



Smart
Internz



GOVERNMENT ARTS & SCIENCE COLLEGE

DHARMAPURI – 5

III – B.Sc Mathematics (2023-2024)

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Analysing Housing Prices in Metropolitan Areas of India

Introduction :

- **1.1 Overview**

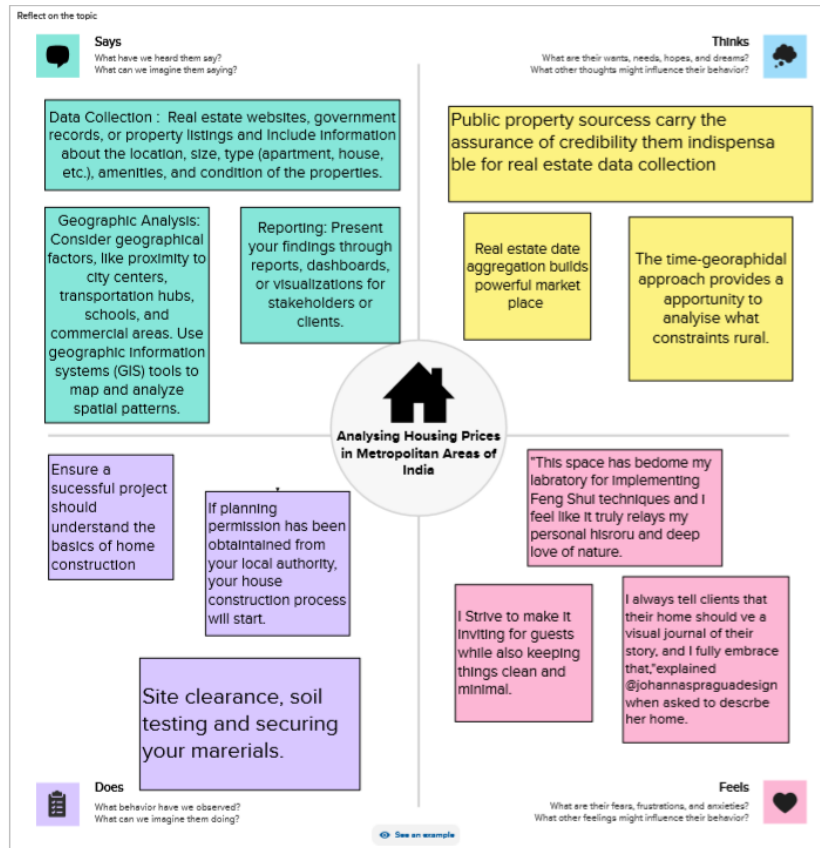
House price prediction in a metropolitan city in India is a valuable solution for potential home buyers, real estate agents, and investors. By leveraging historical sales data, property details, and location-specific information, a predictive model can accurately estimate house prices. The model's scalability, real-time updates, user-friendly interface, and transparency ensure it meets the needs of stakeholders. Integration capability, data privacy, and cost-effectiveness are also important considerations. By addressing these requirements, the prediction model provides reliable insights, empowering stakeholders to make informed decisions in the fast-paced real estate market.

- **1.2 Purpose :**

The purpose of a house price prediction model in a metropolitan city in India is to provide valuable insights and information to potential home buyers, real estate agents, and investors. This model leverages historical sales data, property details, and location-specific information to accurately estimate house prices. Its key features, such as scalability, real-time updates, a user-friendly interface, and transparency, ensure it meets the diverse needs of stakeholders. Additionally, considerations like integration capability, data privacy, and cost-effectiveness play a crucial role in ensuring the model's success. By addressing these requirements, the prediction model empowers stakeholders to make well-informed decisions in the fast-paced and dynamic real estate market.

