

ANALYSING HOUSING PRICES IN METROPOLITAN AREAS OF INDIA

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PROJECT REPORT

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1.INTRODUCTION :

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.

Technical Architecture: 4 1.1 OVERVIEW :

1. INTRODUCTION A brief description about the project titled “ Analysing Housing Prices in Metropolitan Areas of India ”.

1.1 Purpose The use of this project has been discussed and its Application.

2. Problem Definition & Design Thinking

2.1 Empathy Map Empathizing the perspective of user and giving it in visualization form.

2.2 Ideation & Brainstorming Map Generating and organizing ideas in a structured and in visual way.

3.RESULT Final findings (Output) of the project has been projected using screenshots of dashboard and story.

4. ADVANTAGES & DISADVANTAGES List of advantages and disadvantages of the proposed solution.

5. APPLICATIONS Explaining the areas where this solution can be applied in effective way.

6. CONCLUSION Summarizing the entire work and findings of the proposed problem.

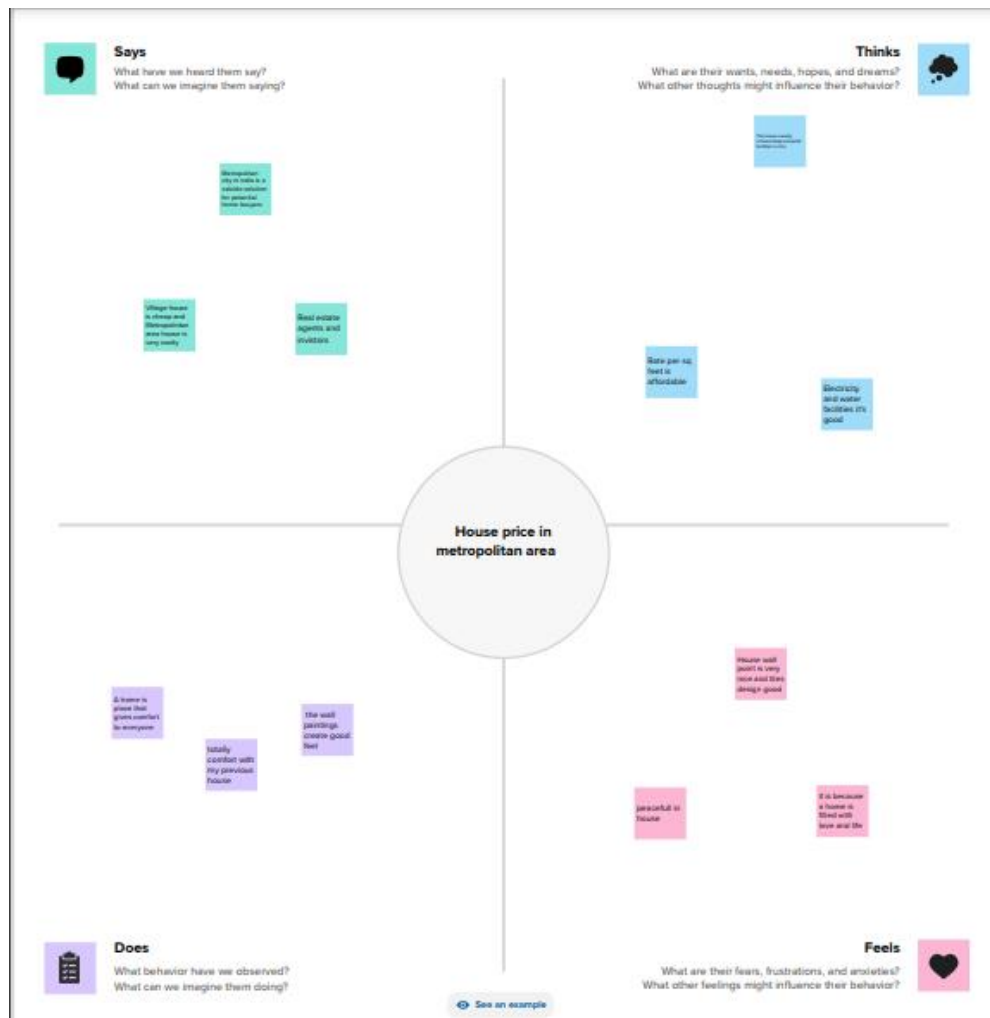
7. FUTURE SCOPE Enhancements that can be made in the project for future study.

