



V.S.S GOVERNMENT ARTS COLLEGE- PULANKURICHI

DEPARTMENT OF MATHEMATICS

Naan Mudhalvan Scheme

Domain: Data Literacy with Tableau

Project Title:Analysing Housing Prices In Metropolitan Areas of India

Submitted by

TEAM 2

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Principal

PROJECT REPORT

1.INTRODUCTION

Data Analysis with Tableau is an end – to end data analysis platform that allows us to pre, analysis, collaborate and share our big data insights. Tableau excels in Self – service , visual analysis ,allowing people to also new questions of governed big data and easily share these insights across the organization.

1.1 Overview

This project assist in mastering the numerous tools used in data visualization and optimizing the data interpretation according to the requirement of the customer.

1. What is data literacy ?
2. Importance of data literacy
3. Data literacy skills
4. Challenges of data literacy
5. Build data literacy with a framework
6. How to become data literate
7. Data literacy and data culture
8. Getting started with data literacy

What is data literacy ?

- ❖ Data literacy refers to the ability to understand, analysis, and interpret data.
- ❖ In today's data – driven world, data literacy has become an essential skill for individuals and organizations alike.
- ❖ It allows us to make informed decisions based on evidence rather than intuition or guesswork.

Importance of data literacy

Data literacy can also be a valuable skill. It allows teams to learn, identify problems, communicate with colleagues, and increase their value as an employee. Information is everywhere. Without a data – literate workforce, we

could limit our organization's ability to grow.

There are countless reasons why data literacy is critical to our organization.

Some of these include:

- ❖ Allows for data-driven decisions.
- ❖ Better customer knowledge.
- ❖ Competitive edge.
- ❖ Increased innovation and productivity.
- ❖ Increased employability.

Data literacy skills

Data Literacy isn't just a math skill – it's a life skill. Data is everywhere.

Nearly everything is digital and those digital things produce and consume data.

We negotiate data by reading food labels, interpreting medication dosages, and when we are monitoring voting activities. Understanding data and making an informed decision is a skill anyone can learn, at any level.

Non-technical data literacy skills

At a basic level, the non-technical data literacy skills include a basic level of self-education, as well as critical thinking, and high-level communication skills.

Other such skills may include problem-solving, collaboration and teamwork and more. Anyone can learn and refine the following skills, which will help when exploring, storing, and communicating with data.

Some of the non-technical data literacy skills include:

- ❖ **Critical thinking:** Essential for analyzing and understanding data, critical thinking skills are developed through questioning your assumptions, using logic to work through problems, and diversifying where you get your information.
- ❖ **Research:** Knowing about the subject matter behind your data to truly understand it. Regardless, honing your research skills is important for anyone wanting to become data literate. It involves finding sources, engaging with it in meaningful ways in to draw conclusions, and evaluating those findings after your research is done.

❖ **Communication:** Being data literate means more than just understanding data. It also means being able to communicate the data and findings with other people around you. This may be in any number of formats – speaking, writing, presenting, or storytelling. Honing your communication is an important business skill in general, but especially when dealing with data. It's important to ensure everyone involved in gathering, parsing, analyzing, and understanding the data is on the same page. Misunderstandings may lead to business issues further down the road.

❖ **Domain knowledge:** The last of the soft skills on our list is a basic level of domain knowledge about data and data science. Anyone can learn how to interact with data, but knowing the basics and educating yourself will only help as you seek to become data literate.

Technical skills

Technical skills are the more technical skills involved in data analysis. These are numerous and include things like data management, building and maintaining dashboards or reports, data visualization, and various kinds of math or programming, just to name a few. Since there are so many, we've pared this list down to name a few. Some of the technical data literacy skills include:

- ❖ **Analysis:** Data analysis refers to statistical, or logical techniques to data in order to describe, visualize, assimilate, and evaluate it. The process includes collecting, formatting, cleaning, processing, exploring possibilities, identifying patterns, and drawing conclusions from data. It's the lifecycle of data in business.
- ❖ **Visualization:** Data visualization is the graphical representation of information in different forms, such as charts, graphs, maps, etc.
- ❖ **Management:** Data management is the entire process of collecting, vetting, and storing data. It includes data cleaning, data mining, and data warehousing.
- ❖ **Mathematics:** If we want to really understand data on a deep

level, we need to know the basis for its analysis. That involves learning about statistics, linear algebra, and calculus. Even a conceptual understanding of each will further your knowledge.

- ❖ **Programming languages:** If we want to build dashboards or complex data analysis programs, we need to understand and use programming languages. Some of the best for data work include Python, R, and SQL.

Challenges of data literacy

So what challenges can we expect when pushing for data literacy in our organization? we may encounter such challenges as our employees being resistant to change or new technology, there being a skills gap between our users, issues with data governance, and silos in your organization.

- ❖ **User resistance:** We may find people are resistant to new technology or processes, and don't want to embrace change. Ensuring that you get these people onboard with the benefits will help you handle any such resistance and ensure success.
- ❖ **Skills gap:** When training our team to handle new procedures or tools, we may find that some of our team already knows how to use it and some struggle to adopt. Ensuring a thorough education of new concepts and tools will help to eliminate this issue.
- ❖ **Silos:** We must be careful that the people on our team who best understand data don't silo into certain departments, but that each team has an understanding and can utilize data to the best of their ability.
- ❖ **Data governance:** The more data your organization learns to handle, the better our data governance practices need to be ensuring we have best practices for every stage of the data governance lifecycle will ensure that our processes run smoothly and our data is accurate.

PROJECT DESCRIPTION:

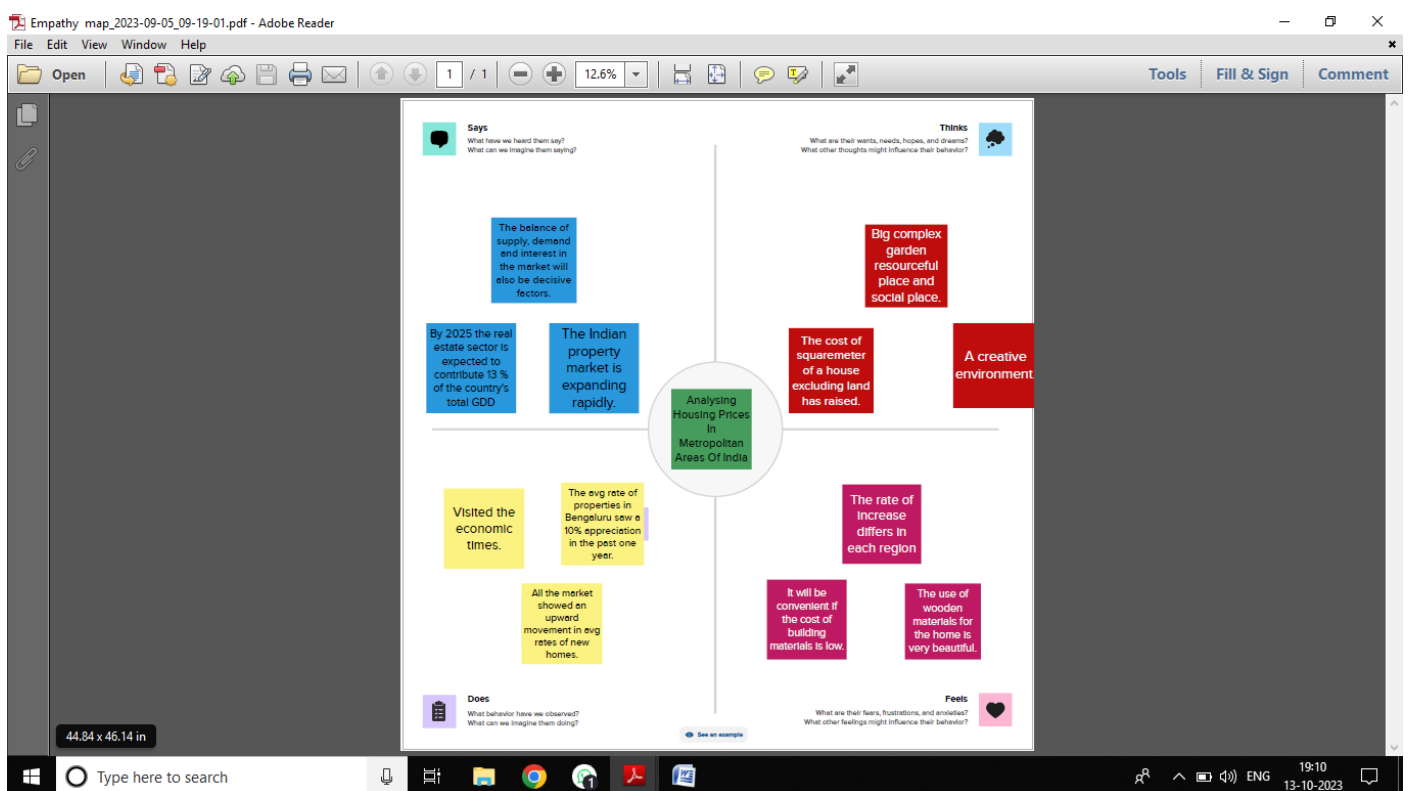
House price prediction in a metropolitan city in india is a valuable solution for potential home buyer,real estate agents,and investors.By leveraging historical sales data,property details,and location-specific information,a predictive model can accurately estimate house prices.the model's

scalability,real- time updates, user-friendly interface ,and transparency ensure it meets the neets 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.

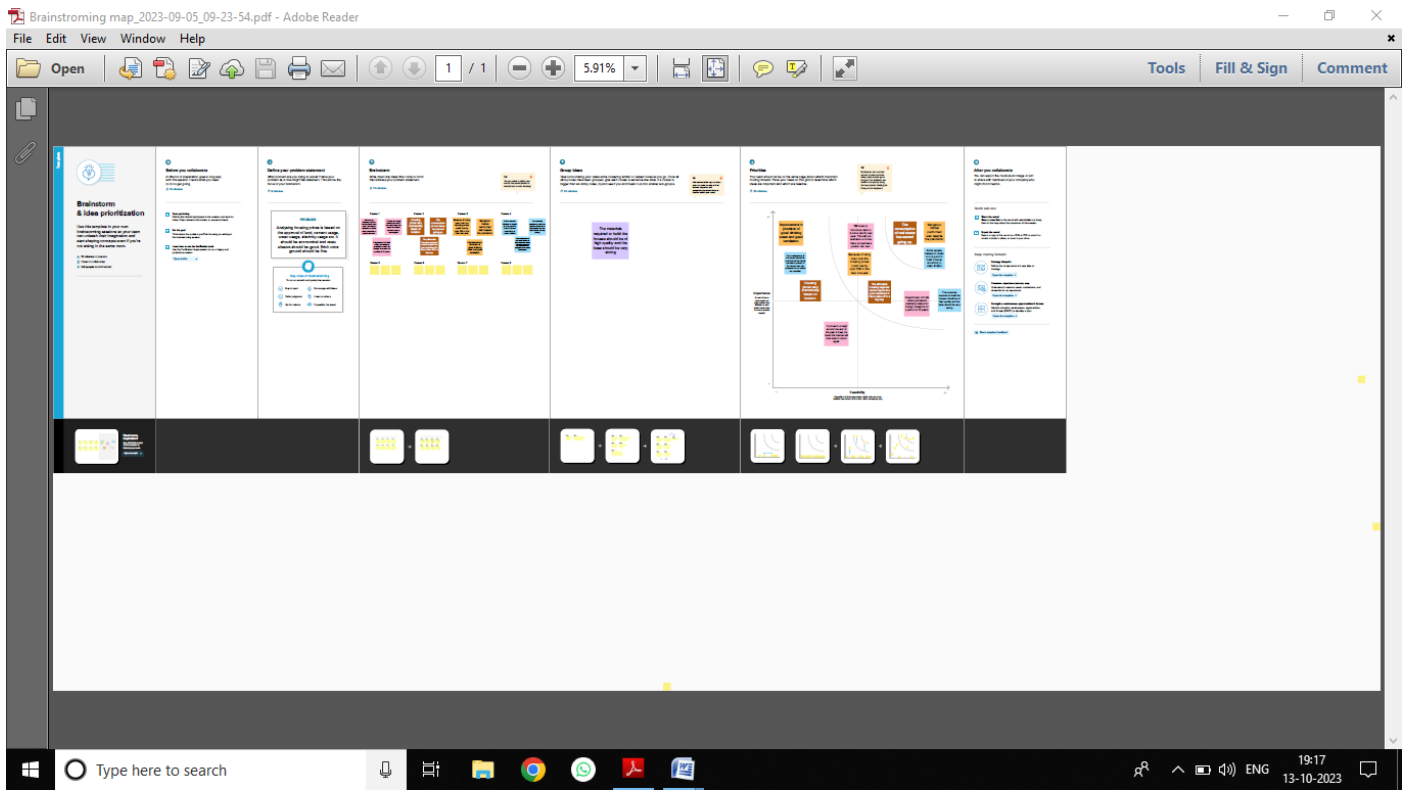
2. PURPOSE DEFINITION & DESIGN THINKING

- It helps users create different charts, graphs, maps , dashboard, and Stories for visualizing and analyzing data to help in making business decisions. Tableau has a lot of unique, exciting features that make it one of the most popular Tools in business intelligence

