PROJECT REPORT

1.INTRODUCTION:

1.1 Project Overview:

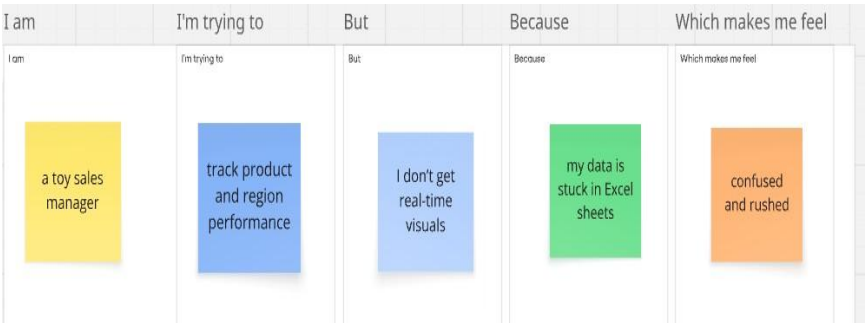
ToyCraft Tales is a data-driven initiative focused on providing valuable insights into the toy manufacturing industry. It highlights key trends, product performance, customer preferences, and market dynamics through engaging visual storytelling, helping stakeholders make informed business decisions.

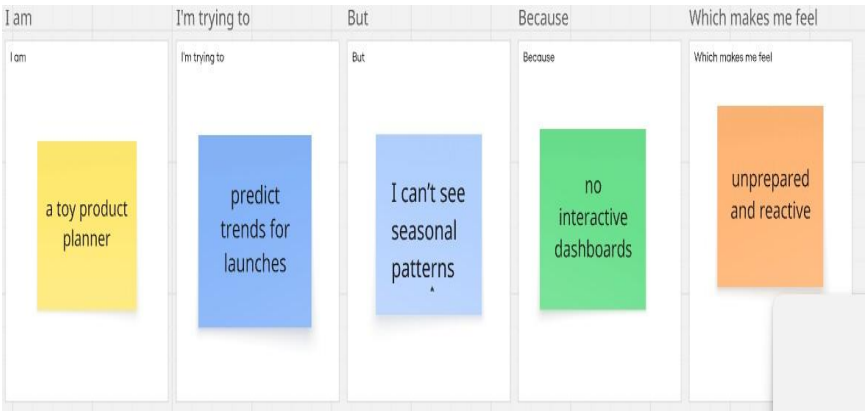
1.2 Project Purpose

ToyCraft Tales aims to provide meaningful insights into the toy manufacturing industry. By visualizing data on sales, product trends, and customer preferences, the project helps manufacturers make informed, strategic decisions to improve performance and meet market demands.

2.IDEATION PHASE:

2.1Problem statement:





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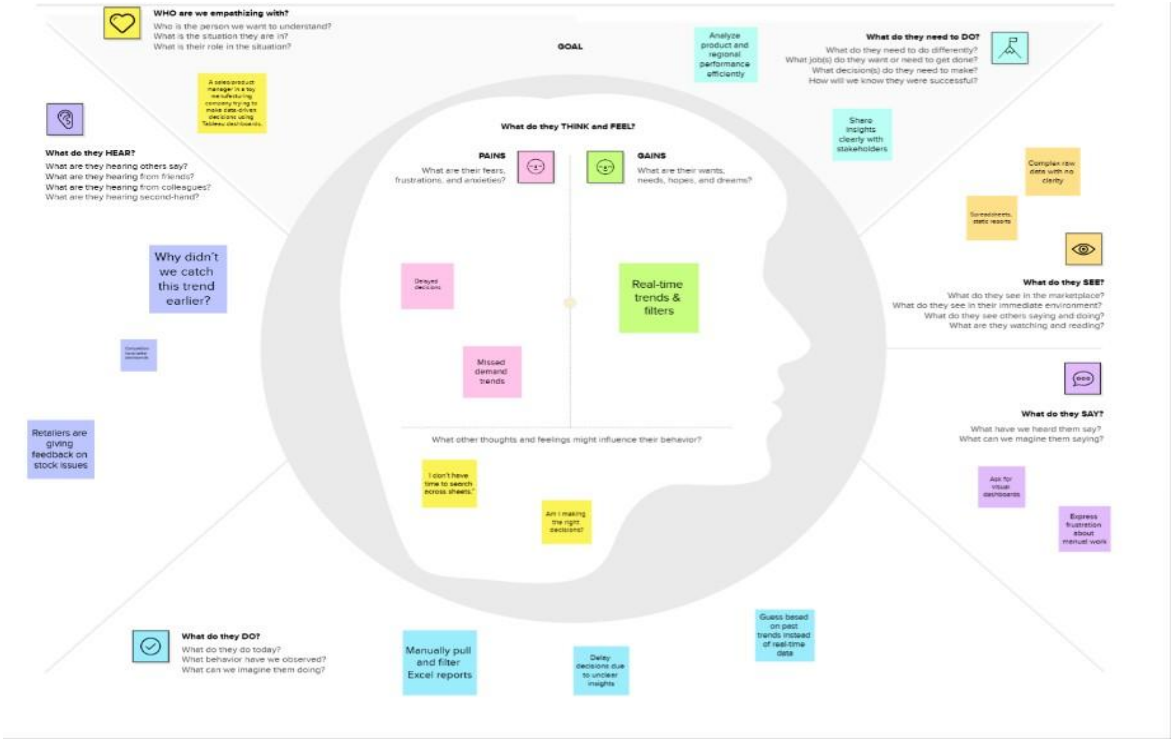
Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a toy sales manager	track product and region performance	I don't get real-time visuals	my data is stuck in Excel sheets	confused and rushed
PS-2	a toy product planner	predict trends for launches	I can't see seasonal patterns	no interactive dashboards	unprepared and reactive

2.2

Empathy Map Canvas:



2.2 Brainstorming & Ideation:

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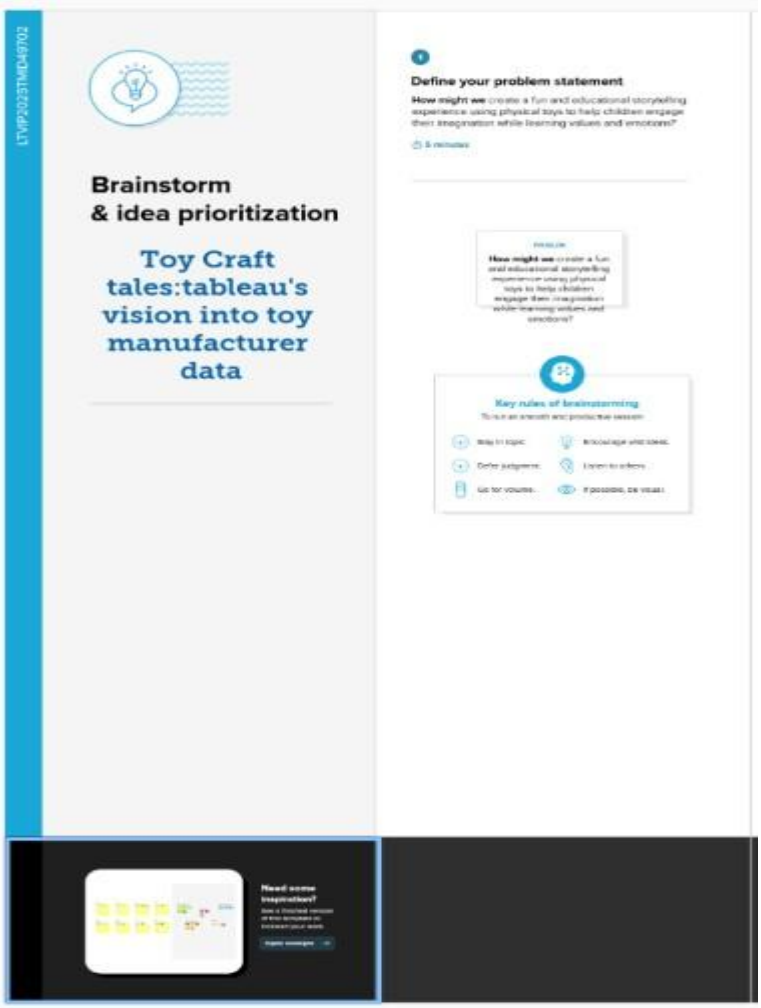

