BACHELOR OF SCIENCE

IN

PHYSICS

MRK COLEGE OF ARTS AND SCIENCE PAZHANCHANALLUR

ANALYSING

HOUSING PRICES IN

METROPOLITAN AREAS OF INDIA

1. Introduction

In this project, we have built a machine learning model to predict the house prices of an Indian city .

This project will very helpful for the real estate market.

Our model can be used by both house sellers and house buyers.

1.1 Over view

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 hose prices
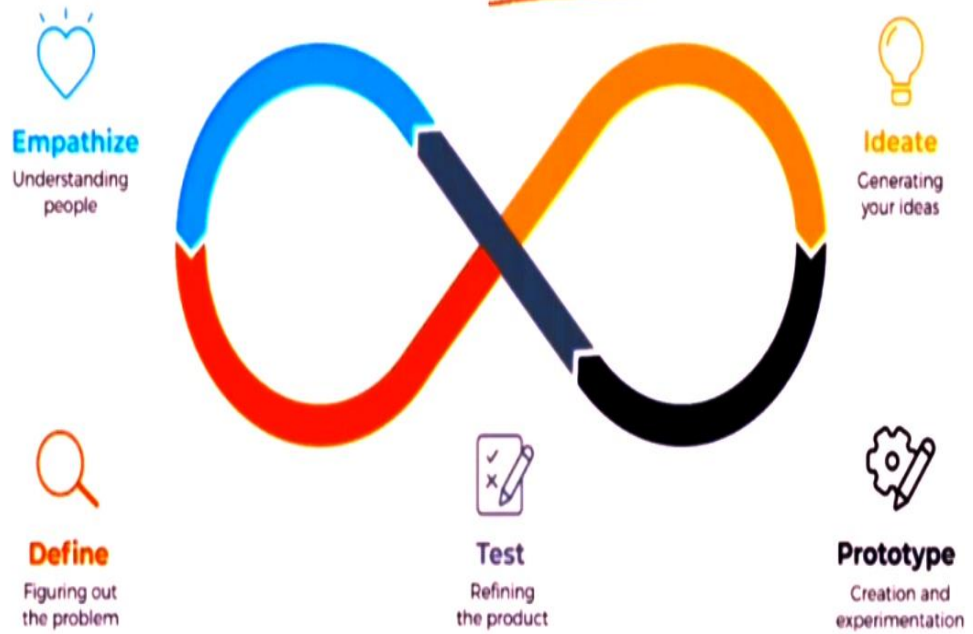
1.2 Purpose

Analysing housing market can provide valuable information to policy makers and help them better control inflation and design more effective policies.
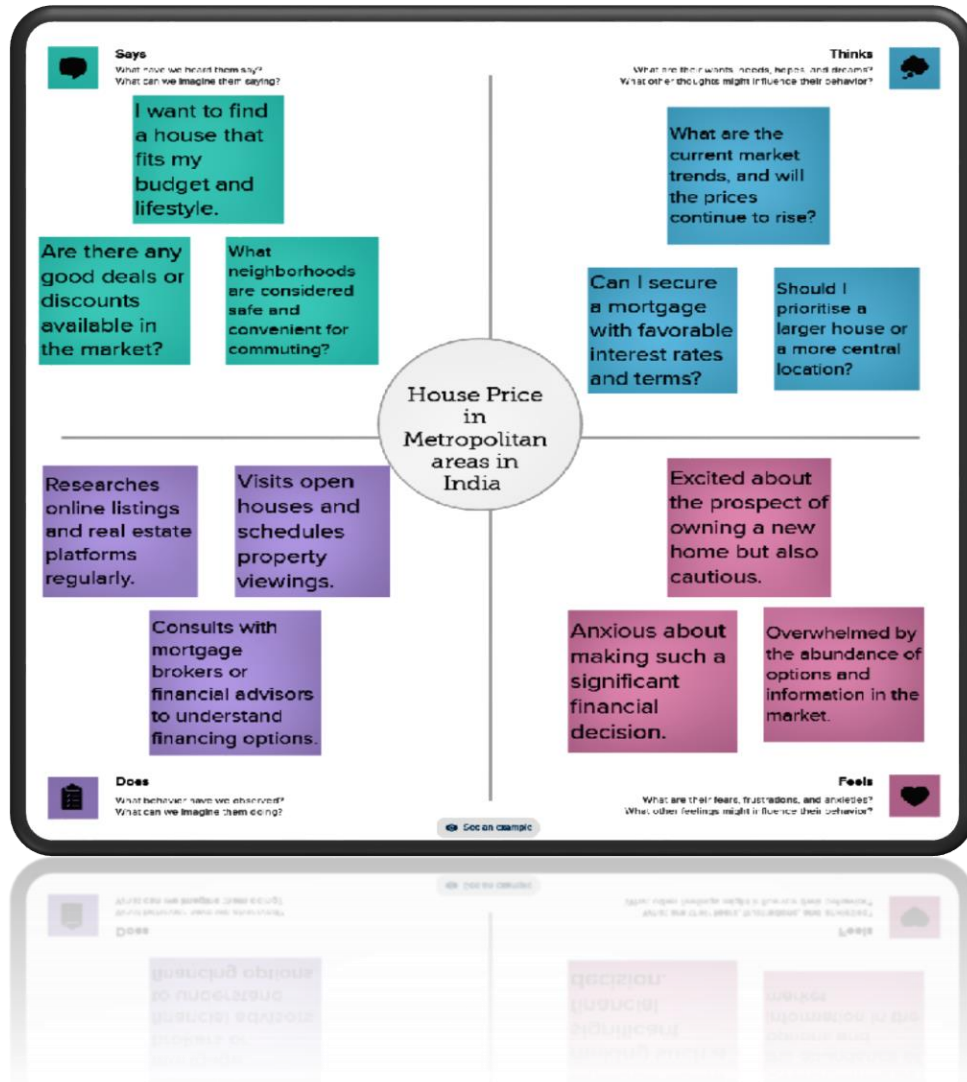
2. Problem statement & design thinking