Problem Definition & Design Thinking :

• Empathy Map :

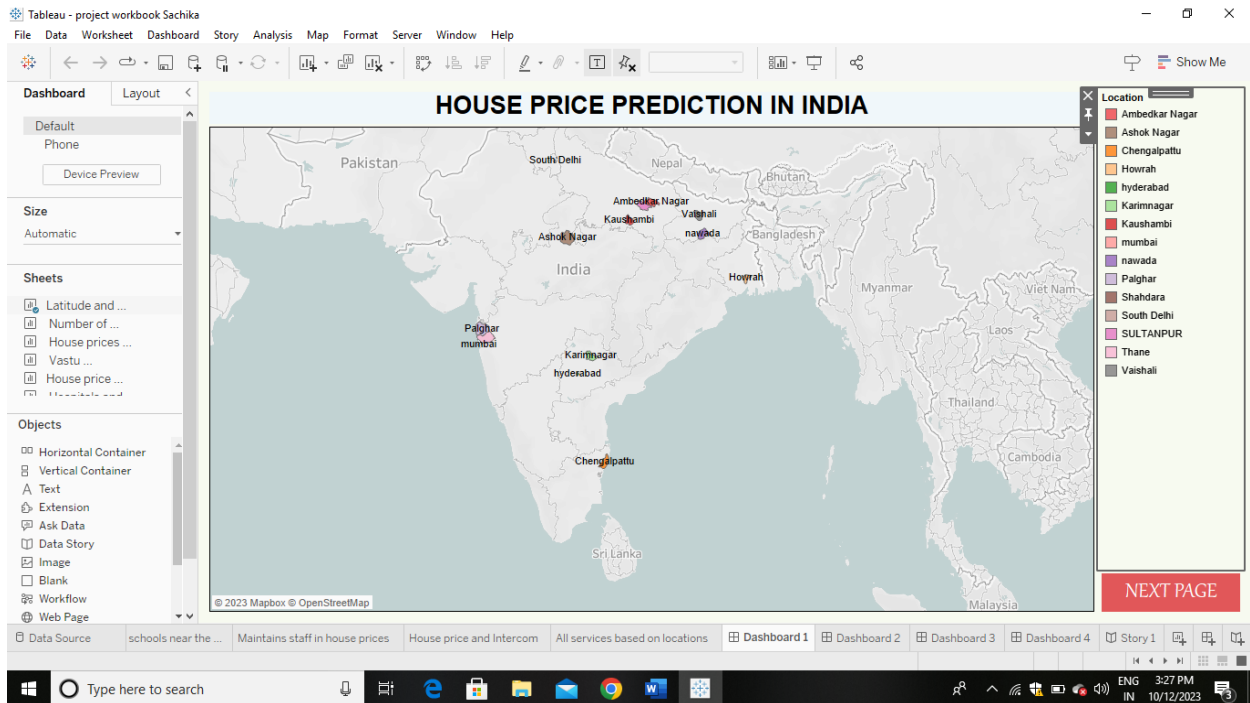


• Ideation & Brainstorming Map:

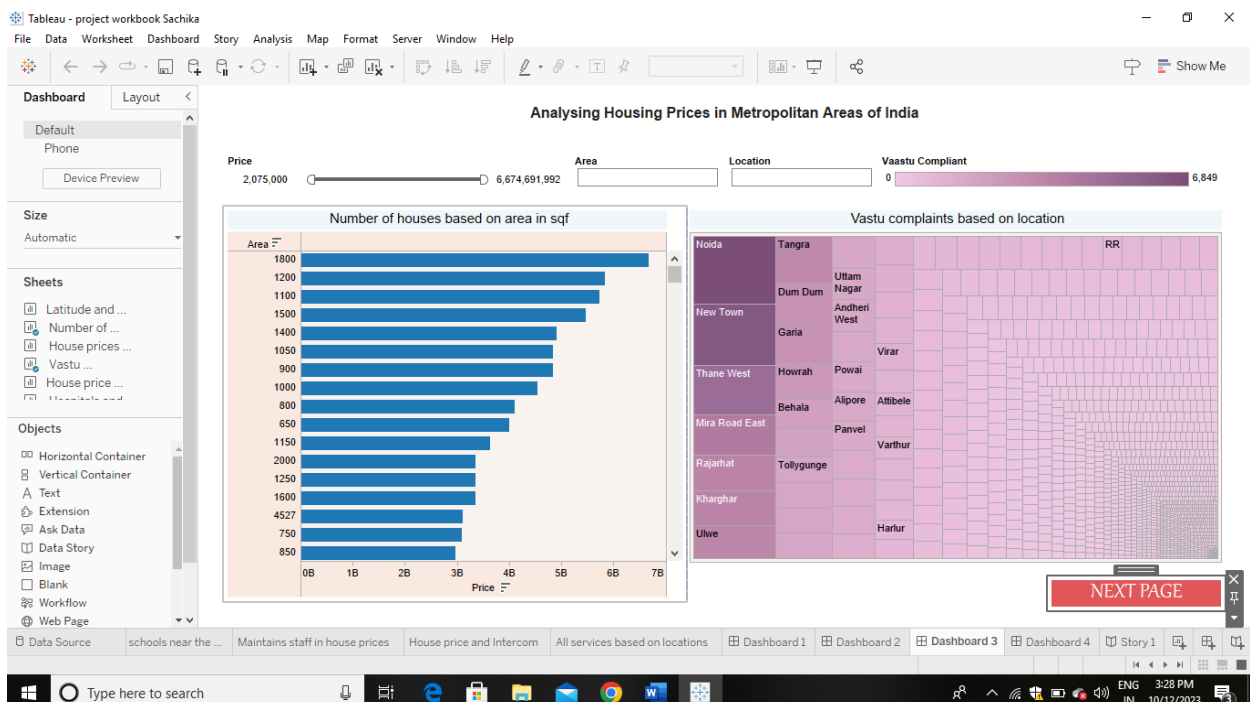


Result :

