

Project Report on

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

1. INTRODUCTION:

1.1 Project Overview –

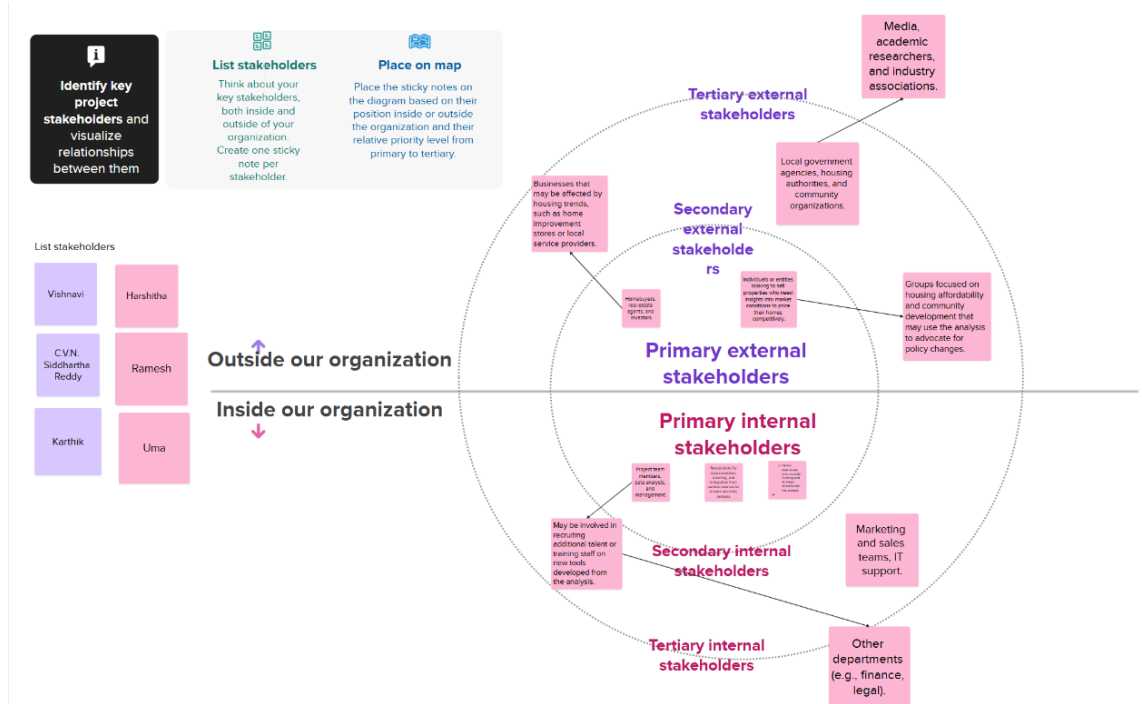
Utilizing Tableau's powerful visualization capabilities, the project seeks to uncover trends, patterns, and insights that can inform stakeholders, including buyers, sellers, and real estate professionals. By leveraging data-driven visualizations, the project will facilitate a deeper understanding of how different factors, such as neighborhood, property size, and condition, influence sale prices, ultimately aiding in informed decision-making within the housing market.