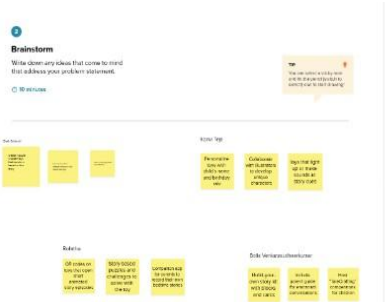

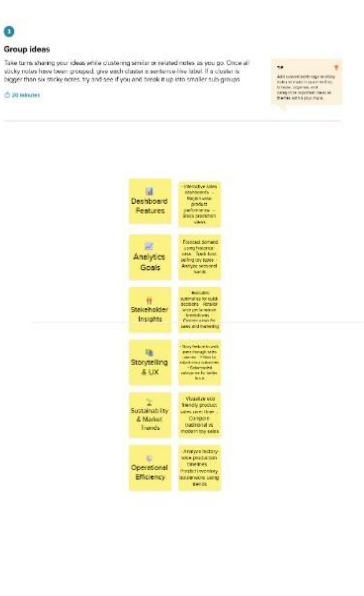

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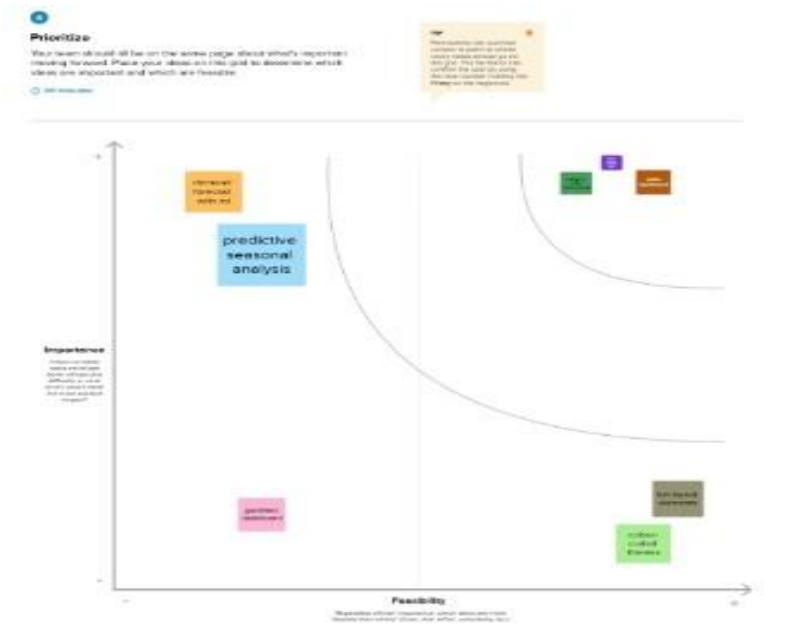
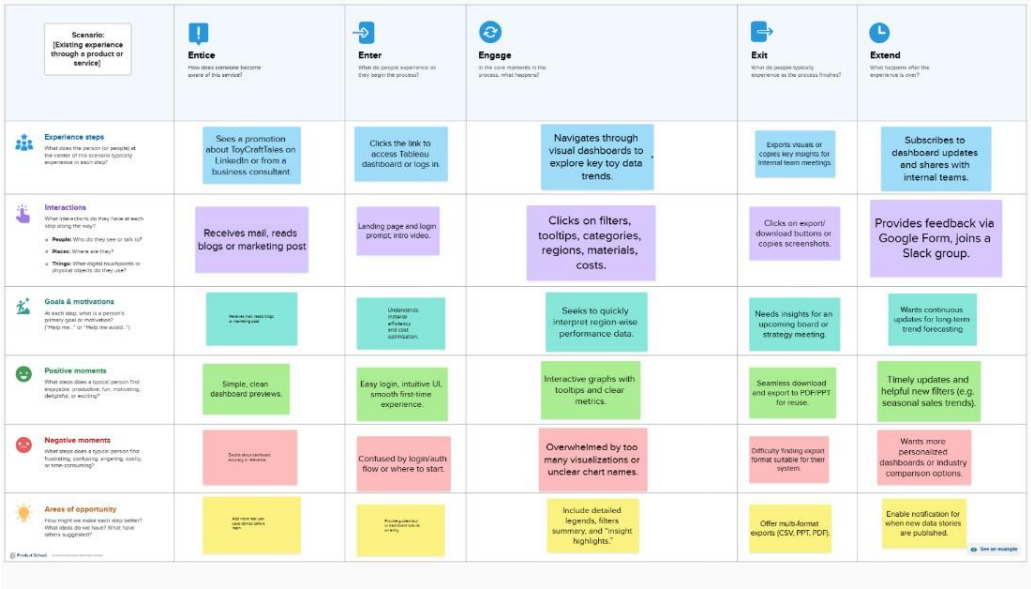