Mitigating the escalating house prices crisis in Indian metropolitan areas to ensure sustainable Urban Development.

DESIGN THINKING

Empathize
Understanding people

Ideate
Generating your ideas

Define
Figuring out the problem

Test
Refining the product

Prototype
Creation and experimentation

2.1 Empathy map

Empathy map — House Price in Metropolitan areas in India

Says
What have we heard them say?
What can we imagine them saying?

- I want to find a house that fits my budget and lifestyle.
- Are there any good deals or discounts available in the market?
- What neighborhoods are considered safe and convenient for commuting?

Thinks
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?

- What are the current market trends, and will the prices continue to rise?
- Can I secure a mortgage with favorable interest rates and terms?
- Should I prioritise a larger house or a more central location?

Does
What behavior have we observed?
What can we imagine them doing?

- Researches online listings and real estate platforms regularly.
- Visits open houses and schedules property viewings.
- Consults with mortgage brokers or financial advisors to understand financing options.

Feels
What are their fears, frustrations, and anxieties?
What other feelings might influence their behavior?

- Excited about the prospect of owning a new home but also cautious.
- Anxious about making such a significant financial decision.
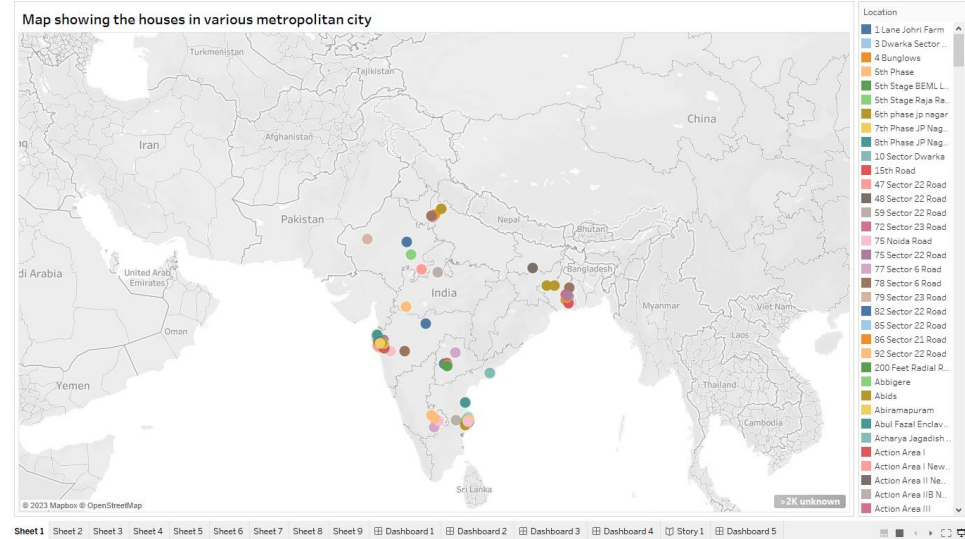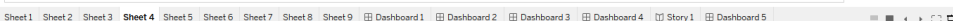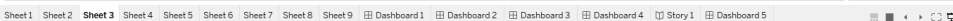- Overwhelmed by the abundance of options and information in the market.
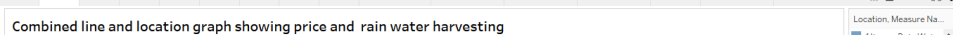
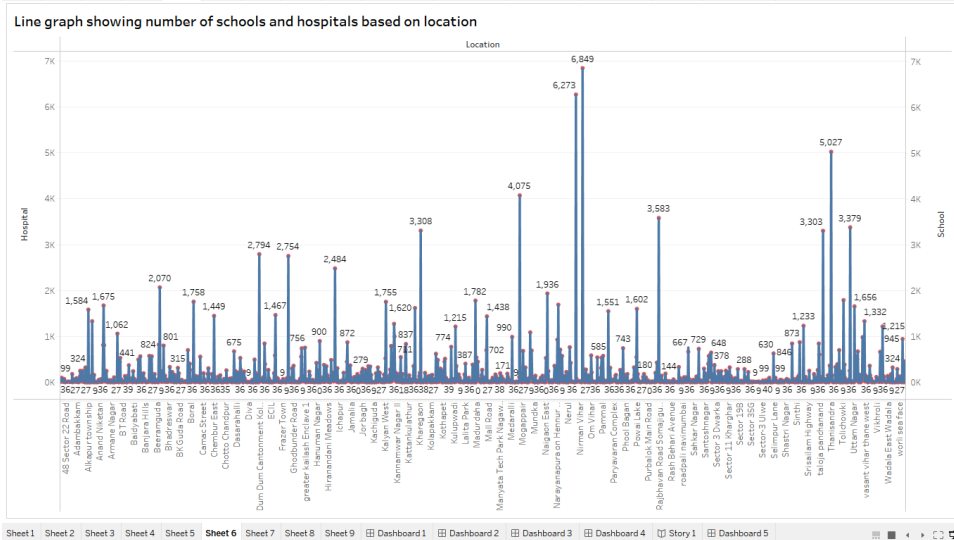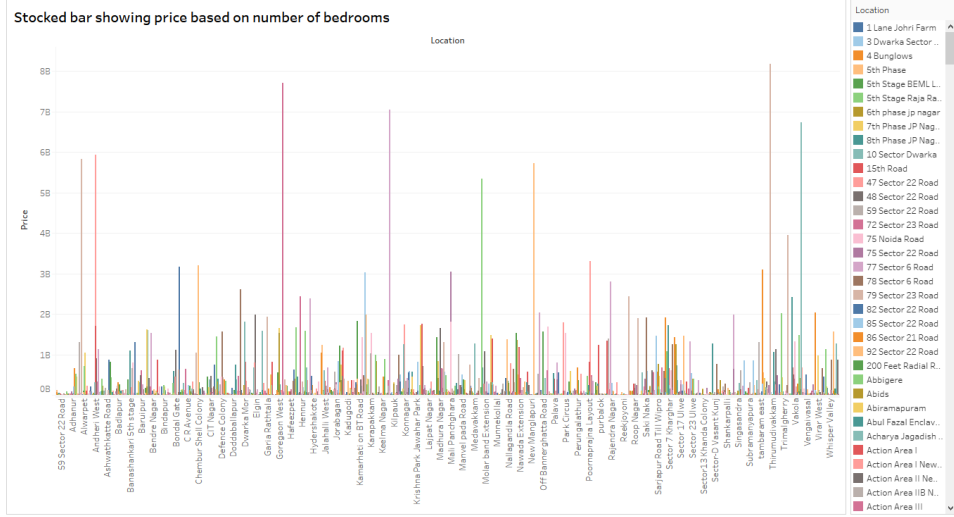See on example