1.2 Purpose –

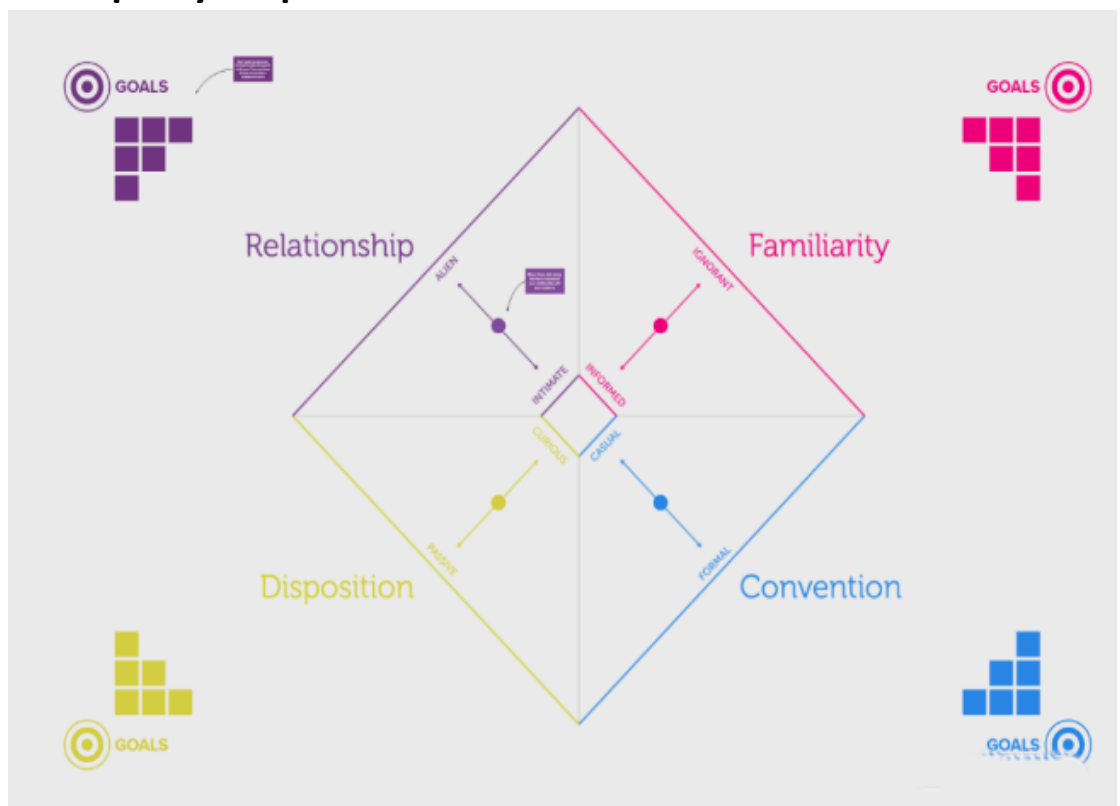
The purpose of the project "Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau" is to analyze the relationships between sale prices and property features, identify trends and patterns in the housing market, support data-driven decision-making for stakeholders, enhance understanding of market dynamics, and facilitate effective communication through engaging visualizations, ultimately empowering users to make informed real estate decisions.

2. IDEATION PHASE:

2.1 Brainstorming-



2.2 Empathy Map Canvas –



2.3 Problem Statements –

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	First-time homebuyer	Find an affordable starter home	Prices keep rising, and listings sell too fast	Limited inventory + high competition	Overwhelmed and anxious
PS-2	Growing family	Upgrade to a larger home	Mortgage rates are too high, and bigger homes are out of budget	Inflation + stagnant wages	Frustrated and stuck

3. REQUIREMENT ANALYSIS:

3.1 Customer Journey map –

Housing Trends Analysis Insights					
	AWARENESS	CONSIDERATION	EVALUATION	DECISION	PURCHASE
OBJECTIVES	Research housing market trends	Explore different neighborhoods and properties	Analyze property values and market trends	Shortlist properties and schedule viewings	Make an offer and negotiate terms
NEEDS	Homebuyers need access to reliable and up-to-date information on housing market trends to make informed decisions.	They require user-friendly tools that allow for easy visualization and comparison of properties and market data	Buyers seek personalized recommendations based on their preferences and budget to narrow down their options effectively.	They need educational resources and support to navigate the complexities of the homebuying process confidently.	Homebuyers require transparency in transactions, including clear communication about costs and property histories.
FEELINGS	Homebuyers feel curious yet overwhelmed by the vast amount of information available about the housing market.	They experience excitement mixed with anxiety as they explore different neighborhoods and properties.	Buyers feel informed but anxious about making the right choice based on market trends and property values.	They experience a blend of confidence and stress as they shortlist properties and navigate negotiations.	Homebuyers feel nervous yet hopeful as they make offers and finalize the purchase of their new home.
BARRIERS	Homebuyers encounter information overload and conflicting data that make it difficult to discern reliable market insights.	They face challenges in finding trustworthy sources and relevant data to evaluate different neighborhoods and properties.	Buyers struggle with a lack of clarity on future market conditions, making it hard to assess property values accurately.	They experience pressure from competition and time constraints, which can lead to rushed decisions and increased stress.	Homebuyers confront complex paperwork and fear of overpaying, creating uncertainty during the negotiation process.

LET'S END THE SESSION WITH ACTION ITEMS	
ACTION ITEM	POINT PERSON
Develop a centralized resource hub for market insights	Marketing Team
Create an intuitive property comparison tool	Product Development Team
Implement predictive analytics for property values	Data Analytics Team
Implement predictive analytics for property values	Real Estate Agents