3.REQUIREMENT ANALYSIS:

3.1:Customer Journey Map:



3.2:Solution Requirement:

Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)

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FR-1	Data Acquisition & Validation	• Download dataset from Kaggle • Check data types and structure • Store original file securely
FR-2	MySQL Schema & ETL	• Design relational schema (fact & dimension tables) • Load and clean data using SQL • Create indexes & refresh jobs
FR-3	Tableau Data Connection & Modeling	• Connect Tableau to MySQL Server • Define joins and relationships • Create calculated fields and hierarchies
FR-4	Interactive Dashboard Design	• Build dashboards for sales, region, category, etc. • Add filters, tooltips, and parameters • Enable drill-down to SKU level
FR-5	Storytelling & Publishing	• Create story points in Tableau • Add narrative text and flow • Publish to Tableau Server/Cloud with access control

Non-Functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Dashboards are intuitive, tooltips enabled, 3-click access to key metrics.
NFR-2	**Security**	Use role-based access, encrypted connections (TLS), and secure publishing via Tableau Server.
NFR-3	**Reliability**	Data refresh jobs monitored, backups scheduled daily, alert setup for data failures.
NFR-4	**Performance**	Dashboards load within 5 seconds; filters and visuals update with minimal delay (< 2 sec).
NFR-5	**Availability**	System accessible 24/7 with high availability Tableau deployment; no downtime during updates.
NFR-6	**Scalability**	Supports 10x data growth and 5x more users via extract partitioning and scalable server configuration.

3.3:Data Flow Diagram:

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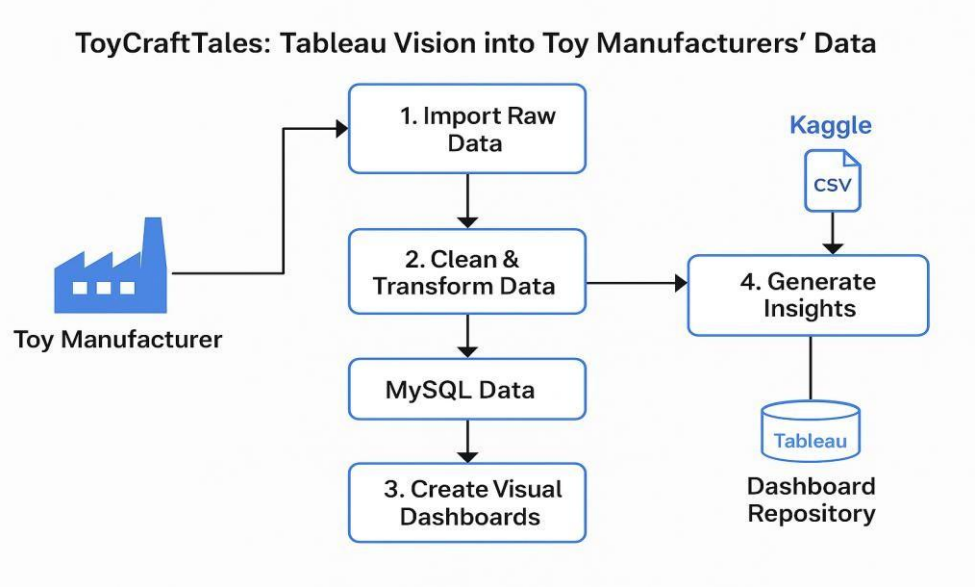