2.1 Empathy Map



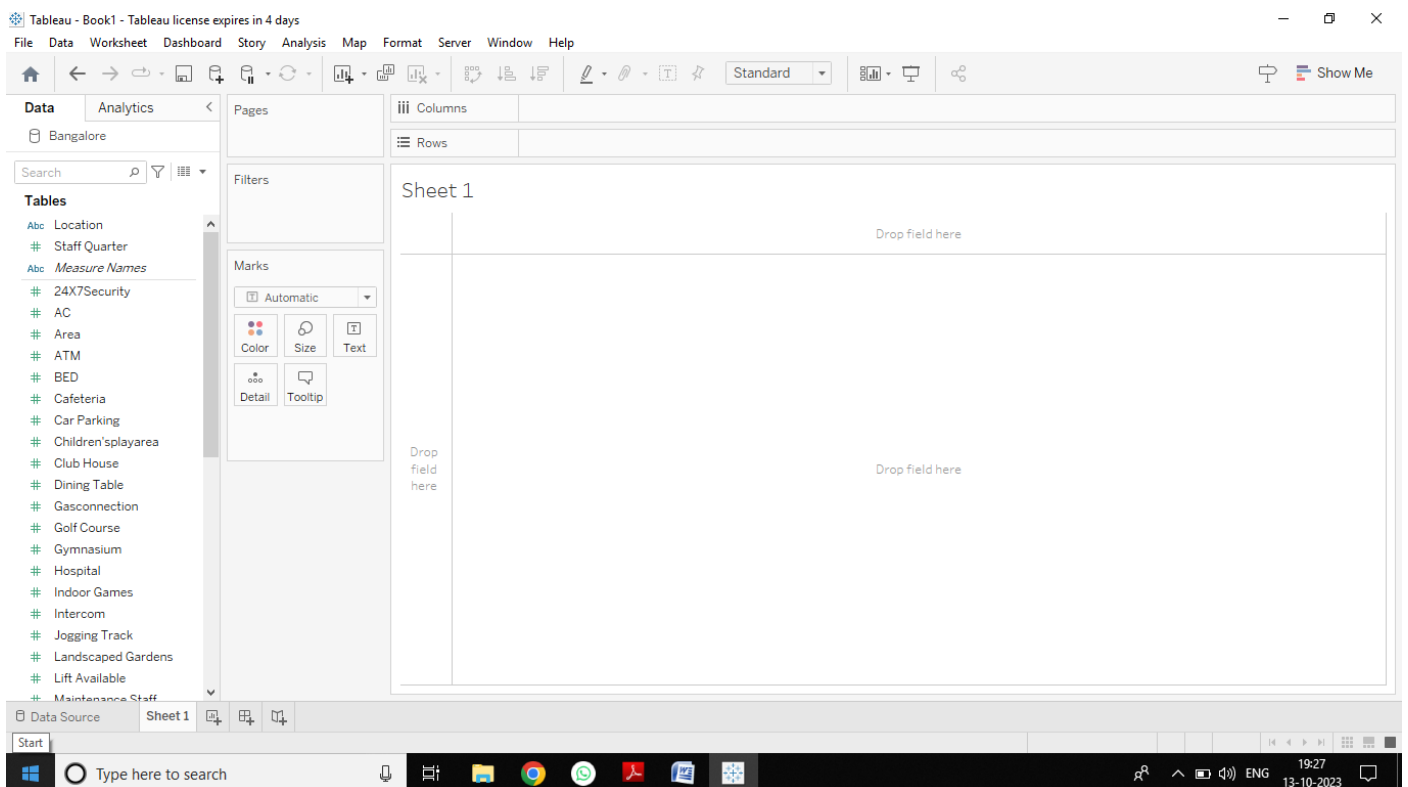
2.2 Ideation & Brainstorming Map



3. RESULT

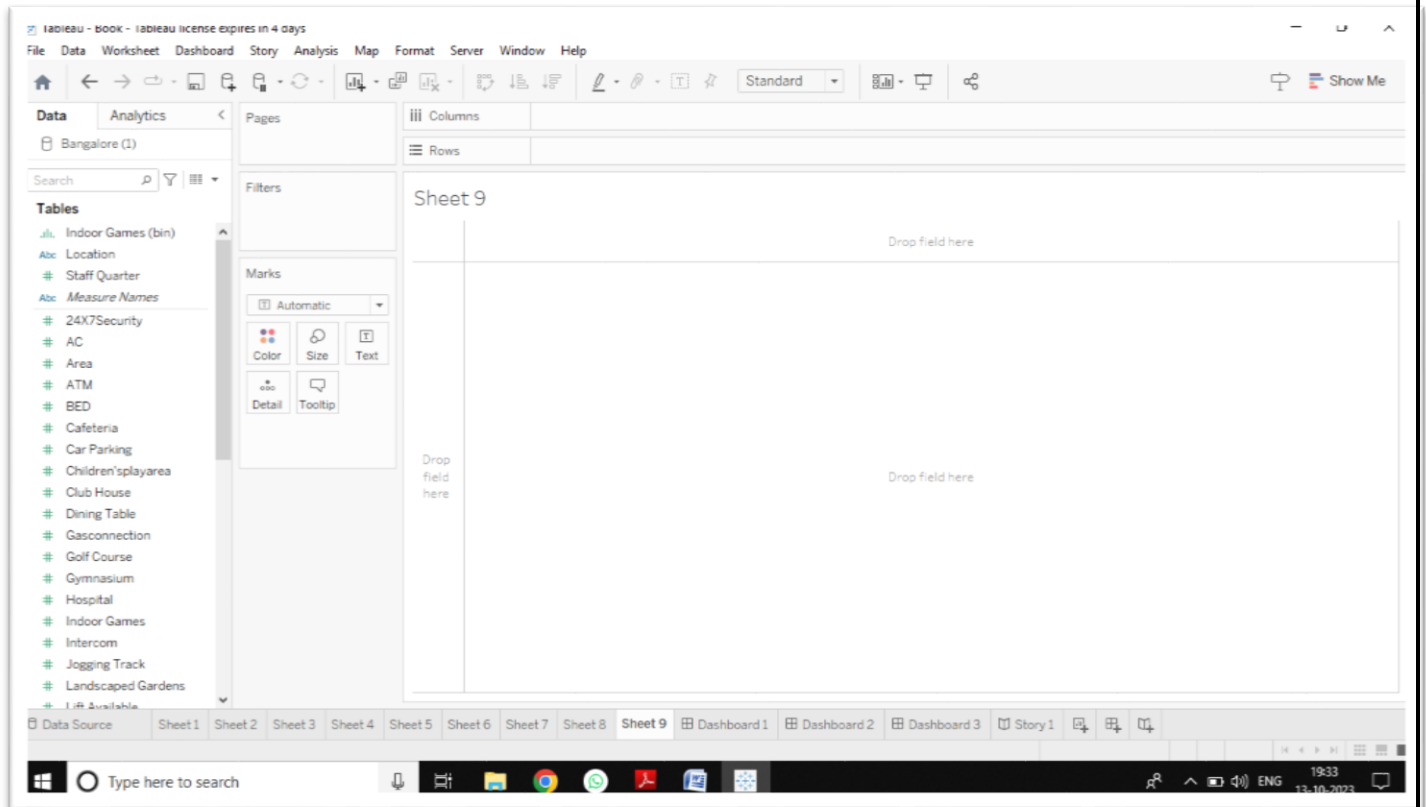
3.1 Activity & Screenshot

Open the Tableau Desktop



Description:

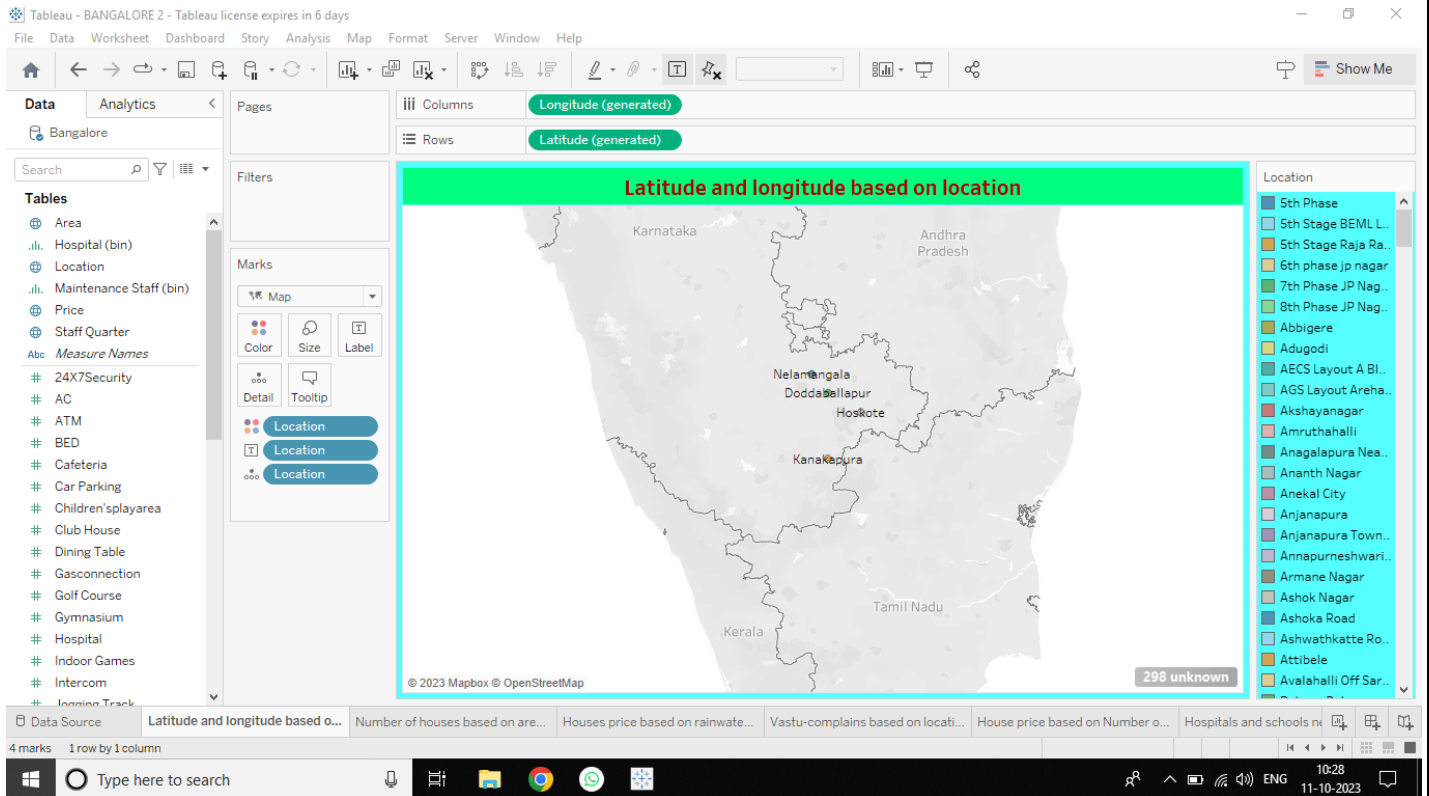
Data contains all the meta information regarding the columns described in the CSV file: The Tableau HRscorecard: measuring sources in talent management.



Description:

Create a new worksheet on the left we will find data columns select the Location column, location drag to the Rows data and top right corner we can see show me option select the map, Location drag to the colours and Location drag to the label and edit label, Location drag to the filter and edit. Finally change the sheet name and get the visualization.