3.2 Solution Requirement –

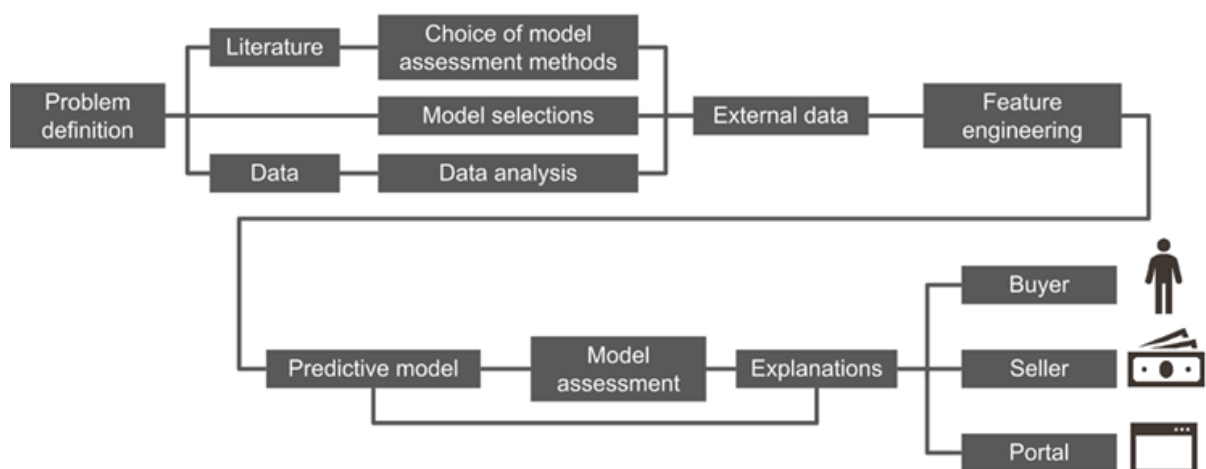
Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR - 1	Data Collection	Collect sale price data through APIs or web scraping.
FR - 2	Data Cleaning and Preparation	Clean data using scripts or Tableau Prep for analysis

Non-Functional Requirements –

NFR No.	Non-Functional Requirement	Description
NFR – 1	Usability	The dashboard should be intuitive and easy to navigate for users of all skill levels.
NFR- 2	Security	Ensure that user data and sensitive information are protected through encryption and secure access controls.