CHAPTER -2

PROBLEM DEFINITION & DESIGN THINKING

2.1. EMPATHY MAP

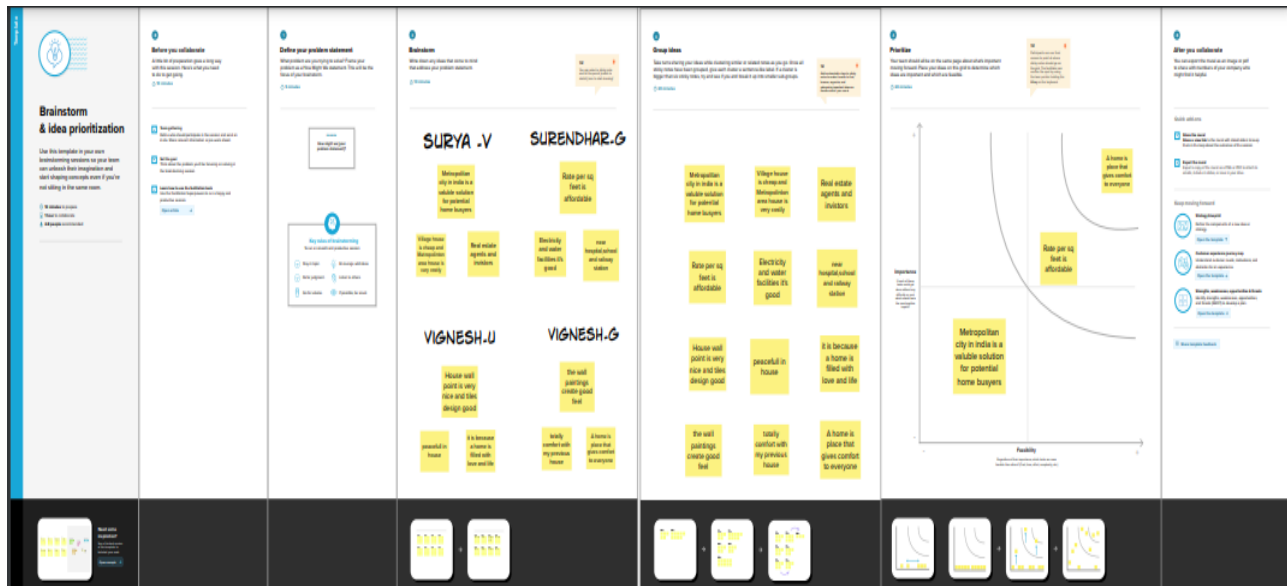
An Empathy Map is a tool used to help understand and empathize with the perspective of a particular user or customer. It is a visual representation of the user's attitudes, behaviors, emotions, and experiences that can be used to gain a deeper understanding of their needs and motivations. The Empathy Map is typically divided into four quadrants "Says," "Thinks," "Does," and "Feels." In each quadrant, the user's thoughts, feelings, actions, and spoken words are recorded to help build a more complete understanding of their perspective. The Empathy Map is often used in design thinking and user experience research to help inform the design of products or services that better meet the needs of the user.



2.2. IDEATION & BRAINSTORMING MAP :

Ideation and Brainstorming Maps are tools used to generate and organize ideas in a structured and visual way. They are commonly used in creative problem solving, innovation, and product design to generate a large number of ideas and then organize them into meaningful categories. [?] Ideation and Brainstorming Maps typically start with a central theme or problem statement in the center of the map. From there, branches are drawn out to represent different categories or subtopics related to the central theme. These categories can then be further expanded with additional branches to represent specific ideas. [?] The purpose of an Ideation and Brainstorming Map is to encourage free thinking and generate as many ideas as possible. It allows participants to visually see how ideas are connected and to build upon each other's ideas. The

map can then be used to prioritize and refine the most promising ideas. There are many variations of Ideation and Brainstorming Maps, including Mind Maps, Spider Maps, and Fishbone Diagrams.