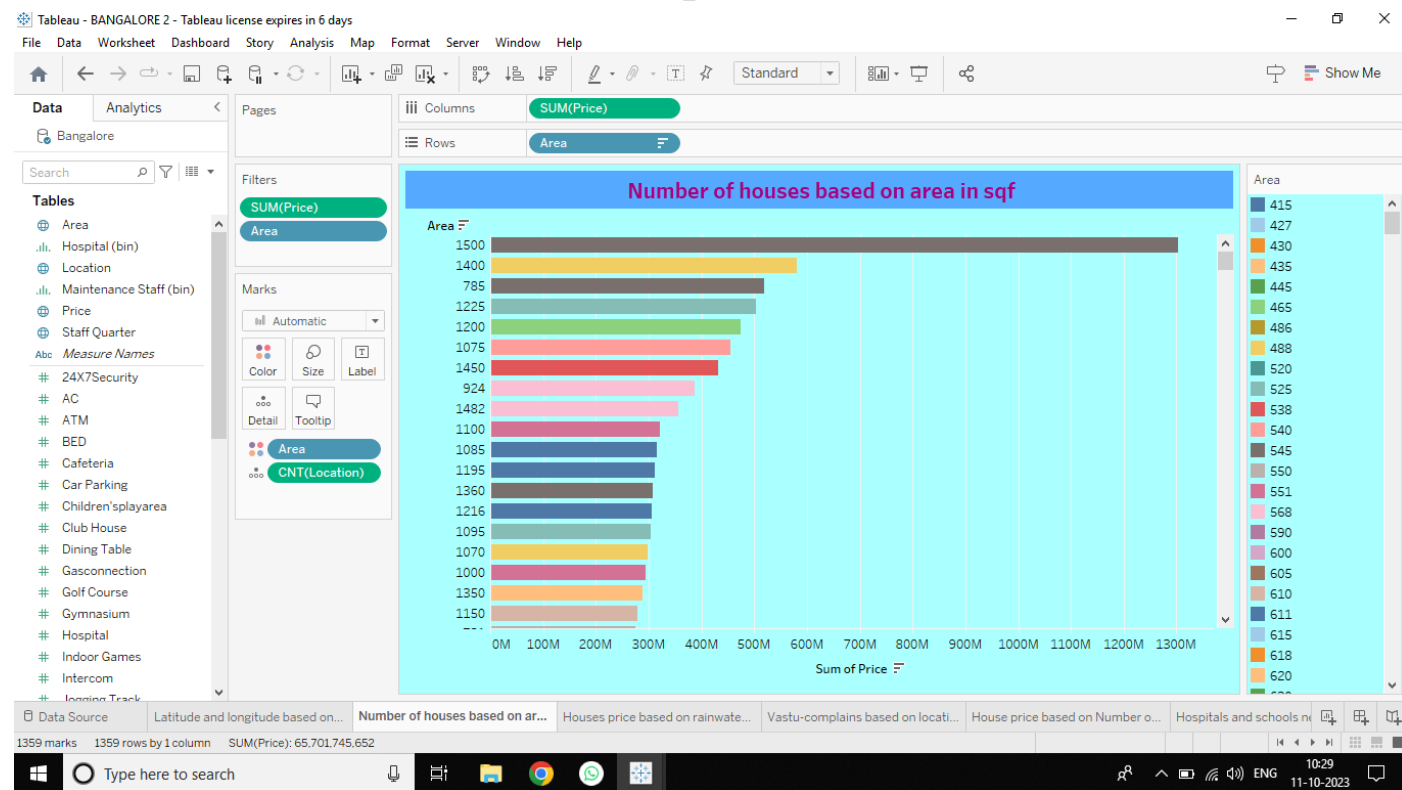
. LATITUDE AND LONGITUDE BASED ON LOCATION



Description:

Go to worksheet, Area drag to the row and Price drag to the column. Top on the right corner show me option select bar chart. Area drag to the colour and edit. CNT(Location) drag to the details . price and area drag to the filters

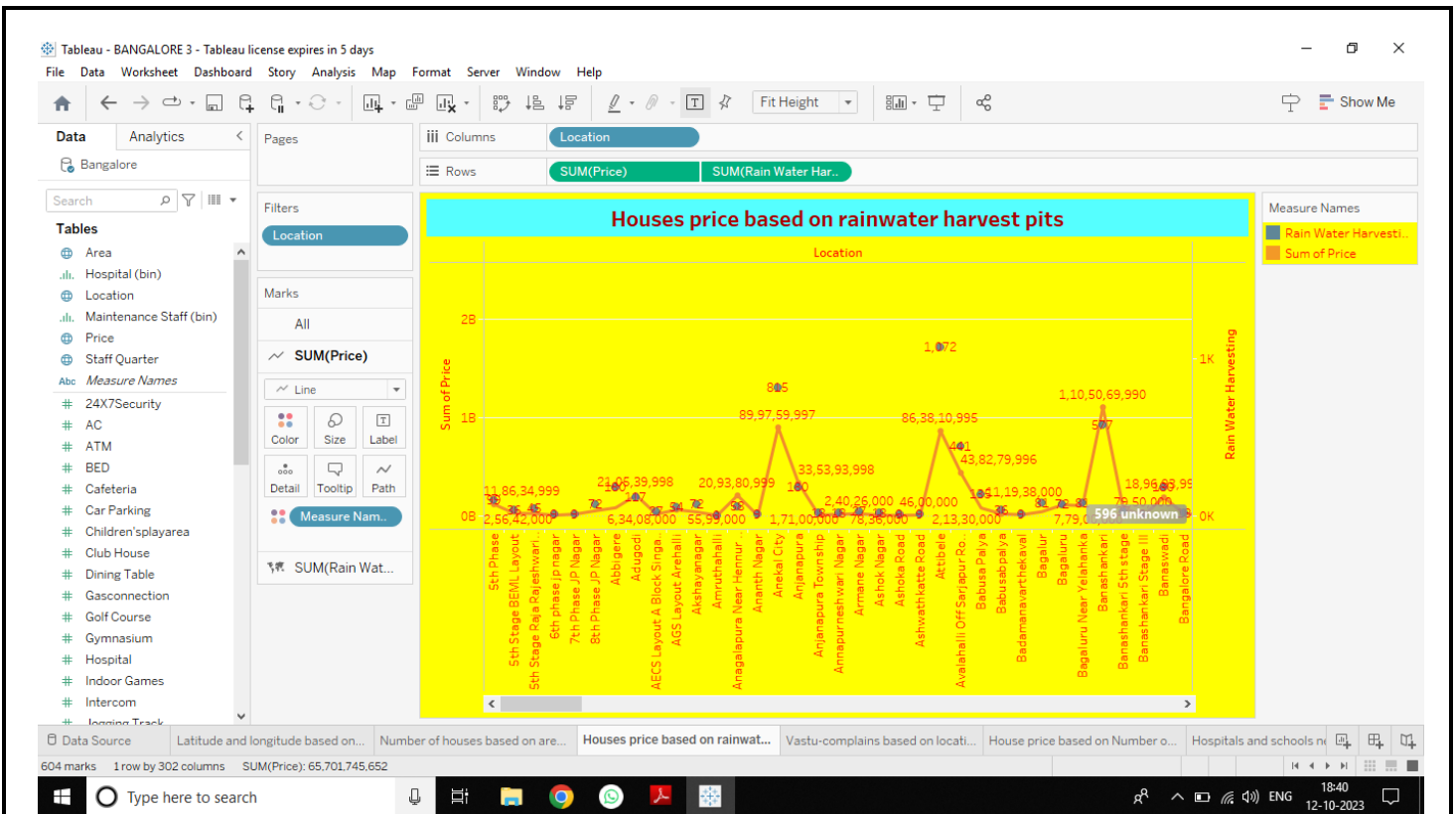
Number of House Based on Area in Spf



Description:

Creat a worksheet. Location drag to the columns and Price,Rainwater harvesting drag to the row. Rain water harvesting right click and change dual axis,Rain water harvesting and price drag to the colour and edit.price change line,rain water harvesting change chang map.change the sheet name.

Houses Price Based on Rainwater Harvest Pits

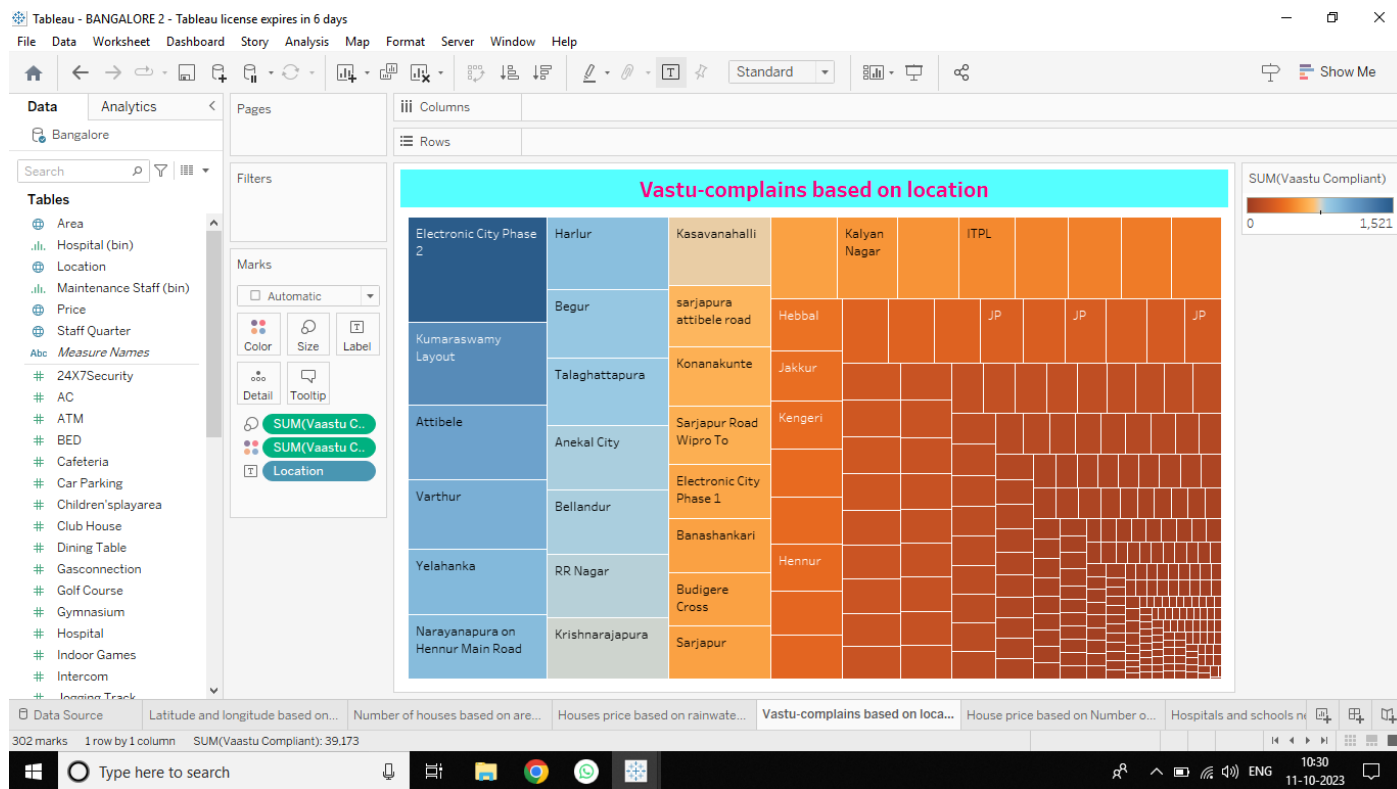


Description:

Go to the new worksheet. Vastu complaint drag to the column and Location drag to the row.

Show me the option select to the tree map. Sum vastu complaint drag to the colour and edit.vastu complaint drag to the size,location drag to the label.and change to the sheet name.