3.4:Technology stack:

component	Tool/technology	purpose	Output fo
Data source	Kaggle dataset(CSV,Excel)	Collecting raw toy sales, categories, material, and production data	CSV / Excel file
ETL / Preprocessing	MySQL, Excel Formulas	Cleaning, filtering, and preparing schema before importing into Tableau	Structured Ta
Visualization	Tableau Desktop	Building charts like bar graphs, maps, scatter plots, dashboards, and story	Tableau Work (.twb/.twbx)
Storage	Google drive/local storage	Maintaining raw, intermediate, and final datasets securely	Folder with .cs

4.PROJECT DESIGN:

4.1:Problem Solution Fit:

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4.2:Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Toy manufacturers face challenges in understanding market demand, production efficiency, material usage, and regional performance due to lack of interactive data insights. This limits their ability to make datadriven decisions.

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2.	Idea / Solution description	ToyCraftTales is a data-driven solution leveraging Tableau dashboards to provide manufacturers with real-time visual insights from toy production and sales data. It includes dashboards for sales trends, material analysis, region-wise demand, and brand comparison—enabling smarter, faster decision-making.
3.	Novelty / Uniqueness	The solution uniquely combines data from various sources (Kaggle, internal datasets) and uses MySQL + Tableau to build visual stories tailored specifically for toy manufacturing challenges. Unlike generic BI dashboards, it focuses deeply on toy-specific KPIs such as toy type trends, seasonal demand, and materialcost optimization.
4.	Social Impact / Customer Satisfaction	Helps small and medium toy businesses become more competitive by accessing affordable, visual business intelligence. Enhances production efficiency, reduces material wastage, and ultimately leads to better, more affordable toys reaching children.
5.	Business Model (Revenue Model)	Freemium model: Free basic dashboard version for all manufacturers, with a premium subscription for advanced insights, industry benchmarking, and AI-powered recommendations. Potential for B2B
		partnerships with toy brands and analytics firms.
6.	Scalability of the Solution	Easily scalable to other manufacturing sectors (e.g., garments, electronics) by modifying the dataset schema. Can integrate more real-time data sources like IoT production logs or ERP exports in future iterations.

4.2:Solution Architecture:

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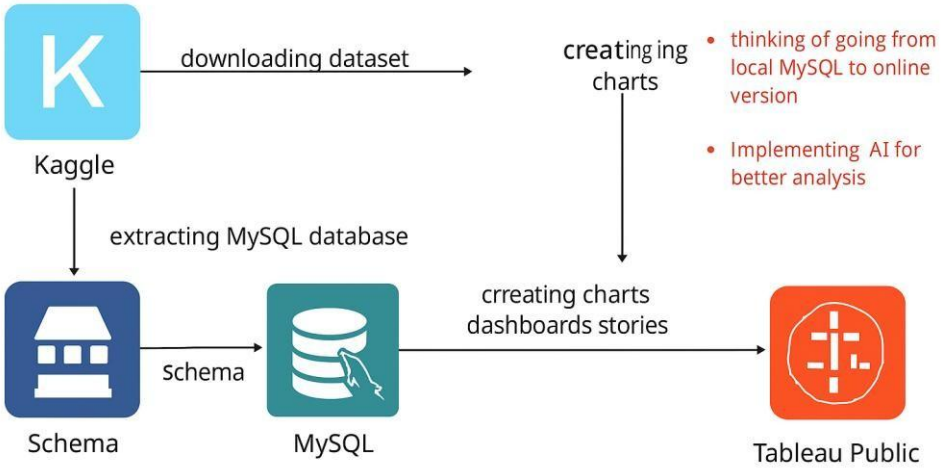
Toycraft Tales: Tableuo Vision into Toy Manufacturer's Data