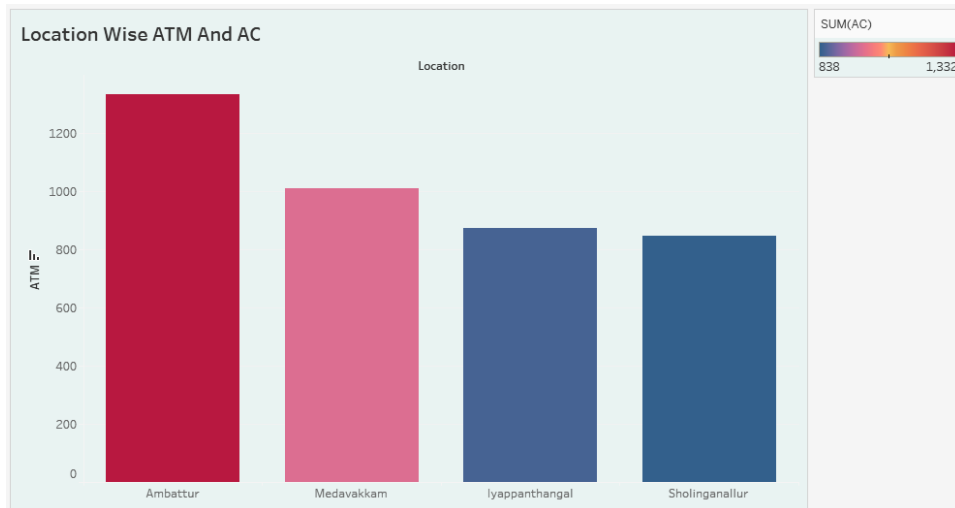


3.RESULTS:

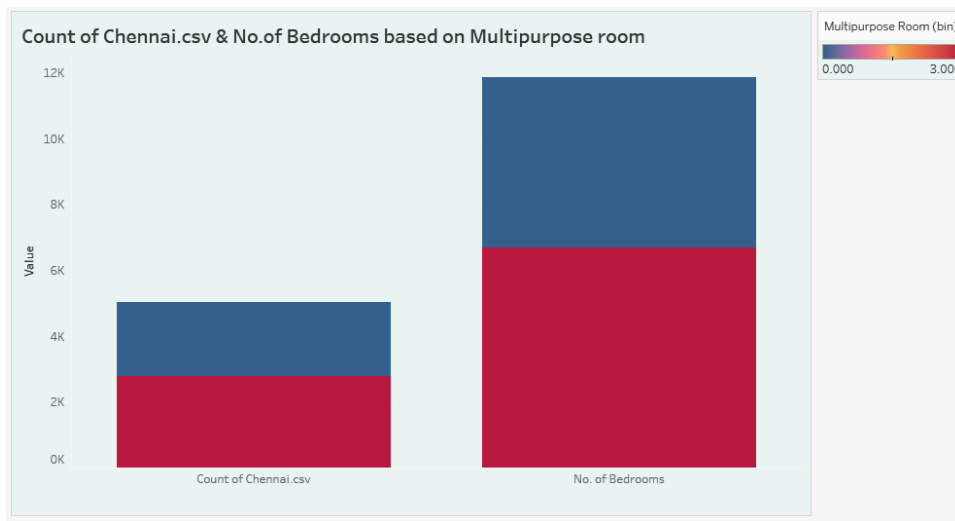
3.1. Creating Dashboard in Tableau:

A dashboard is a collection of different kinds of visualizations or views that we create on Tableau. We can bring together different elements of multiple worksheets and put them on a single dashboard. The dashboard option enables us to import and add charts and graphs from worksheets to create a dashboard. On a dashboard, we can place relevant charts and graphs in one view and analyze them for better insights.

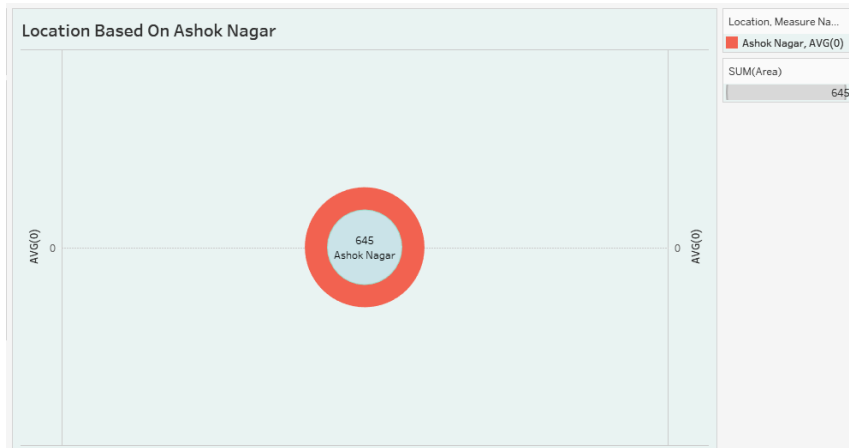
Dashboard 1:



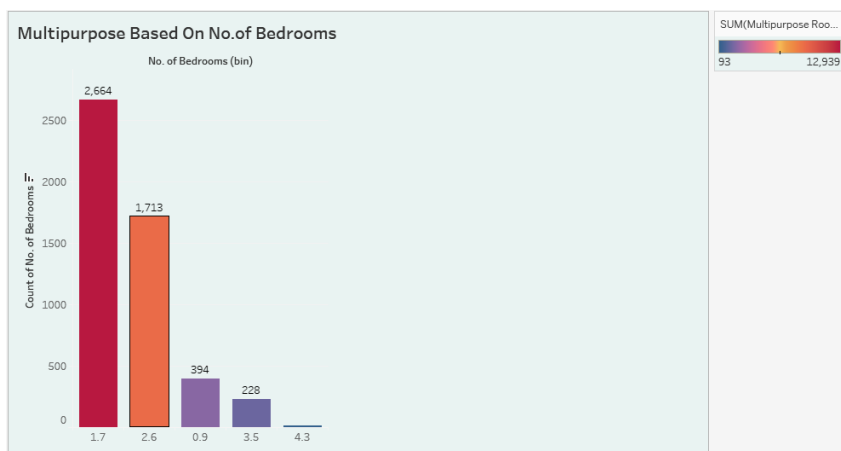
Dashboard 2 :



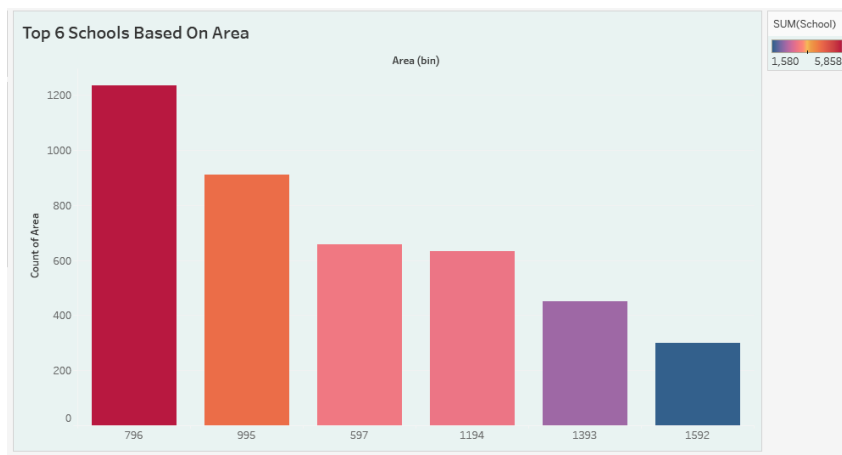
Dashboard 3:




Dashboard 4:



Dashboard 5:



3.Story:

Well, it is a sequence of different charts that combine to provide a cohesive plot to its viewers. In essence, all these charts tell a story about the data which allows the viewers to form the conclusion. The story Tableau contains story points, where each story point is either a worksheet or a dashboard.  When you share a story—for example, by publishing a workbook to Tableau Public, Tableau Server, or Tableau Cloud—users can interact with the story to reveal new findings or ask new questions of the data.

A. Options For Adding A New Story Point: Choose Blank to add a new point or Duplicate to use the current story point as the starting place for your next point.

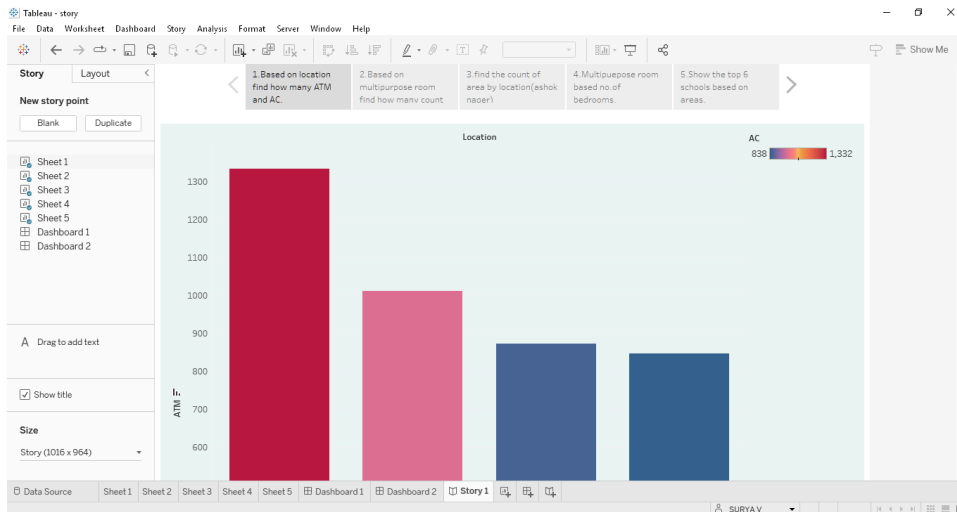
B. The Story Pane: Use this pane to drag dashboards, sheets, and test descriptions to your story sheet. This is also where you set the size of your story and display or hide the title.