Vastu- Complains Based on Location

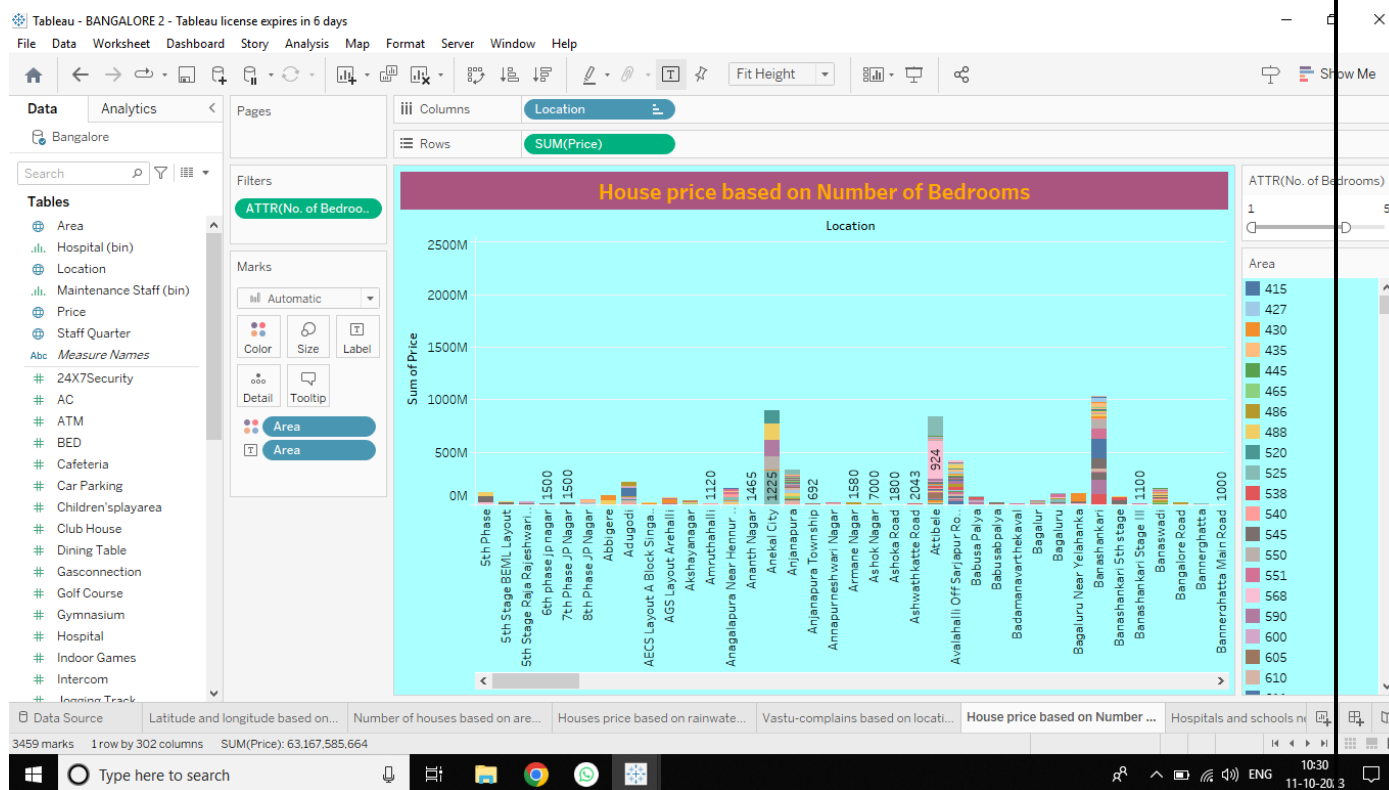


Description:

Create a new worksheet. Location drag to the columns and Price drag to the row.

Area drag to the colour and edit. NO.of Bedrooms drag to the filters ,area drag to the label and right click no.of bedrooms select to the show filters.and change to the sheet name.

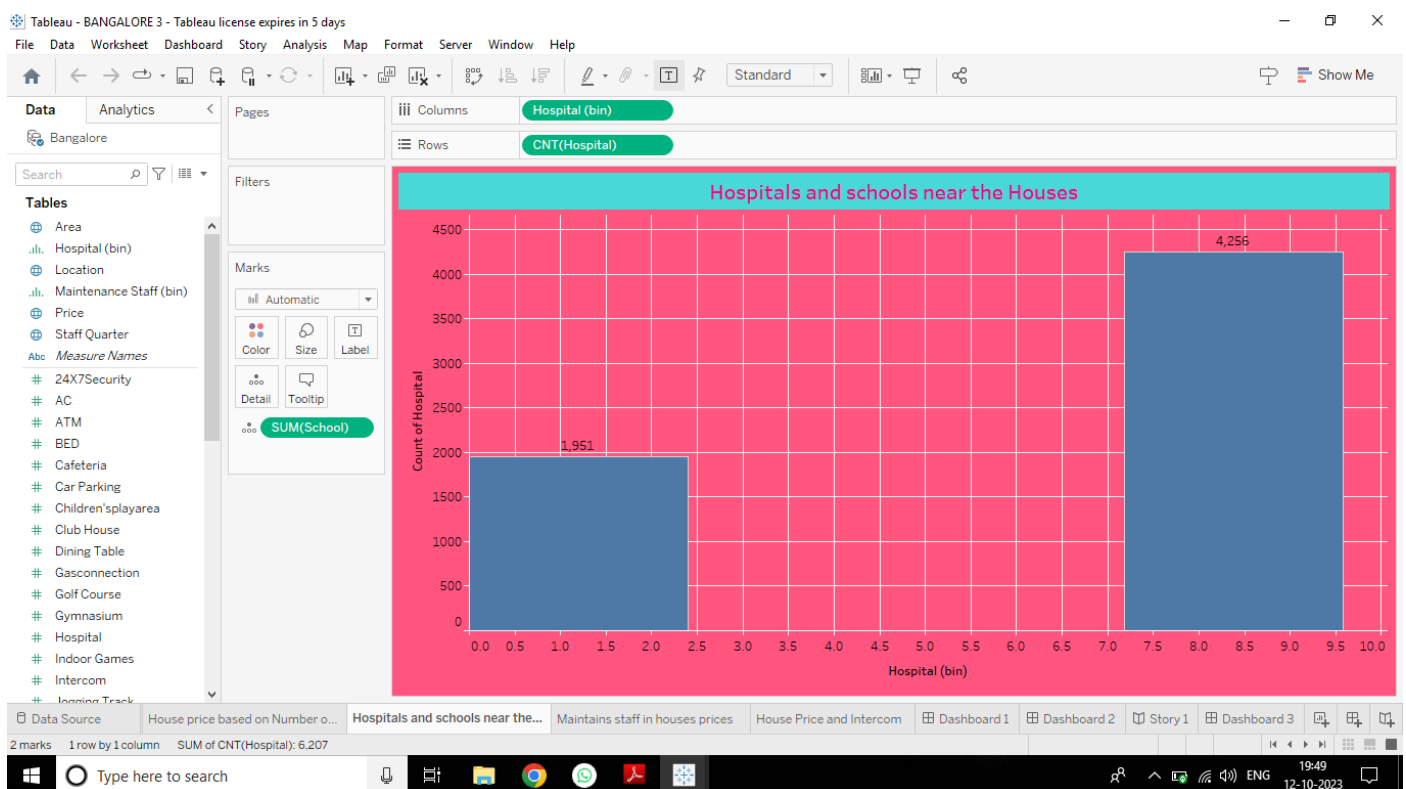
Houses Price Based on Number of Bedrooms



Description:

Go to worksheet. Hospital drag to the columns and school drag to the rows. School drag to the details.top on right corner show me option select the tree map.change to the sheet name.

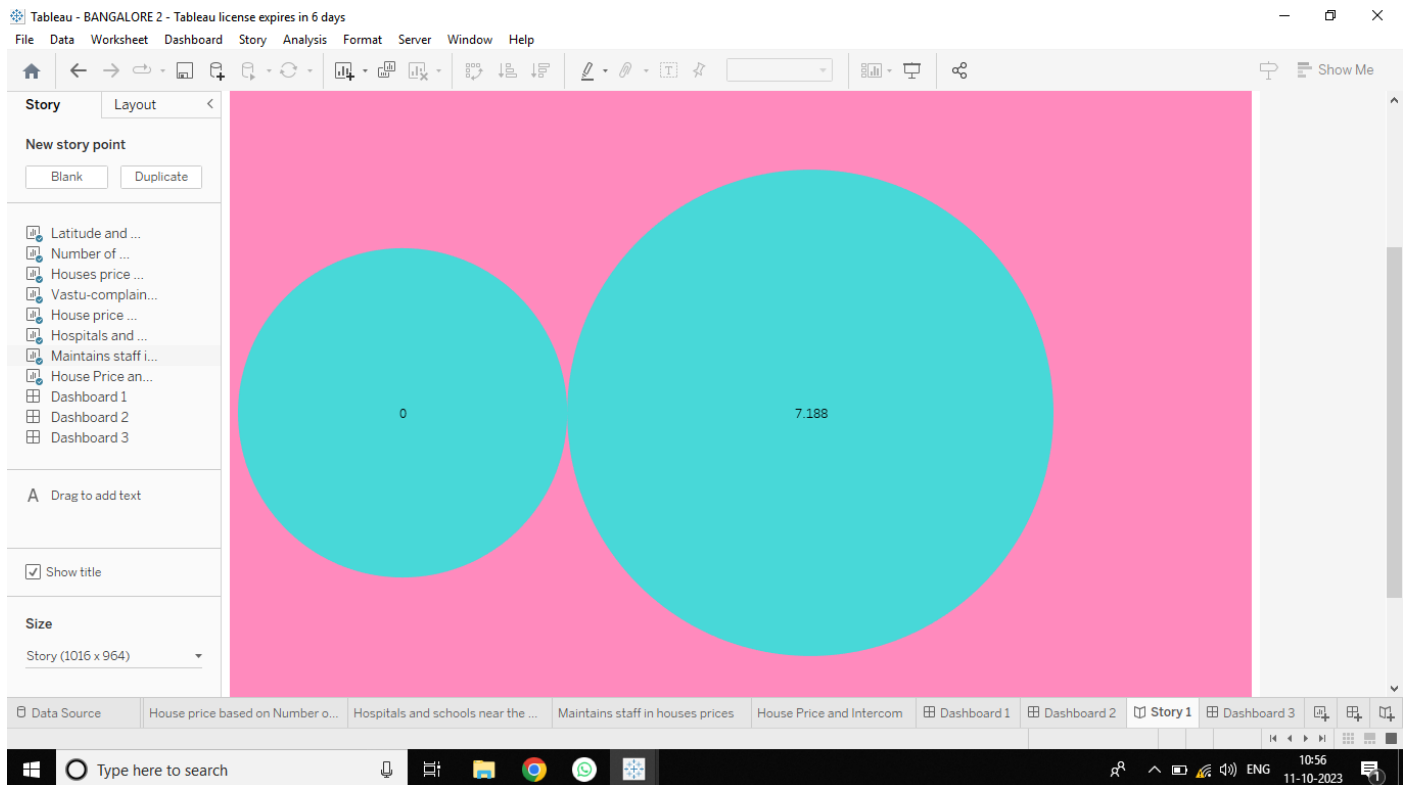
Hospital And Schools Near The Houses



Description:

Create a new worksheet. Maintain staff and price drag to the row. Maintain staff drag to the colour and edit. Again maintain staff drag to the Label .change entire view .
Next change to the sheet name.