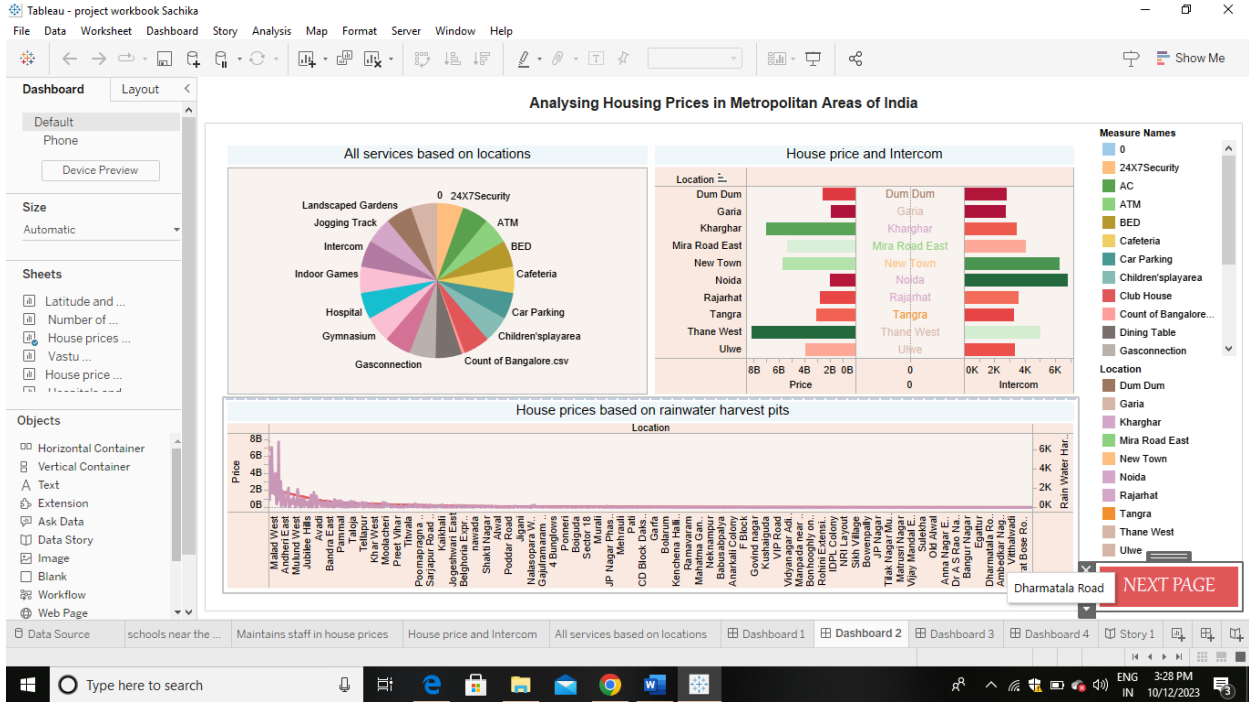
• Dashboard : 1



• Dashboard : 2



- **Dashboard : 3**



- **Story :**

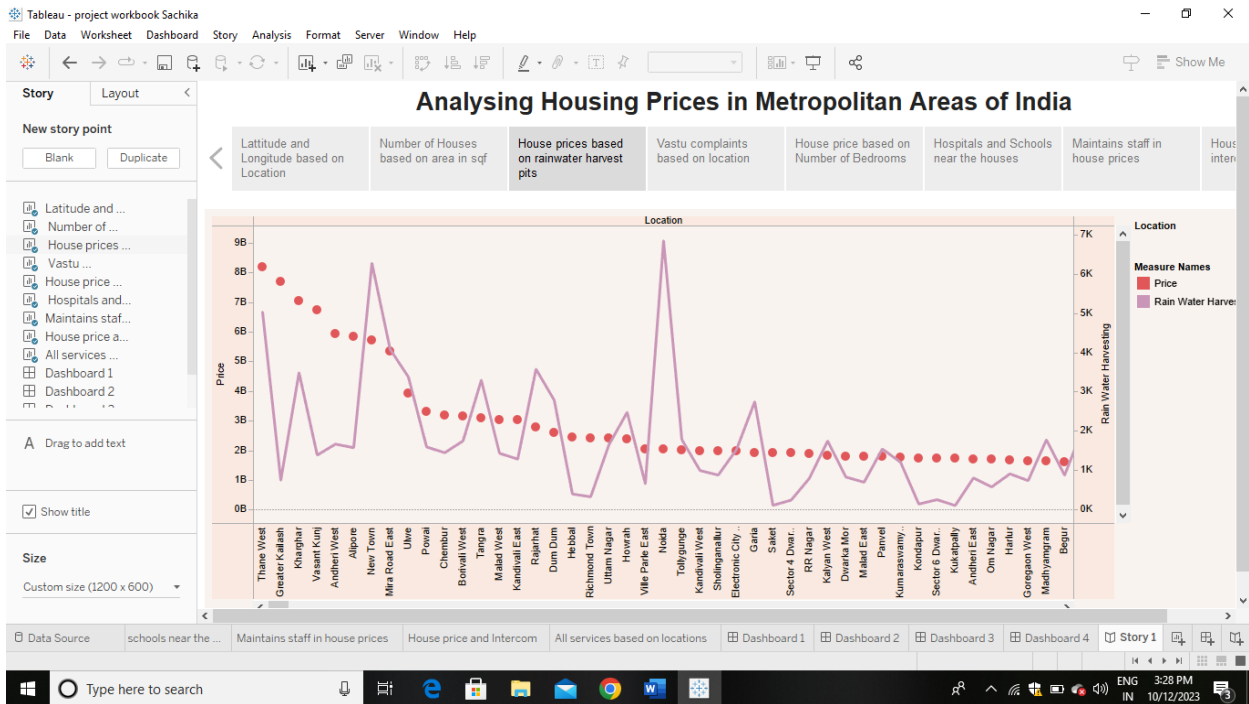


Tableau Public Link :

❖ Dashboard Link -

https://public.tableau.com/views/AnalysingHousingPricesinMetropolitanAreasofIndia_16969240338510/Dashboard1?:language=en-US&:display_count=n&:origin=viz_share_link

❖ Story Link -

https://public.tableau.com/views/AnalysingHousingPricesinMetropolitanAreasofIndia-Story/Story1?:language=en-US&:display_count=n&:origin=viz_share_link

Advantages & Disadvantages :

Advantages of a House Price Prediction in a Metropolitan City in India:

1. **Informed Decision-Making:** Potential home buyers, real estate agents, and investors can make informed decisions based on accurate price predictions, increasing the likelihood of successful transactions.
2. **Transparency:** The model's transparency in leveraging historical data and property details builds trust among stakeholders, enhancing the overall real estate experience.
3. **Scalability:** The model's scalability allows it to handle a vast amount of data, accommodating the dynamic nature of the real estate market in metropolitan cities.
4. **Real-Time Updates:** Providing real-time updates ensures that stakeholders have access to the latest market information, allowing them to adapt quickly to changing conditions.
5. **User-Friendly Interface:** A user-friendly interface makes the model accessible to a wider audience, including those with limited technical expertise.