C. The Layout Pane: This is where you choose your navigator style, and display or hide the forward and back arrows.

D. The Story Menu: Use this menu in Tableau Desktop to format the story or copy or export the current story point as an image. You can also clear the entire story here or show or hide the navigator and story title.

E. The Story toolbar: This toolbar appears when you mouse-over the navigator area. Use it to revert changes, apply updates to a story point, delete a story point, or create a new story point out of the current, customized one.

F. The navigator: The navigator allows you to edit and organize your story points. It's also how your audience will step through your story. To change the style of the navigator, use the Layout pane.



4. ADVANTAGES & DISADVANTAGES

Advantages: Increased prices and housing transactions generates tax revenues e.g. from Stamp Duty. This helps to reduce the size of the government's budget deficit. Stamp Duty revenue was almost £13 billion in 2017-18. Higher prices may lead to an expansion of new house-building as construction companies have the incentive of making more profit. This adds directly to GDP and may stimulate a multiplier effect in local areas / regions. An increase in prices may lead to an improvement in the consumer confidence of home-owners which might then cause a rise in consumer spending. ? Householders can take equity withdrawal from the increased value of their house e.g. by re-mortgaging their property and releasing some of the housing equity. **Disadvantages:** Expensive property leads to an increase in rents – because rented housing is a substitute for owner-occupation. This reduces geographical mobility. Mortgages become harder to get and this encourages people to get into more debt – which has big risks if the economy suffers another recession. According to research from Halifax, the average deposit put down by those buying their first home in the first half of 2018 was 16% of an

average price of £210 – i.e. over £30,000 deposit is needed, well out of the reach of many people in full-time jobs ? Rapid house price inflation lead to unsustainable asset boom and busts which ultimately leads to macroeconomic instability

5.APPLICATIONS:

The HPI is one of many economic indicators that investors use to keep a pulse on broader economic trends and potential shifts in the stock market. o The rise and fall of house prices can have big implications for the economy. Price increases generally create more jobs, stimulate confidence, and prompt higher consumer spending. This paves the way for greater aggregate demand, boosting gross domestic product (GDP) and overall economic growth. o When prices fall, the opposite tends to happen. Consumer confidence is eroded and the companies profiting from the demand for real estate lay off staff. This can sometimes trigger an economic recession o The House Price Index (HPI) is a broad measure of the movement of single-family property prices in the United States. Aside from serving as an indicator of house price trends, it also functions as an analytical tool for estimating changes in the rates of mortgage defaults, prepayments, and housing affordability.

6.CONCLUSION:

When people say house price inflation is good and normal inflation isn't, they are thinking from the perspective of their wealth. Inflation reduces the value of cash savings, but rising house prices increase the wealth of homeowners. However, this is only a narrow perspective on the implications of house price inflation. Firstly, house price inflation in the UK has left many people struggling to find affordable housing. But, the most serious concern is the role house price inflation can play in encouraging unsustainable asset boom and busts. The house price inflation of the early 2000s was much more serious than policy makers admitted at the time. Rising house prices contributed to a credit bubble that later popped with devastating impact.

7. FUTURE SCOPE:

The Indian real estate market has traditionally been a significant contributor to the country's GDP and employment generation. It encompasses various segments, including residential, commercial, retail, hospitality, and industrial properties. The rapid urbanization, growing middle class, and increased investment in infrastructure have driven the demand for real estate across these segments.

Urbanization and Population Growth: India's rapid urbanization and population growth are driving the demand for residential, commercial, and infrastructure development.

Affordable Housing: The government's focus on affordable housing initiatives aims to cater to the housing needs of the growing middle-class and lower-income segments.

Infrastructure Development: Investments in infrastructure projects such as metro systems, highways, and airports are boosting real estate development in their proximity.

Commercial and Retail: The growth of sectors like IT, ecommerce, and retail is driving demand for commercial office spaces and retail outlets.

22 Foreign Direct Investment (FDI): Liberalized FDI policies are attracting foreign investors to invest in Indian real estate, particularly in commercial and residential segments.

Co-Living and Co-Working Spaces: The trend of co-living and co-working spaces is gaining traction, catering to the changing lifestyle and work patterns.

Rental Housing: Increasing urban migration is driving demand for rental housing, leading to growth in the rental market. While the Indian real estate

market holds significant potential, challenges such as regulatory complexities, funding constraints, and market fluctuations must also be navigated. Staying informed about market trends, focusing on customer needs, and adopting innovative strategies will be key to thriving in this dynamic sector.