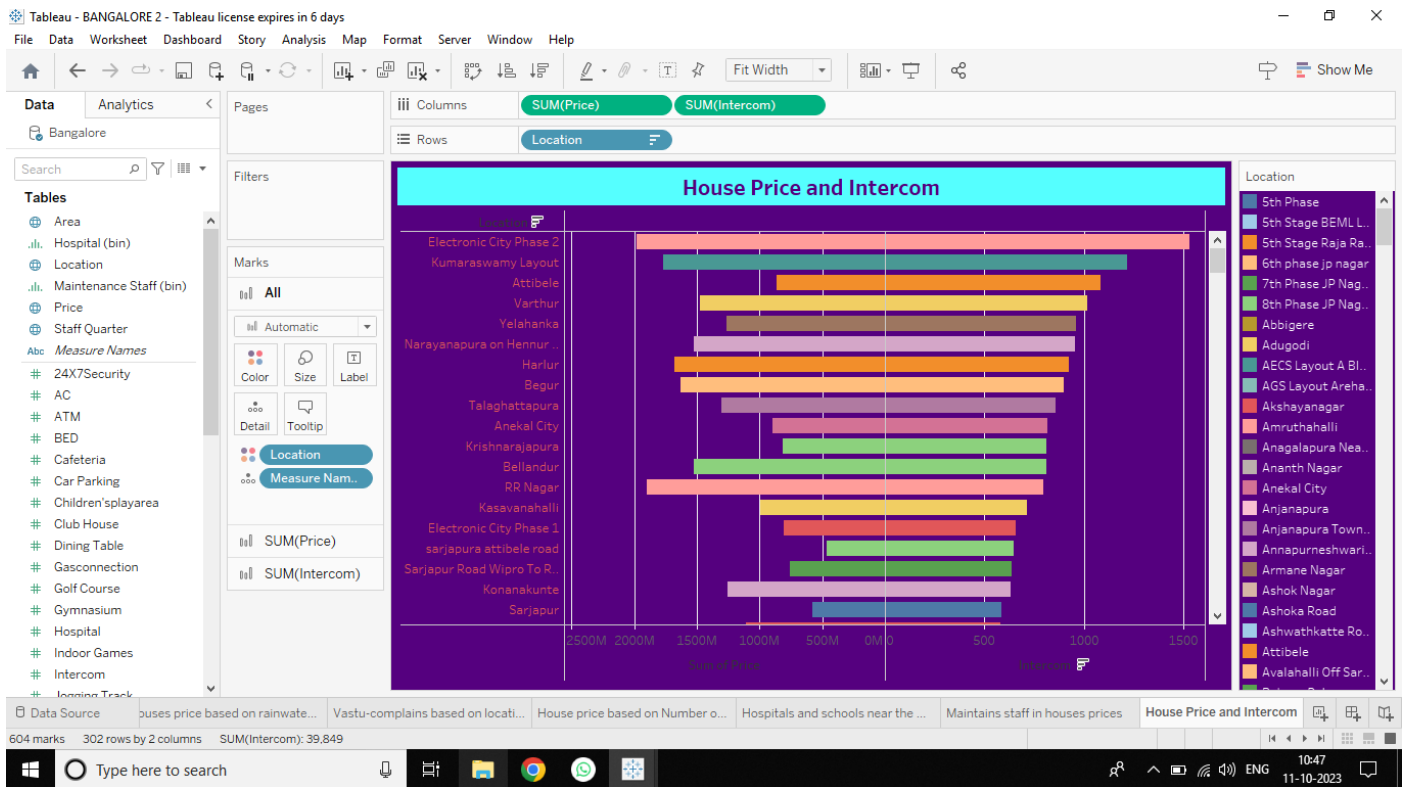
Maintains Staff In Houses Prices



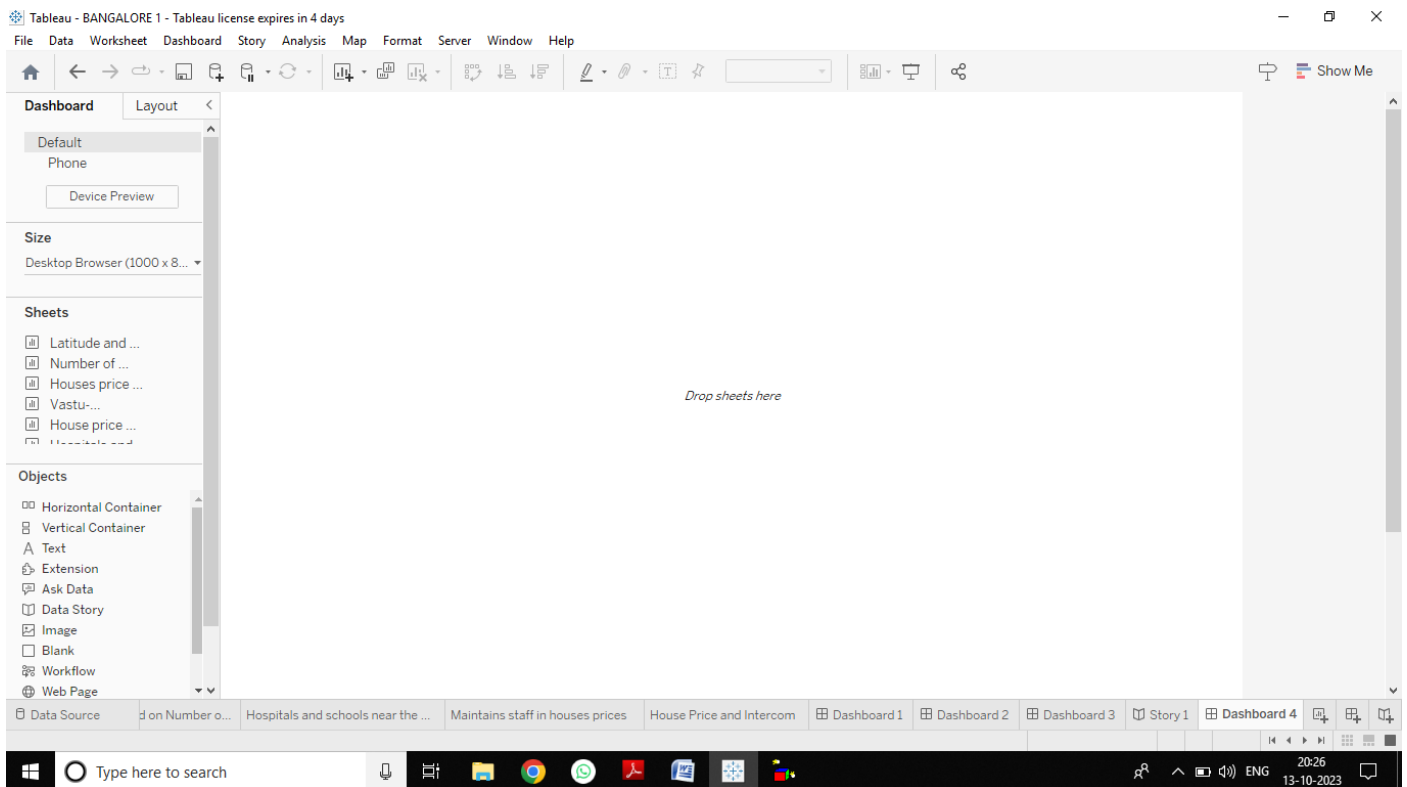
Description:

Go to new worksheet. Price and Intercom drag to the columns, Location drag to the Rows. Top on right corner show me option select the horizontal bars. .location drag to the colour and edit. intercoms row axis right click and select the edit axis and choose the reversed .next change to the sheet name.

Houses Price And Intercom

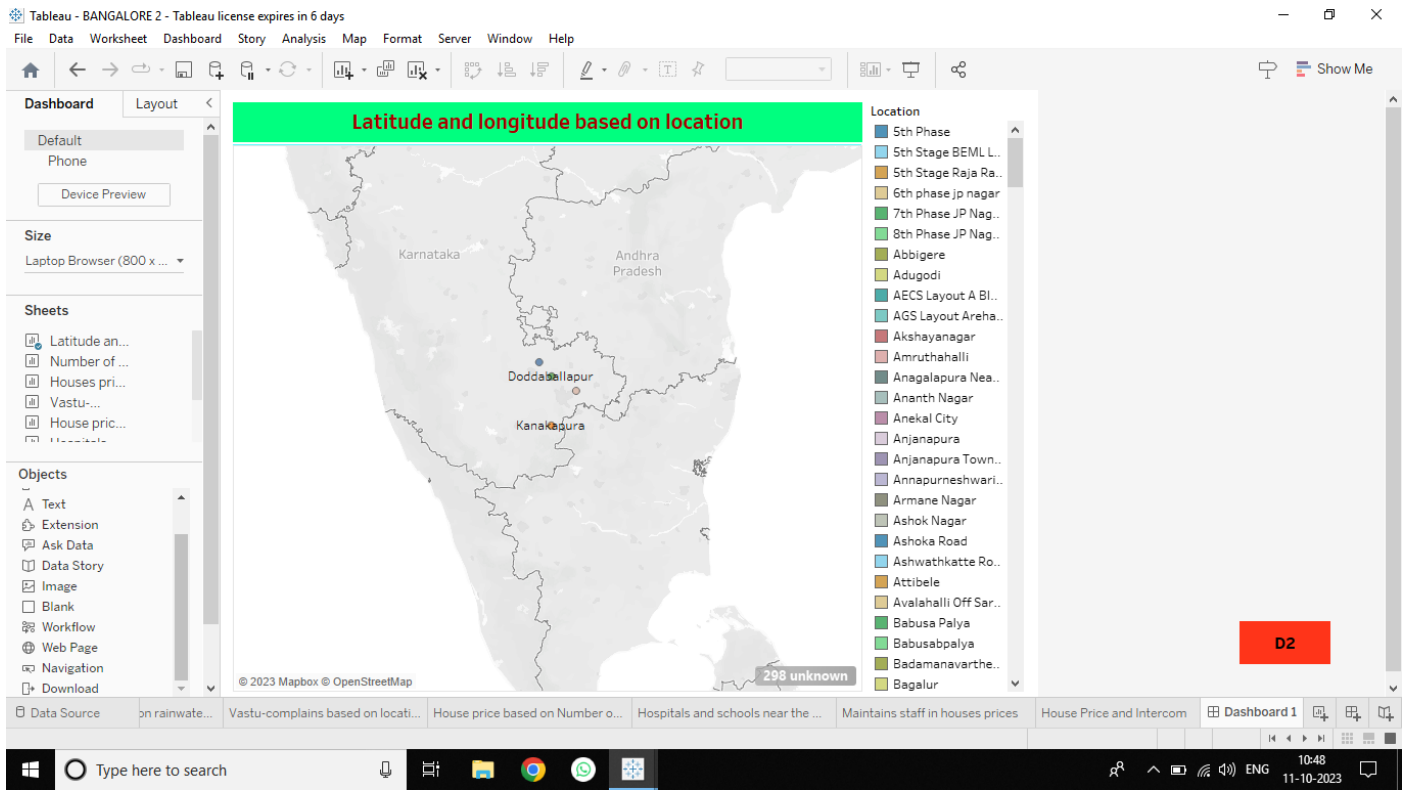


Open the Dashboard and drag the all chart sheet



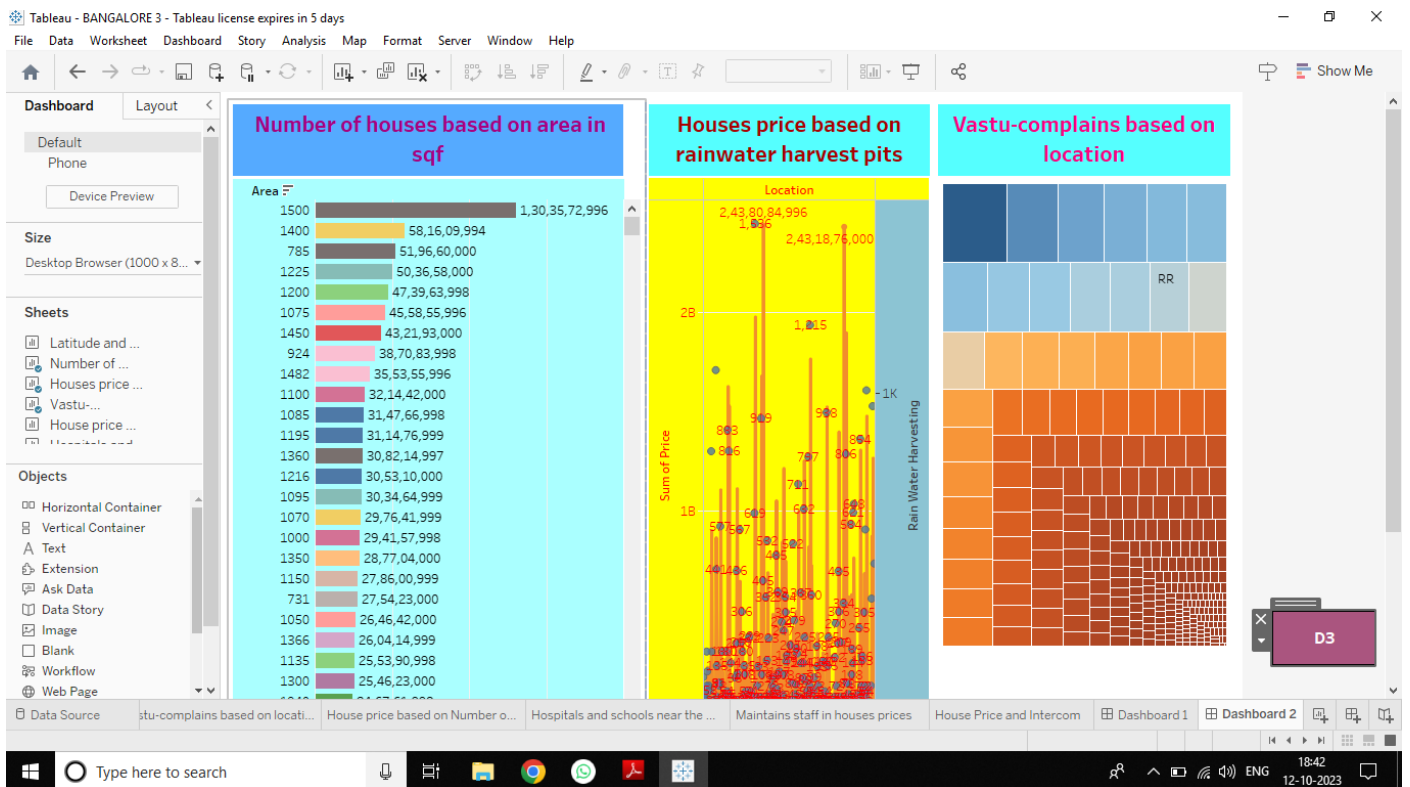
Dashboard 1:

Latitude and Longitude based on Location drag to the dashboard 1.