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	USN-1	As a user, I can collect toy manufacturing datasets from Kaggle to start preprocessing.	2	High	ALL
Sprint-2	Data Cleaning	USN-2	As a user, I can clean and structure data using MySQL so that it's ready to be used in Tableau.	3	High	ALL
Sprint-3	Dashboard Design	USN-3	As a user, I can design charts for sales trends, regional demand, and material cost analysis	4	Hiigh	ALL
Sprint-4	Story Buiding	USN-4	As a user, I can interact with data stories to understand trends and insights effectively.	3	Medium	ALL
Sprint-5	Deployement	USN-5	As a user, I can publish the dashboards on Tableau Public for access by toy manufacturers.	2	Medium	ALL

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Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	1 Day	28 June 2025	28 June 2025	20	28 June 2025
Sprint-2	20	1 Day	29 June 2025	29 June 2025	20	29 June 2025
Sprint-3	20	1 Day	30 June 2025	30 June 2025	20	30 June 2025
Sprint-4	20	1 Day	1 July 2025	1 July 2025	20	1 July 2025
Sprint-5	20	1 Day	2 July 2025	2 July 2025	20	2 July 2025

6.FUNCTIONAL &PERFORMANCE TESTING:

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Rendered 10,000+ rows from Kaggle dataset including toy names, prices, ratings, regions, materials.
2.	Data Preprocessing	Null values removed, 4 tables normalized, MySQL used for schema setup and joins.
3.	Utilization of Filters	Filters used: Region, Brand, Material, Age Group, Rating, Price Range.
4.	Calculation fields Used	Avg Material Cost, Sales Growth %, Rating Score, Units Sold/Region, Profit Margin.
5.	Dashboard design	No of Visualizations / Graphs – 1 Dashboard
6	Story Design	No of Visualizations / Graphs -5 stories with 1 story point each

7.RESULTS:

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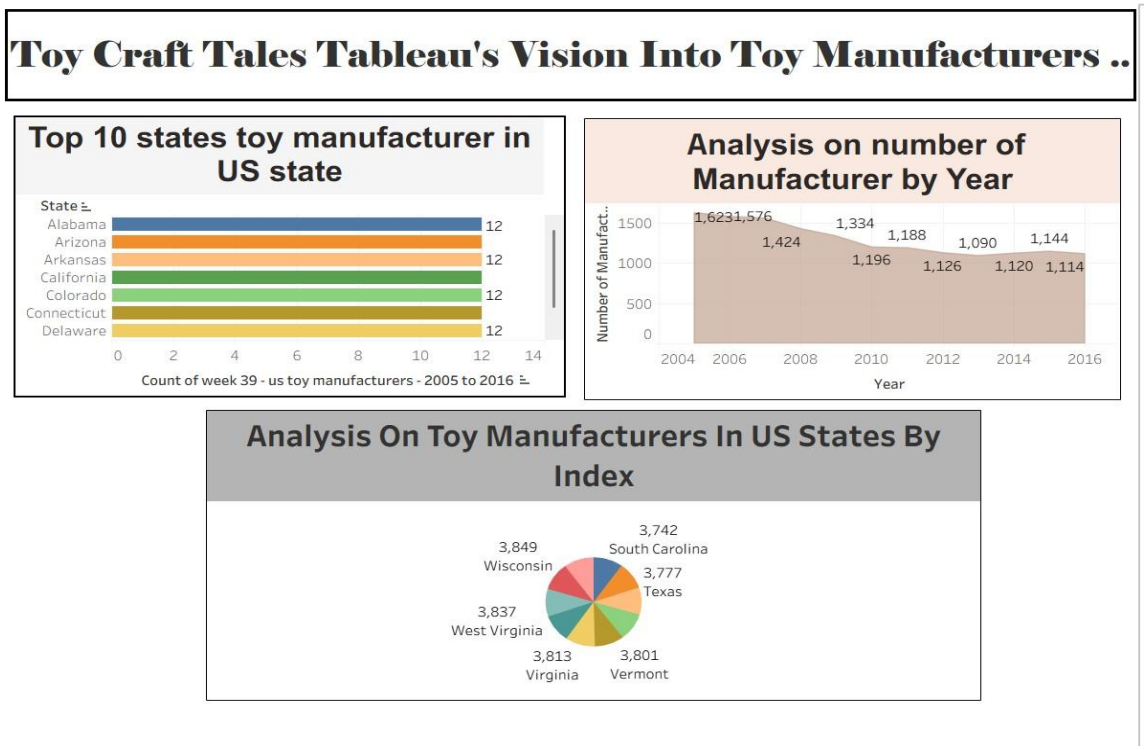
7.1:Output Screenshots:



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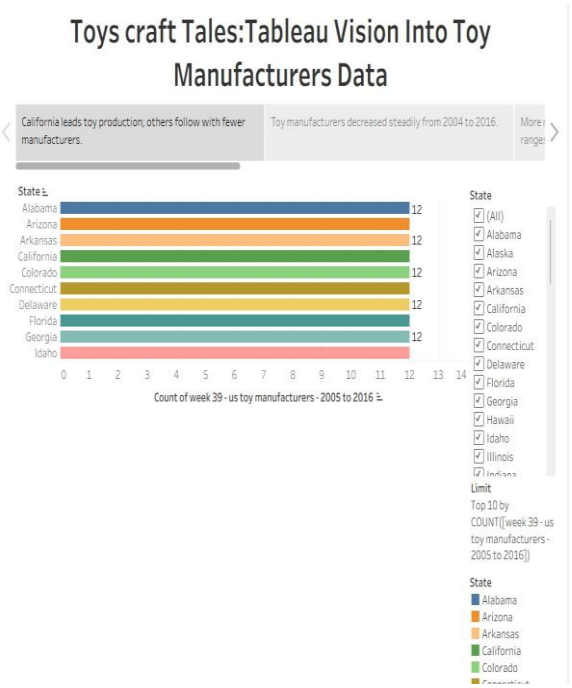