3.3 Data Flow Diagram –

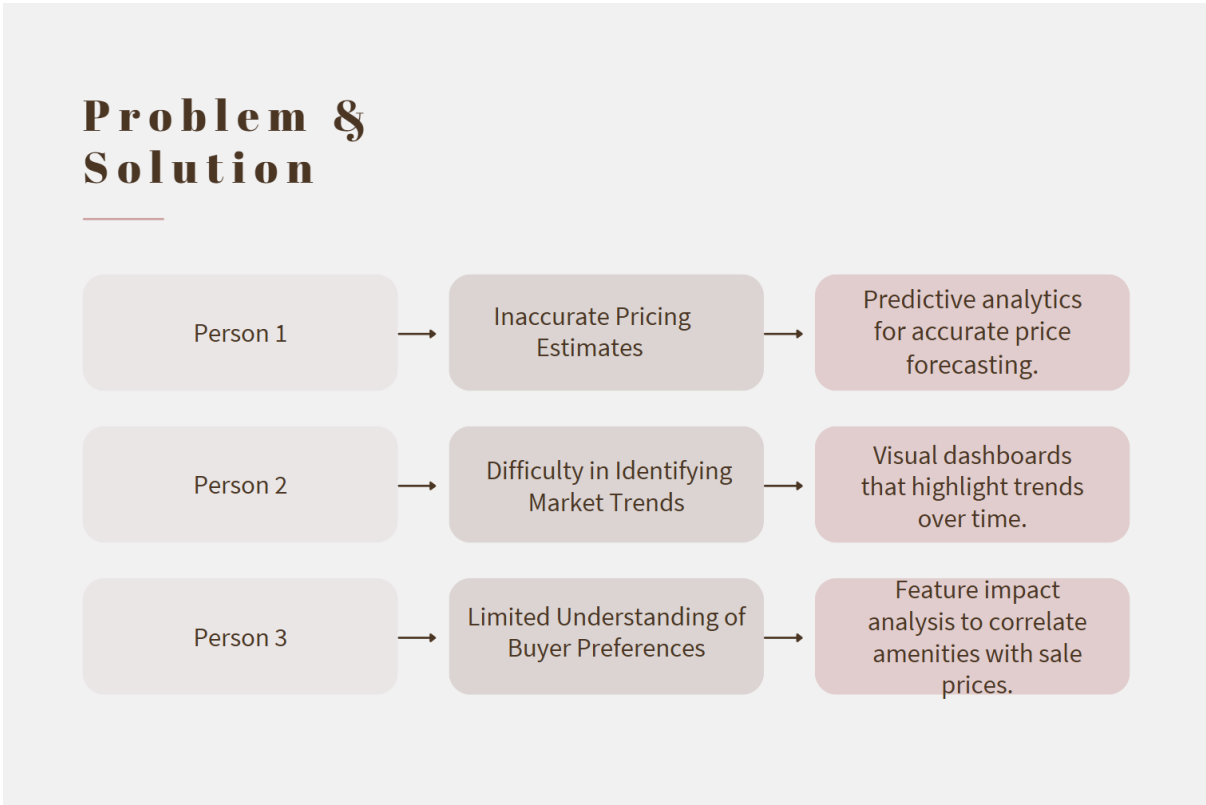


3.4 Technology Stack –

Component	Description	Technology
Data Source	Collects housing market data from various sources	SQL, APIs
Reporting	Generates reports for stakeholders	Tableau, Power BI

4 PROJECT DESIGN PHASE:

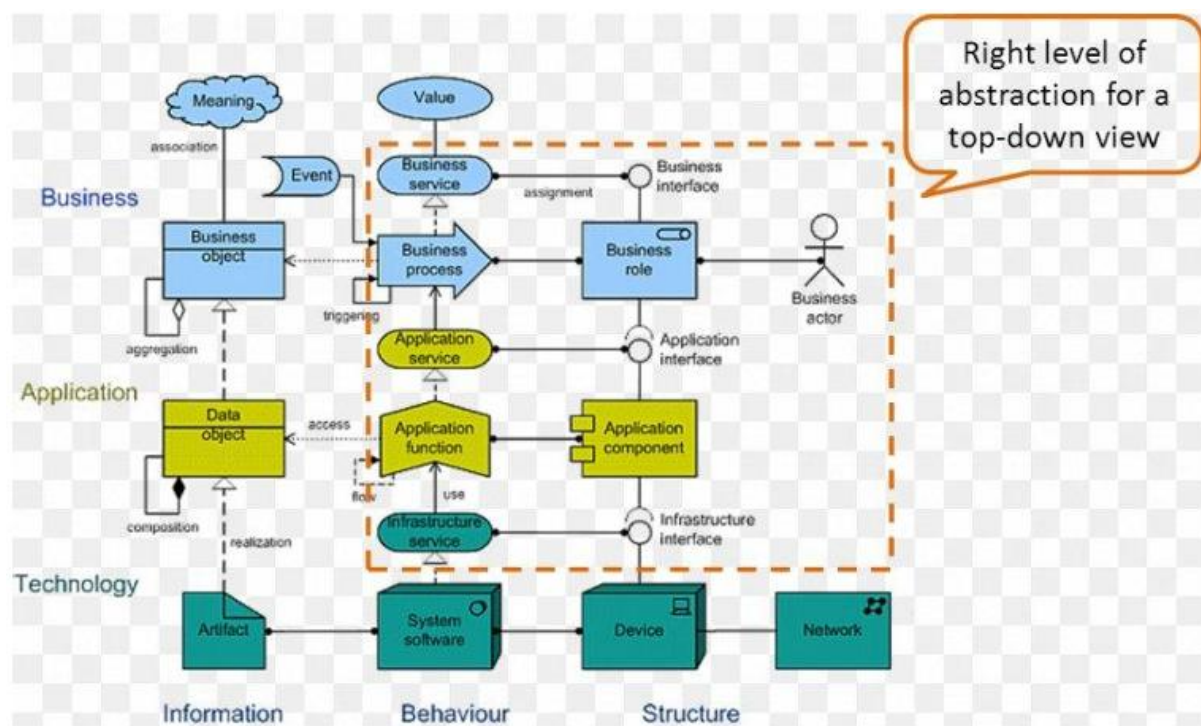
4.1 Problem Solution Fit –



4.2 Proposed Solution –

SNO.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Difficulty in interpreting complex housing market data to identify price patterns, feature preferences, and regional trends for informed real estate decisions.
2.	Idea / Solution description	Interactive Tableau dashboards that visually correlate sale prices with property features, location data, and temporal trends through dynamic filters and geospatial mapping.