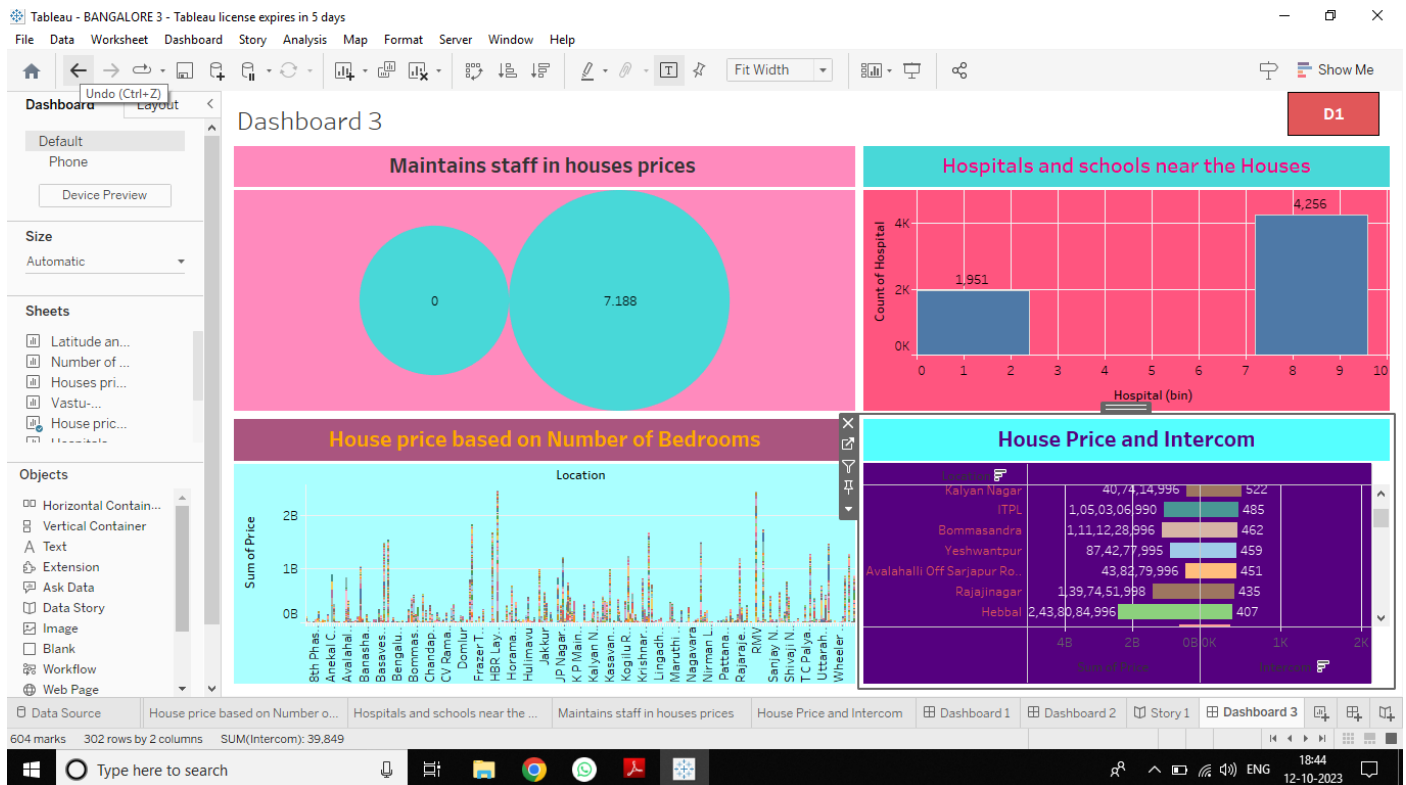
Dashboard 2:

Number of houses based on area in spf, Houses price based on rainwater harvest pits, Vastu-complains based on location drag to the dashboard 2.



Dashboard 3:

Houses prices based on number of bedrooms,Hospital and schools near the houses,Maintains staff in houses prices,Houses price and intercom drag to the dashboard 3.



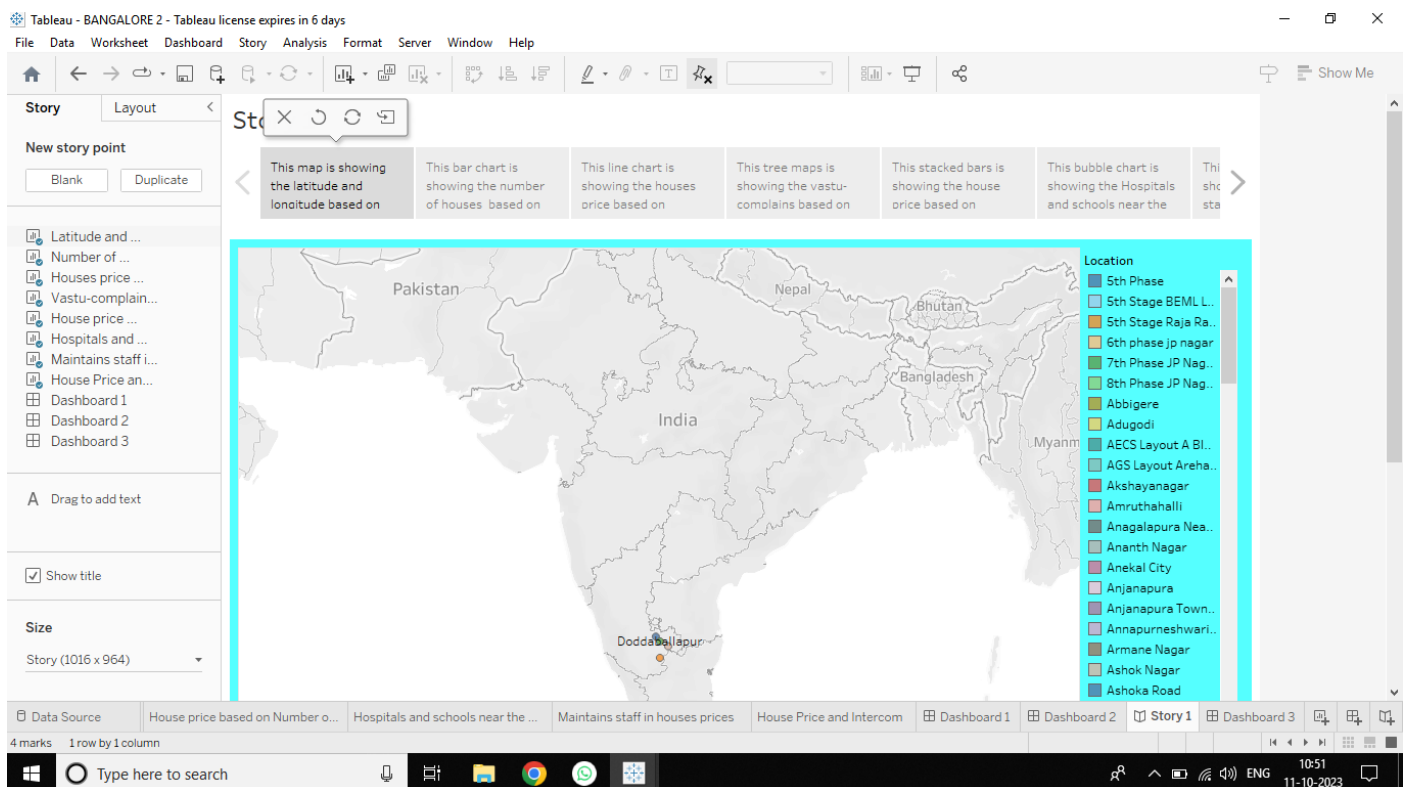
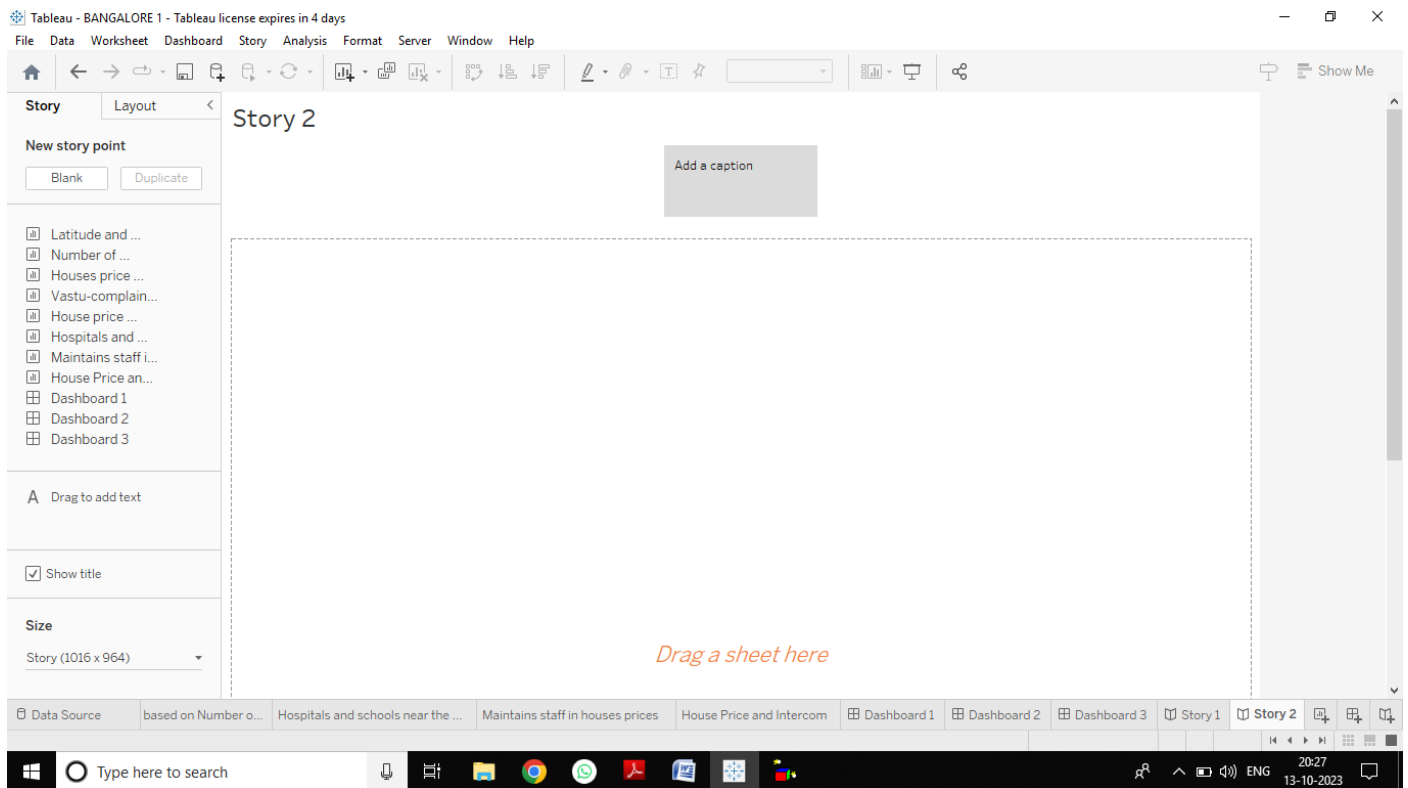
STORY :