2.2 Brainstorming map
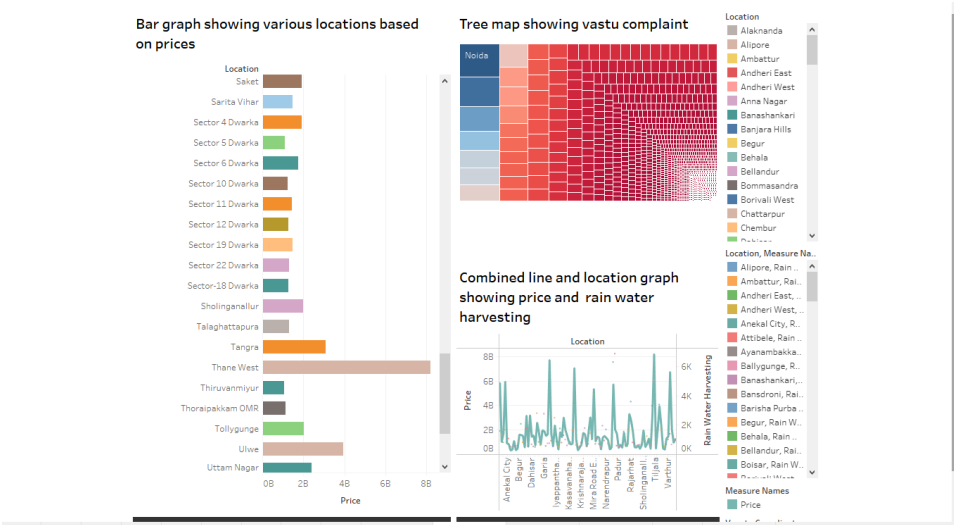
3.Result

As per the report, housing prices in Ahmedabad rose 10 per cent Y-o-Y to 6507 rupees per square feet during April-June period . Bengaluru too witnessed a 10 per cent increase in prices to 8,688 rupees per square feet. The prices of residential properties in Chennai went up 6 per cent to 7,653 rupees per square feet

Map showing the houses in various metropolitan city

Bar graph showing various locations based on prices

Location

Combined line and location graph showing price and rain water harvesting

Location, Measure Na...

Measure Names

Tree map showing vastu complaint

SUM(Vaastu Compliant)
0 — 6,849

Bar graph showing various locations based
on prices

Tree map showing vastu complaint

Combined line and location graph
showing price and rain water
harvesting

Sheet 1 | Sheet 2 | Sheet 3 | Sheet 4 | Sheet 5 | Sheet 6 | Sheet 7 | Sheet 8 | Sheet 9 | Dashboard 1 | Dashboard 2 | Dashboard 3 | Dashboard 4 | Story 1 | Dashboard 5

Stocked bar showing price based on number of bedrooms

Sheet 1 | Sheet 2 | Sheet 3 | Sheet 4 | Sheet 5 | Sheet 6 | Sheet 7 | Sheet 8 | Sheet 9 | Dashboard 1 | Dashboard 2 | Dashboard 3 | Dashboard 4 | Story 1 | Dashboard 5

Line graph showing number of schools and hospitals based on location

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Bar comparison chart *VS* Price and intercom facility

Pie chart showing various facility

Bar comparison chart *VS* Price and intercom facility

Pie chart showing various facility

Stocked bar showing price based on number of bedrooms

Location

Price

88

68

48

28

0B

Adyar, Avalahalli Off Sarja.., Bapur Road, Budge-Budge, Dashnath Puri, Entally, Hanuman Nagar, Jeelamela Nagar, Kankurgachi Main, Kondanakunte, Madhyamgram, Mehrauli, Nanmangalam, Poonam Sagar Com.., Reekjoyoni, Servodaya Enclave, Sector 35I Kharghar, Srivaikila, Thane West, Veliakkai

Line graph showing number of schools and hospitals based on location

Location

Hospital

School

7K

6K

5K

4K

3K

2K

1K

0K

7K

6K

5K

4K

3K

2K

1K

0K

6,849
6,273

5,027

4,076

3,583
3,303

3,308

2,796

2,070

1,233

846

Alakhanda, Balaji Hills Colony Venkatr.., Block SD Delhi, Dahisar West, Gandhar Nagar, Howrah Railway Station, Kalyan Nagar, Kompally, Malabar Hill, Mumbra, NSC Bose Road Mahamaya.., Poornagma Housing So.., Roop Nagar, Shanti Park Dwarka, Thiruvanmiyur

Area and density graph showing maintenance staff and price based on location

Location

Maintenance Staff

Price

6K

4K

2K

0K

88

68

48

28

0B

6,849
6,276

5,032

4,076

3,584
3,502

3,384

2,484

2,074

1,550

1,602

1,333

1,062
852

998

983

Other West, Behala, Chembur, ic City Pha, Howrah, Kiamcthe, Keshtopur, aswamy Lay, Kedavakkam, Mukundapur, Noida, Panvel, Powai, Sonarpur, Tollygunge, Vanthur

next dashboard

Map showing the houses in various metropolitan city

Kazakhstan

Mongolia

China

Iran

Pakistan

India

Yemen

N...

