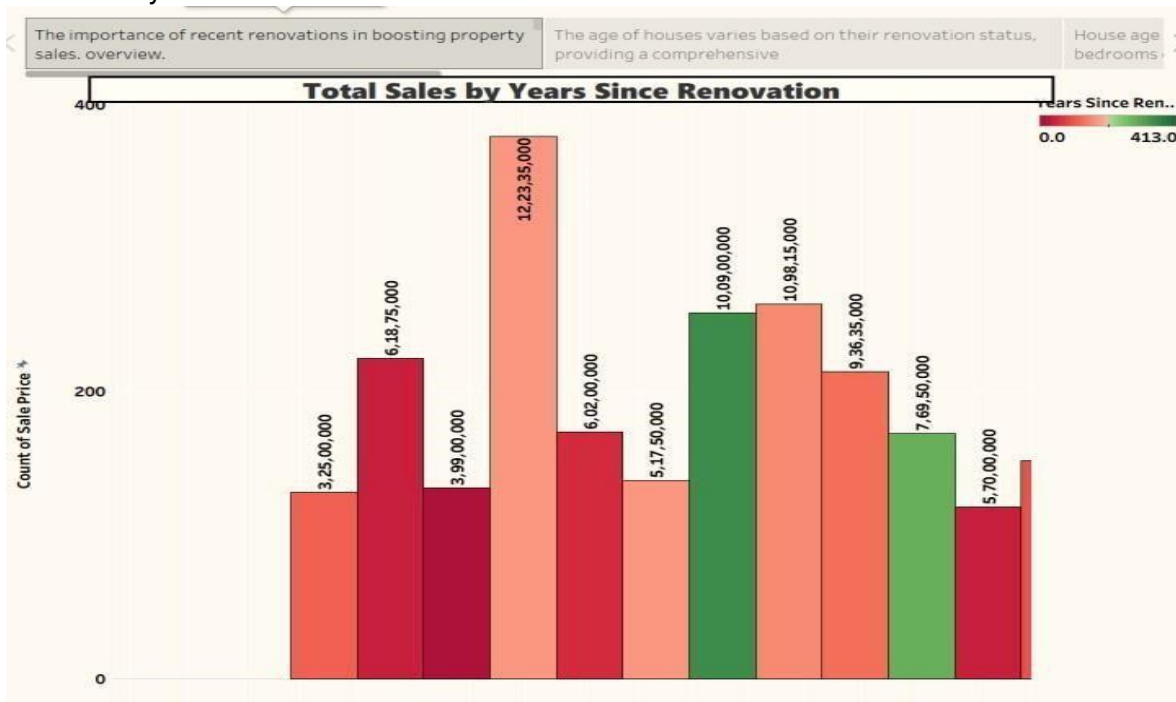
Dashboard 1



Dashboard 2



Story



8. ADVANTAGES & DISADVANTAGES

8.1 ADVANTAGES

1. **Visual Clarity:** Tableau enables intuitive, easy-to-understand visualizations for complex housing datasets.
2. **Interactive Dashboards:** Users can filter data dynamically based on features like renovations, age, or number of rooms.
3. **Business Insights:** Helps stakeholders identify trends and patterns that influence pricing strategies and buyer behavior.
4. **Time-Efficient:** Reduces manual analysis through automated and visual insights.
5. **Storytelling Capability:** Tableau's story feature allows presenting data as step-by-step narratives.
6. **Non-technical Accessibility:** Designed for business users with minimal technical skills.
7. **Improves Decision Making:** Enhances strategic planning through data-driven recommendations.
8. **Flexible Data Sources:** Supports a wide range of formats like Excel, CSV, and cloud-based data.

8.1 DISADVANTAGES

1. **No Predictive Modeling:** Tableau lacks built-in machine learning or forecasting capabilities.
2. **Dependence on Data Quality:** Inaccurate or unclear data can lead to misleading visualizations.
3. **Limited Data Cleaning:** Complex data transformations require external tools like Tableau Prep.
4. **Performance Issues:** Can slow down with very large datasets if not optimized properly.
5. **Story Limitations:** Tableau's story feature is static and not as flexible as interactive dashboards.
6. **Cost (for full version):** Tableau Creator licenses and cloud solutions may be expensive.
7. **No Native Real-Time Streaming:** Tableau is not ideal for real-time dynamic updates.
8. **Requires Training:** Users need time to become proficient in designing meaningful dashboards.

9. CONCLUSION

This project demonstrates the effective use of **Tableau** and **Tableau Prep Builder** to analyze and visualize housing market data in a meaningful and interactive way. By examining patterns related to **sale prices, renovations, house age, and structural features**, the project reveals key insights that support a deeper understanding of real estate trends.

Through a combination of **interactive dashboards** and **story-driven visualizations**, the project transforms raw datasets into easily interpretable insights. It proves how data visualization can **enhance clarity, support decision-making**, and provide a **structured narrative** around complex datasets. The approach used ensures the findings are accessible to both technical and non-technical users, making it a valuable asset for real estate data analysis.

10. FUTURE SCOPE

1. **Add Predictive Analytics:** Integrate machine learning to forecast housing prices.

2. **Use Real-Time APIs:** Connect to real estate APIs (like Zillow or Realtor.com) for live data updates.
3. **Enhance with Maps:** Use Tableau's map visualizations for geospatial housing trends.
4. **Deploy on Tableau Server:** Expand collaboration through server-hosted dashboards.
5. **Include External Data:** Add economic, demographic, or regional data to enrich insights.
6. **Mobile Dashboards:** Optimize dashboards for mobile accessibility.
7. **Automated Data Refresh:** Schedule regular updates from connected data sources.
8. **Multi-User Interaction:** Enable tailored views for different user types like analysts, buyers, or planners.

11. APPENDIX

Dataset Link :

<https://www.kaggle.com/datasets/rituparnaghosh18/transformed-housing-data-2>

Project GitHub Link :

<https://github.com/Ronak504/visualizing-housing-market-trends-and-analysis-of-sales-price-and-features.git>

project Demo link

https://drive.google.com/file/d/1cOXqUSoql_i7vWGMjHf9OLH3OVDO1cWp/view?usp=drive_link