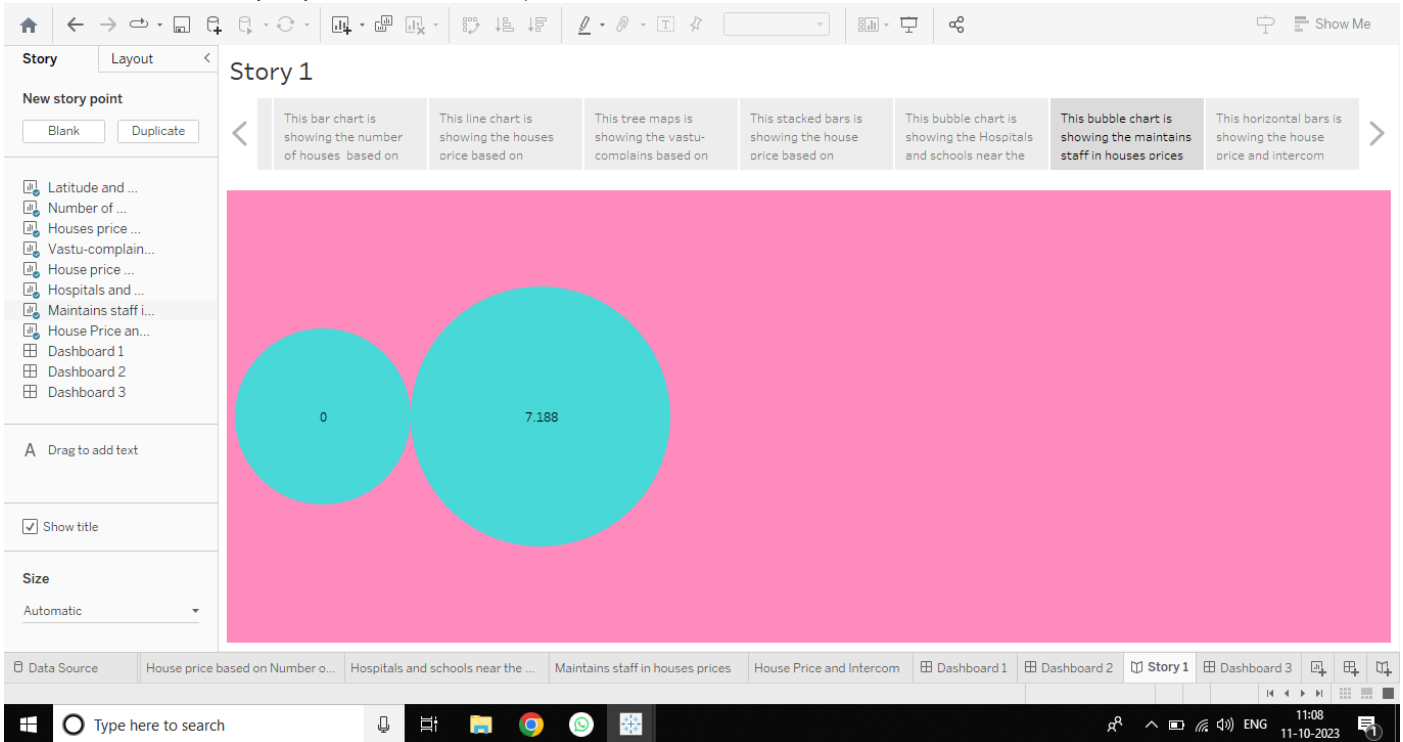
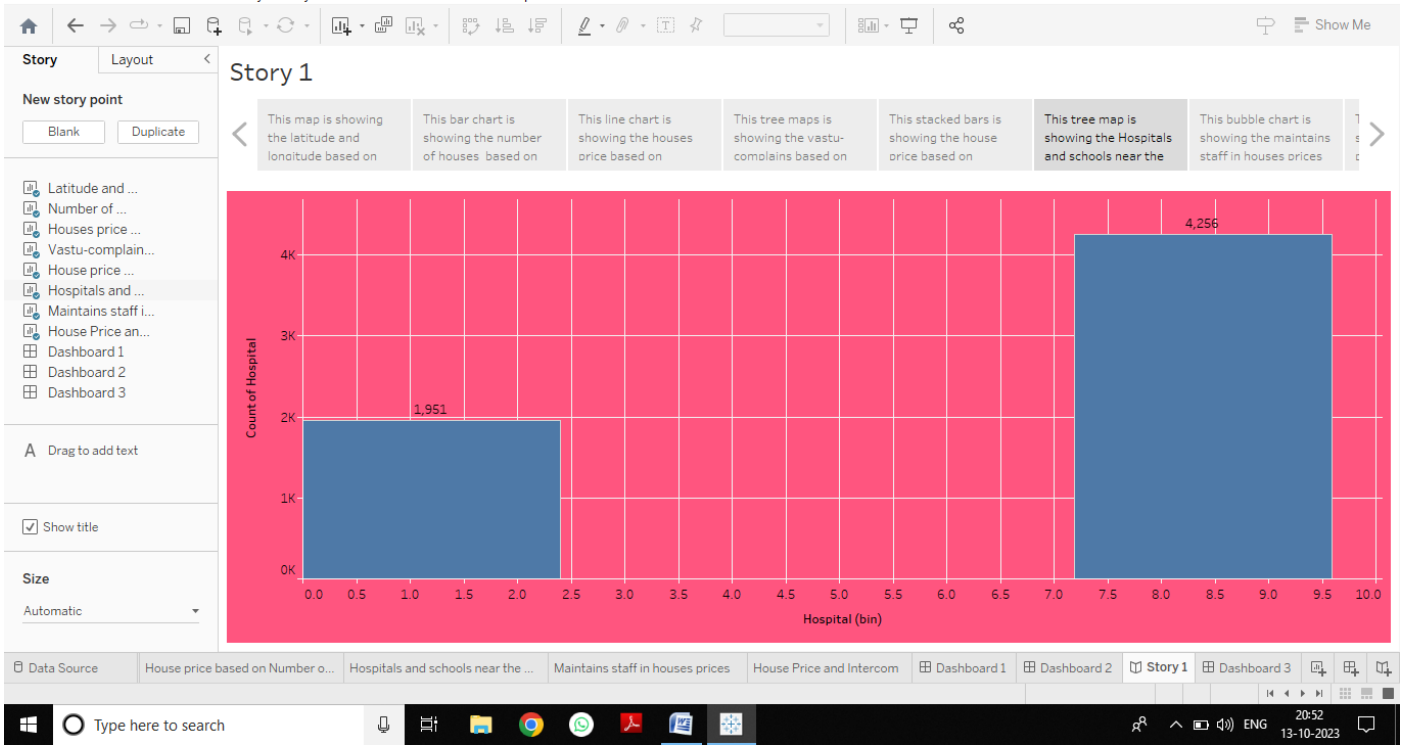
A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

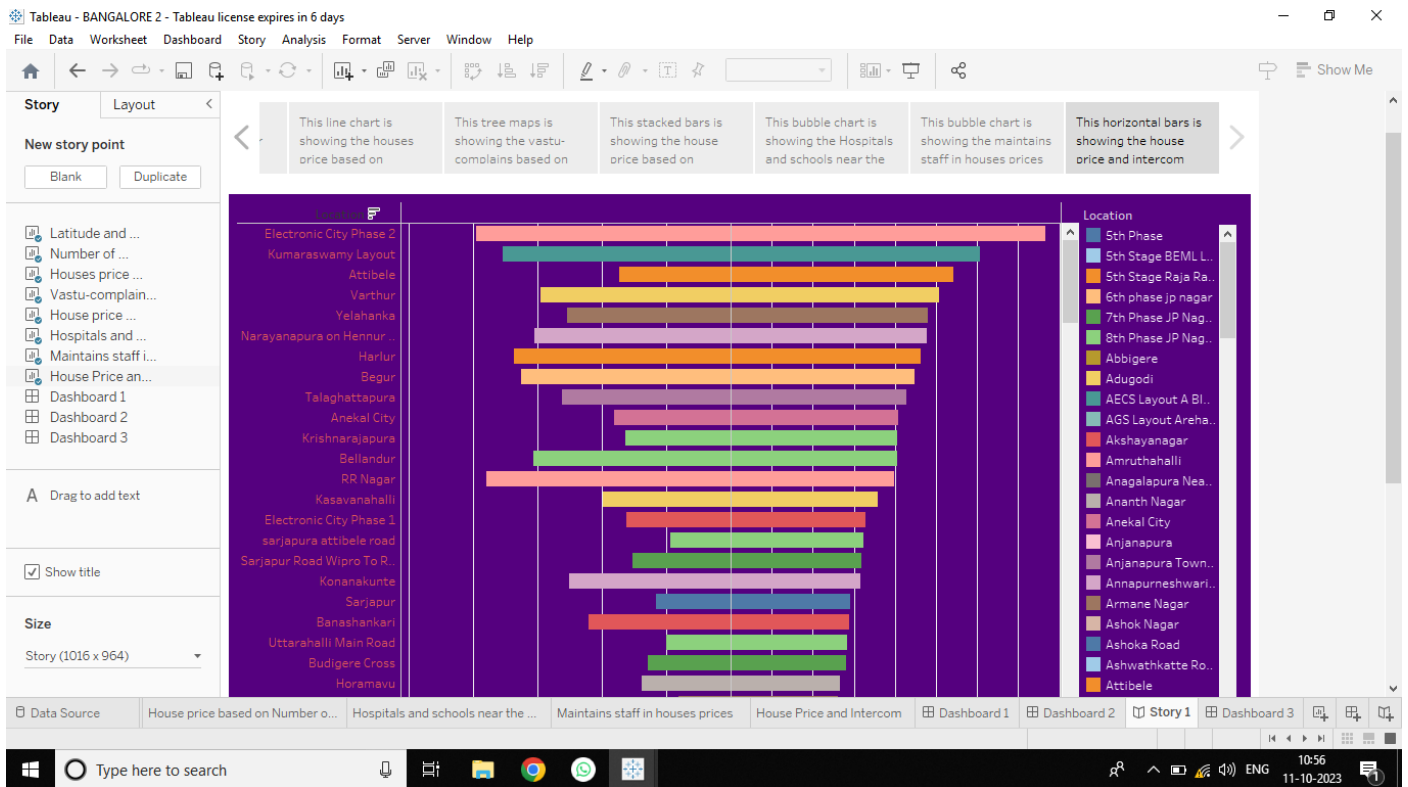
Activity 1: No of Scenes of story

The number of scenes in a story board for a data visualization analysis of the

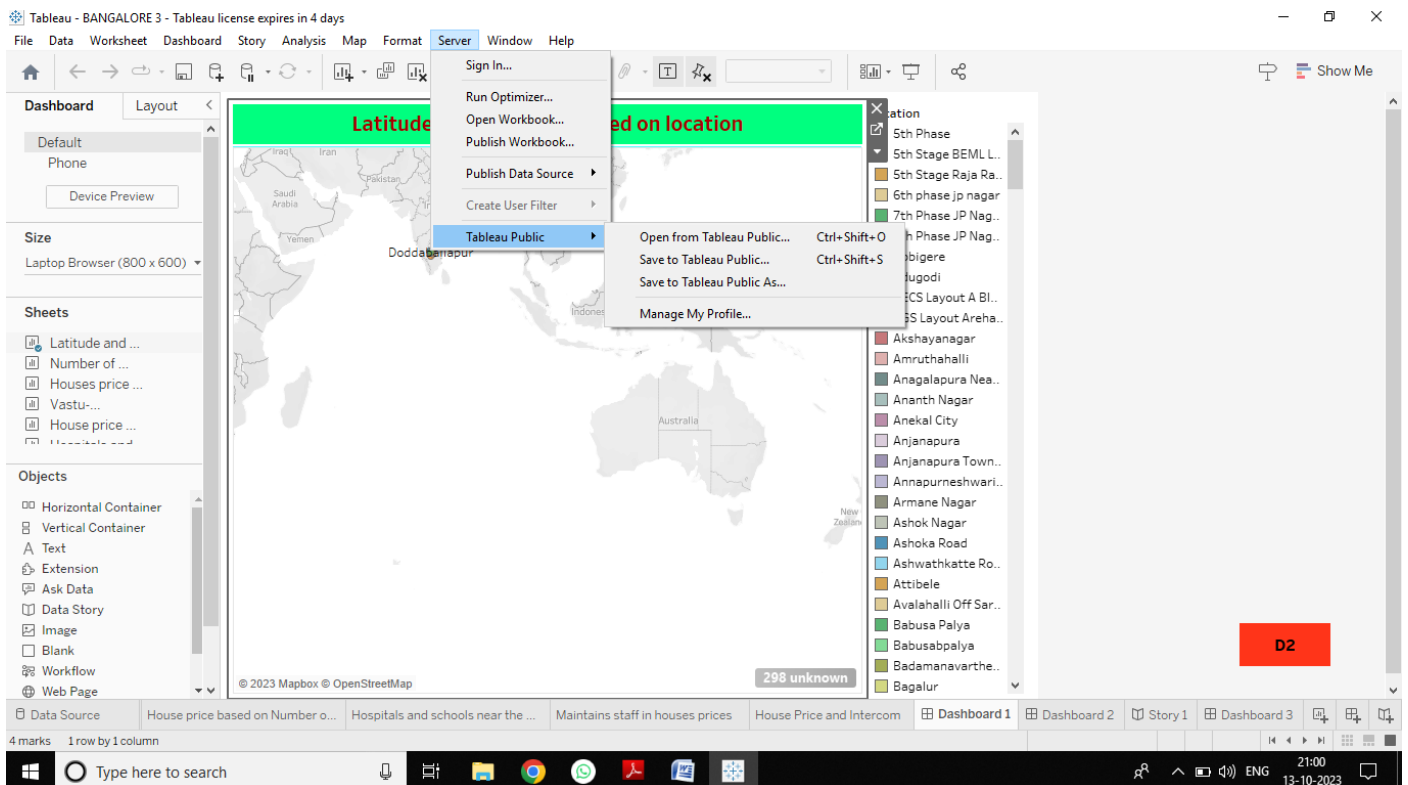
performance of banks will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.