Area and density graph showing maintenance staff and price based on location

SUM(Maintenance Staff)

801   6,849

Map showing the houses in various metropolitan city

Bar graph showing various locations based on prices

Combined line and location graph showing price and rain

Tree map showing vastu complaint

Stocked bar showing price based on number of bedrooms

Line graph showing number of schools and hospitals based on

Location

1 Lane Johri Farm
3 Dwarka Sector ...
4 Bunglows
5th Phase
5th Stage BEML L...
5th Stage Raja Ra...
6th phase jp nagar
7th Phase JP Nag...
8th Phase JP Nag...
10 Sector Dwarka
15th Road
47 Sector 22 Road
48 Sector 22 Road
59 Sector 22 Road
72 Sector 23 Road
75 Noida Road
75 Sector 22 Road
77 Sector 6 Road
78 Sector 6 Road
79 Sector 23 Road
82 Sector 22 Road
85 Sector 22 Road
86 Sector 21 Road
92 Sector 22 Road
200 Feet Radial R...
Abbigere
Abids
Abiramapuram
Abul Fazal Enclav...
Acharya Jagadish ...
Action Area I

4.Advantages & Disadvantages

Advantages of house prices in metropolitan areas in India:

High investigation potential: Metropolitan areas are the economics and cultural centers of India, and they attract a large number of people from all over the country. This high demand for housing drives up property prices, making metropolitan areas a good investment for those looking to generate long-term returns.

Better infrastructure and amenities: Metropolitan areas have better infrastructure and amenities than other parts of the country. This includes things like better roads, public, transportation, schools, hospitals , and shopping malls. This makes metropolitan areas more dasirable places to live , which further drives up property prices.

**Disadvantages of house prices in metropolitan areas in India :**

The disadvantages are massively out-numbered by the benefits of buying/owning your home, but just for the sake of anyone who hasn't really thought what the concept of "ownership" means in the context of a home.

Just like car ownership, if you own your home then you are responsible for all the bills.

Just like car ownership, with home ownership you are responsible for maintenance and repairs. If something breaks, or stops working,

or comes loose, or dangerous, then YOU are responsible for organising for it to be fixed and for paying the price of that work

5.Application :
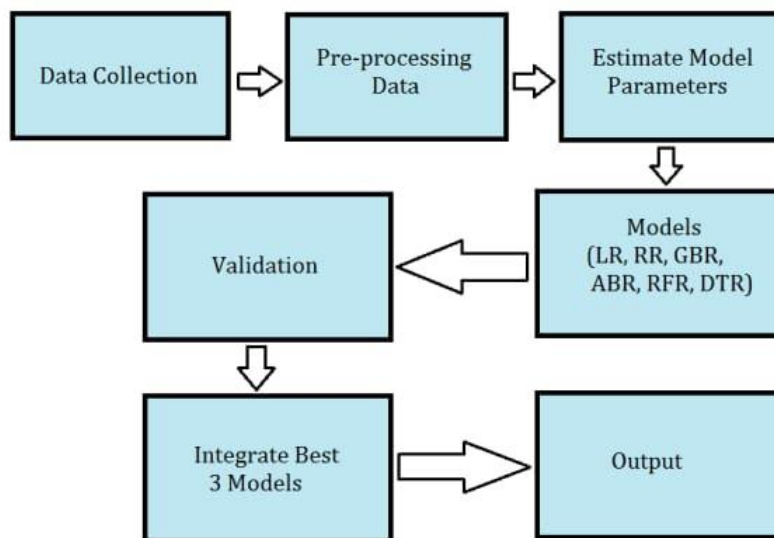
6.Conclusion:

This implies that the housing markets in the different areas operate as segmented independent local markets . Therefore, house prices in one location in India cannot impose a competitive constraint on house prices in other location, and as such a home owner can freely set the price of his house.

7.Future scope:

House price prediction can help the developer determine the selling price of a house and can help the customer to arrange the right time to purchase a house. There are three factors that influence the price of a house which include physical conditions, concepts and location.