4.3 Solution Architecture –



5 PROJECT PLANNING & SCHEDULING:

5.1 Project Planning –

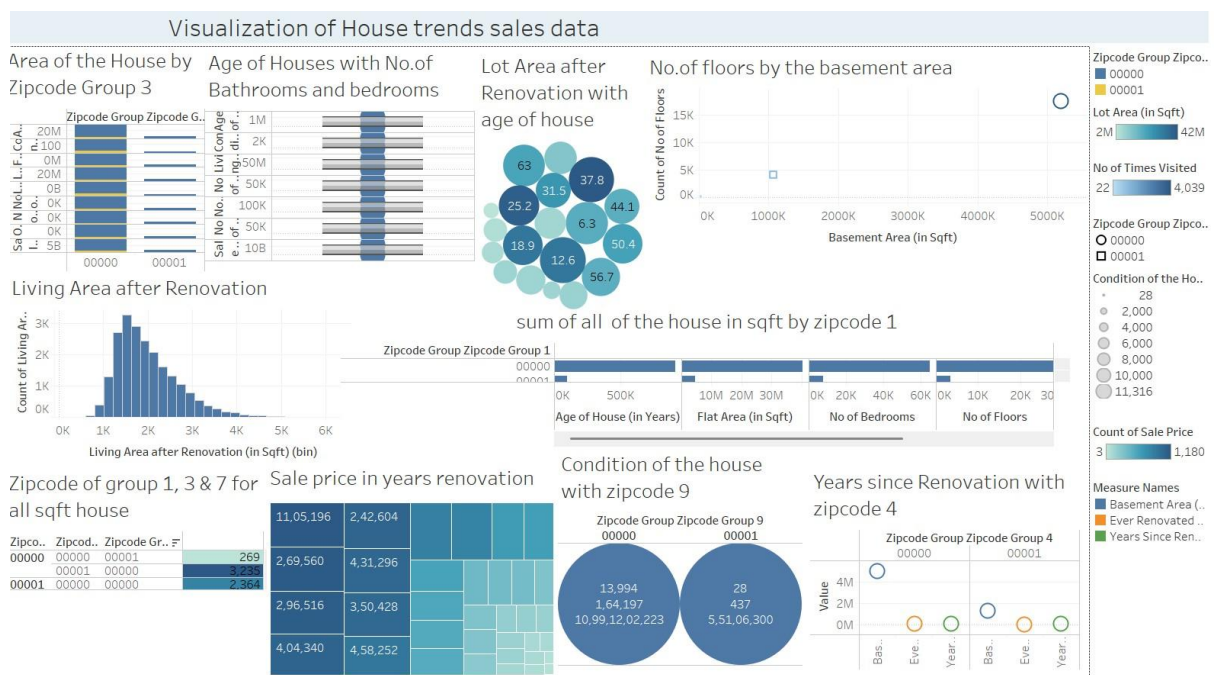
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint 1	Data Collection and Preparation	US 1	Gather housing market data from various sources	2	High	Member A, B & C
Sprint 2	Analysis and Reporting	US 2	Analyze trends and generate insights from visualizations	1	Medium	Member A, B & C

6 FUNCTIONAL AND PERFORMANCE TESTING:

6.1 Performance Testing –

S.NO.	Parameter	Screenshot/Values
1	Data Visualization	1
2	Story Design	10

7 RESULTS:



8. ADVANTAGES & DISADVANTAGES:

1. Data-Driven Insights: The project provides valuable insights into housing market trends, enabling stakeholders to make informed decisions based on comprehensive data analysis and visualizations.	1. Data Limitations: The accuracy of the analysis is dependent on the quality and completeness of the underlying data; missing or outdated information can lead to misleading conclusions.
2. Enhanced Understanding: By visualizing complex data, the project simplifies the interpretation of market dynamics, helping users identify patterns and opportunities in the housing market.	2. Complexity of Factors: The housing market is influenced by numerous external factors (e.g., economic conditions, government policies) that may not be fully captured in the analysis, potentially oversimplifying the insights derived.

9. CONCLUSION:

In conclusion, the project "Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau" successfully highlights the intricate relationships between sale prices and various property features, providing stakeholders with valuable insights into market dynamics. Through the use of engaging visualizations, the project not only enhances understanding of housing trends but also empowers users to make informed decisions in real estate transactions. While acknowledging the limitations of data quality and the complexity of external factors influencing the market, the findings contribute significantly to the ongoing discourse on housing market analysis and strategic planning.

10. FUTURE SCOPE:

1. Integration of Additional Data Sources:

Expanding the analysis to include economic indicators, demographic trends, and regional developments to provide a more comprehensive understanding of the housing market dynamics.

2. Incorporation of Predictive Analytics:

Utilizing machine learning techniques to forecast future market trends and property values, enhancing the project's ability to provide actionable insights for stakeholders.

3. Enhanced Interactivity and User Engagement:

Developing interactive features that allow users to customize their analyses and visualizations, increasing usability and engagement for a wider audience in the real estate sector.

11. APPENDIX:

Dataset Link -



Transformed_Housing_Data2.csv



Tableau public.txt