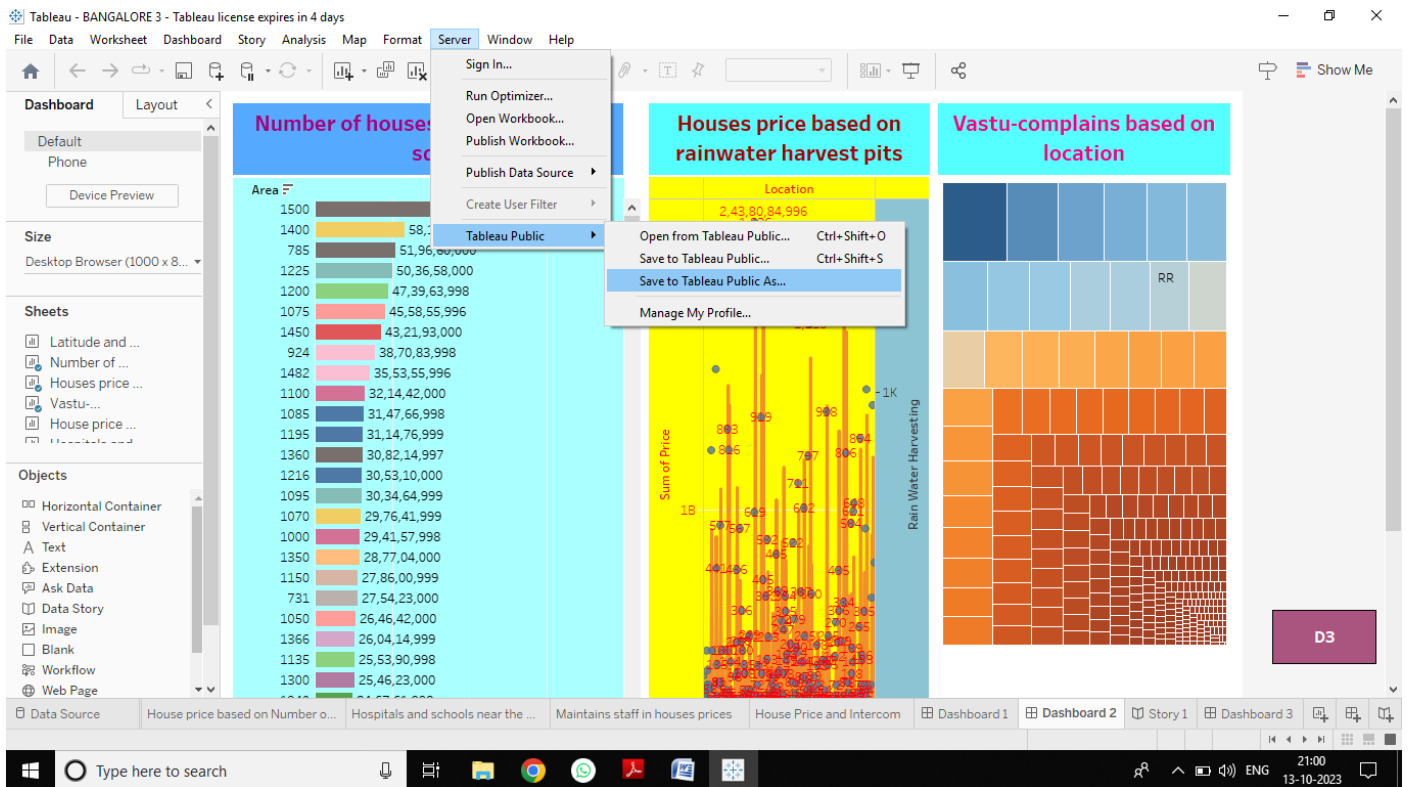




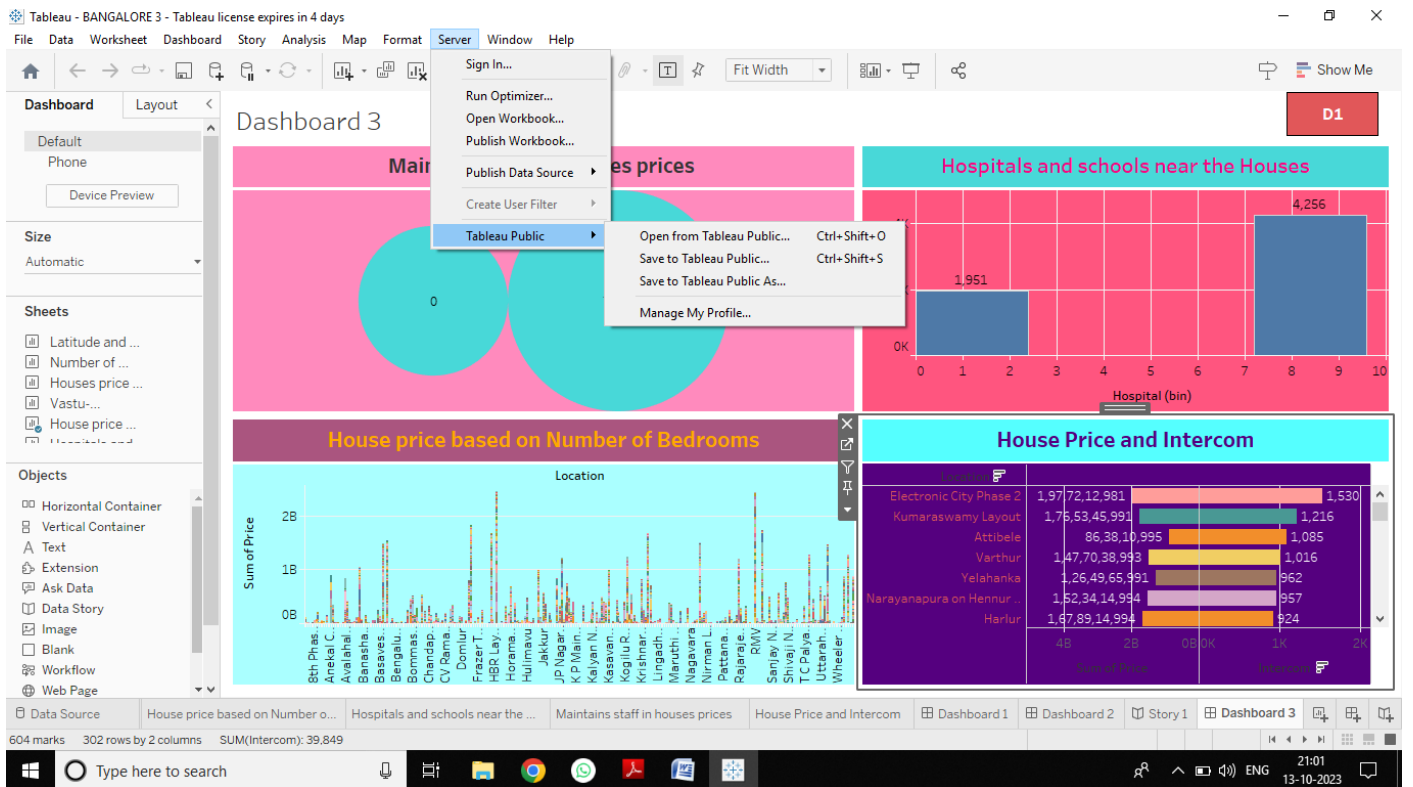
Publishing the Dashboard 1:



Dashboard 2 :



Dashboard 3:



Go to the server option Tableau Public is save to tableau Public As. Option , go to the Tableau website.

Description :

Sign in the gmail in to the website and save to the data sheet. Publishing the Dashboard and download the all charts is convert to the pdf.

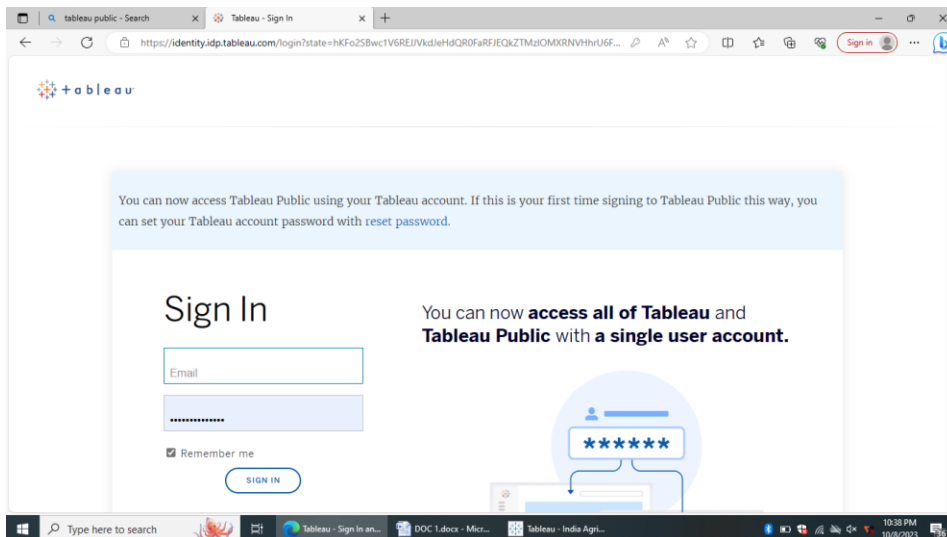


Tableau Public Url :

Dashboard 1:

https://public.tableau.com/views/BANGALORE3/Dashboard1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

Dashboard 2 :

https://public.tableau.com/views/dashboard2_16971760543020/Dashboard2?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

Dashboard 3 :

https://public.tableau.com/views/dashboard3_16971766018110/Dashboard3?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

Story link :

ADVANTAGES & DISADVANTAGES

Advantages :

A data-literate workforce supports a data-driven company, which can be more efficient and productive. But more than that, data is one of the biggest drivers of innovation. The benefits of data literacy translate into competitive advantage for our business:

- ❖ Cut costs and raise revenues with better, faster decisions.
- ❖ Increase innovation with data.
- ❖ Create better customer experiences with customer data.
- ❖ Improve employee and applicant experiences.

Disadvantages :

Rest assured, data literacy training is always an advantage. A lack of resources could force an organization to deprioritize data literacy, but that doesn't make data literacy a disadvantage. If someone sees a data literacy program as a waste of resources, they've failed to recognize the overwhelming benefits of a data-literate workforce.

APPLICATIONS:

Customers have successfully established community-led support by Using champion-created content, and escalating to the analytics or IT team for system-level issues, such as server and database access.

- ❖ Department or team champion.
- ❖ Channel-based communication or chat.
- ❖ Data doctor office hours.

- ❖ Analytics support ticket.

CONCLUSION :

There are endless advantages to growing our data literacy skills —
And there is no disadvantage to investing in data literacy skills training.
From students to professionals to managers, everyone should plan to continue developing data literacy skills throughout their career. If we're a student, a parent, or an educator, learn more in our article about the benefits of data literacy in education. Companies have an opportunity to lean into data literacy skills to improve job satisfaction and return business value

FUTURE SCOPE :

- ❖ Real-time data visualization..
- ❖ Accessing, analyzing, exploring and visualizing live operational Data
- ❖ Linking different data sources to provide for continuous intelligence on a real-time basis.
- ❖ Data volumes will continue to increase and migrate to the cloud.
- ❖ Data analytics will have a huge role to play for the market In the coming years. They will be recognized as the data protectors. They will preserve the privacy of data, detect intrusions, etc.
- ❖ The IoT which is an abbreviation of the Internet of Things will see tremendous growth.
- ❖ The coming days will be the golden time for tremendous growth in cognitive analysis.