Disadvantages of a House Price Prediction in a Metropolitan City in India:

1. **Integration Complexity:** Integrating the prediction model into existing real estate platforms or systems can be complex and time-consuming, potentially posing challenges for adoption.
2. **Data Privacy Concerns:** Handling sensitive property and location-specific data raises concerns about data privacy and the need for robust security measures to protect this information.
3. **Cost:** Developing and maintaining an accurate prediction model can be costly, and the expense may be a barrier for some stakeholders.
4. **Model Accuracy:** While predictive models can provide valuable insights, they are not infallible, and there can be variations in predictions, which may lead to occasional inaccuracies.
5. **Market Volatility:** Real estate markets can be highly volatile, and the model may struggle to account for sudden, unpredictable changes in market conditions.

Applications :

In our **Naan Mudhalvan** program, we introduced Tableau as a mandatory subject. After installing Tableau, we initiated discussions on our designated topic, which was **Analysing Housing Prices in Metropolitan Areas of India**

In this endeavor, I will delve into a dataset sourced from the Smartinterz website, specifically focusing on Analyzing housing prices in Indian metropolitan areas informs homebuyers, real estate agents, investors, and policymakers. It aids property decisions, guides investment strategies, and supports urban planning. Data-driven insights from such analysis empower stakeholders to make informed choices in the dynamic real estate market.

Conclusion :

The development of a robust house price prediction model for a metropolitan city in India offers a valuable solution for a diverse range of stakeholders, including prospective homebuyers, real estate agents, and investors. Leveraging historical sales data, property information, and location-specific details, this predictive model proves to be a crucial tool in estimating house prices with accuracy. Its scalability and ability to provide real-time updates, paired with a user-friendly interface and transparent methodology, make it highly suitable to meet the ever-evolving needs of the dynamic real estate market. Furthermore, considerations such as integration capability, data privacy, and cost-effectiveness underscore the model's practicality and reliability. By addressing these requirements, the prediction model not only empowers stakeholders but also equips them with the necessary insights to make informed decisions in the fast-paced and competitive real estate landscape.

Future Scope :

Analyzing housing prices in metropolitan areas of India is a valuable and continuously evolving field. Its future scope holds several opportunities and areas for growth:

1. Advanced Data Analytics:

As more data becomes available, future analysis can employ advanced data analytics techniques, including machine learning, deep learning, and predictive modeling, to provide more accurate and nuanced insights into housing price trends.

2. Data Sources Diversification:

Expanding the sources of data beyond historical sales data to include data on economic indicators, infrastructure development, and urban planning can lead to more comprehensive and predictive analyses.

3. Market Research and Trends:

Future studies can focus on understanding market dynamics and trends, helping stakeholders anticipate changes in housing demand and supply. This includes considering factors like changing work patterns (e.g., remote work), economic conditions, and population growth.

4. Smart Cities Integration:

The development of smart cities in India presents an opportunity to analyze housing prices in the context of technological advancements and urban planning, offering valuable insights into how technology affects property values.

5. Affordable Housing Analysis:

Given the importance of affordable housing in metropolitan areas, future research can concentrate on analyzing pricing trends for affordable housing options and the impact of government policies on affordability.

6. Environmental Considerations:

As environmental concerns gain significance, analyzing how sustainability and green building practices impact housing prices can be a significant future area of study.

7. Real-time Market Monitoring:

Implementing real-time market monitoring and analysis can provide up-to-the-minute data and insights, catering to the fast-paced nature of real estate markets.

8. Predictive Tools for Buyers and Investors:

Developing tools and applications that enable potential homebuyers and investors to make data-driven decisions in real-time can be a key area of future development.

9. Policy and Regulation Analysis:

Examining the impact of regulatory changes and government policies on housing prices is essential to understanding the future trajectory of the real estate market.

10. International Comparisons:

Comparative studies with housing markets in other countries can provide insights and strategies applicable to the Indian context.

In summary, the future scope of analyzing housing prices in Indian metropolitan areas involves embracing more advanced data analytics, considering a broader range of data sources, and focusing on evolving market trends and their implications. This research will continue to be valuable for individuals, businesses, and policymakers involved in the real estate sector.

Thanking You... 