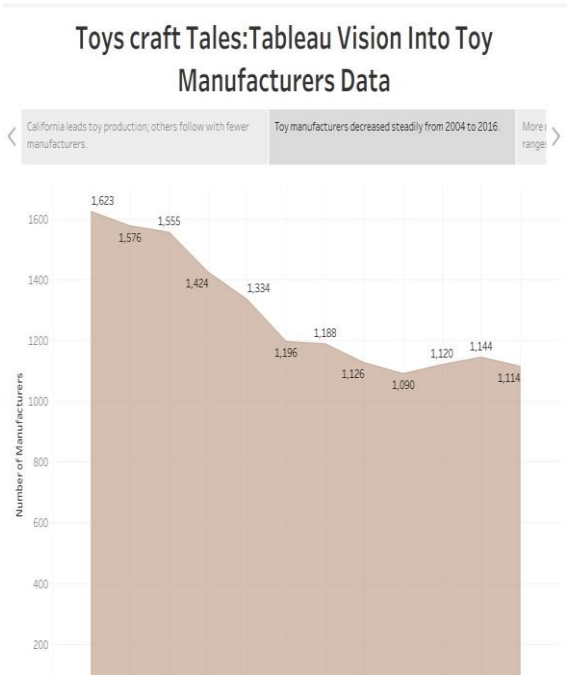

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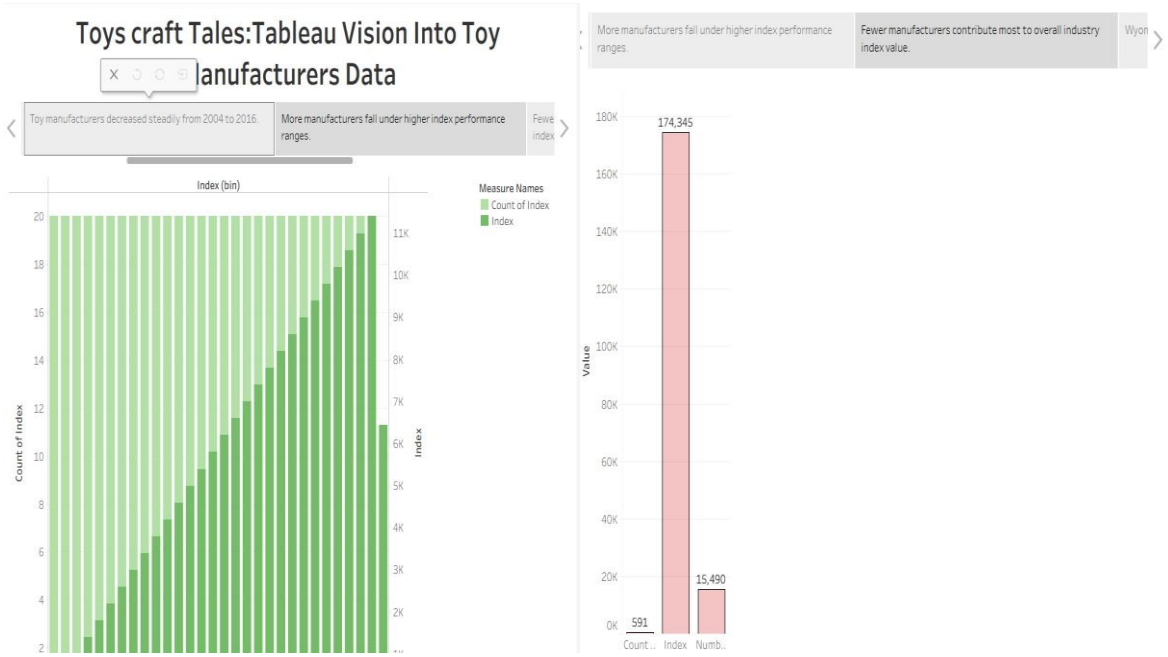

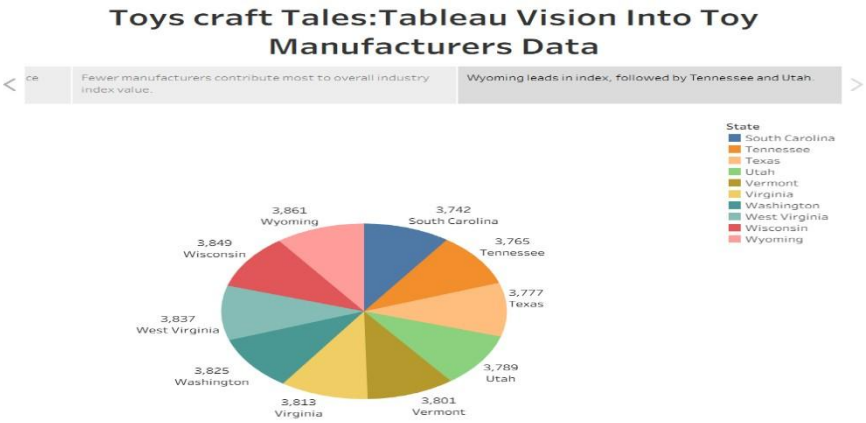

8.ADVANTAGES & DISADVANTAGES:

Advantages

- Provides toy manufacturers with clear visual insights, helping in informed decision-making regarding sales, demand, and trends.
- Tableau dashboards offer interactive filtering and drill-down capabilities for better data exploration.
- Efficient data handling by integrating structured databases into Tableau improves reliability and performance.
- The architecture is flexible and can be expanded with more datasets or updated dashboards without major changes.

Disadvantages:

- Requires re-importing or refreshing data manually if the Kaggle dataset updates, unless automated.

- Using a local MySQL server limits accessibility and collaboration; an online solution would be more scalable.
- Since it's based on static dataset snapshots, it doesn't reflect real-time data unless a pipeline is implemented.
- Requires knowledge of SQL, data modeling, and Tableau, which might be challenging for nontechnical users.

9.CONCLUSION:

The *Toycraft Tales: Tableau Vision into Toy Manufacturer's Data* project successfully demonstrates the power of data visualization in enhancing strategic decision-making for toy manufacturers. By integrating Kaggle-sourced data, structured MySQL schemas, and Tableau's dynamic visualization capabilities, the project transforms raw data into actionable insights. While there are some limitations like reliance on static datasets and local database constraints, the overall architecture remains scalable, insightful, and adaptable. With future enhancements like cloud-based databases and AI-driven analytics, this solution holds strong potential for wider industry application and smarter manufacturing strategies.

10.FUTURE SCOPE:

The project can be enhanced by moving the database to the cloud for better accessibility, automating data updates with ETL pipelines, integrating AI for predictive insights, optimizing dashboards for mobile use, and connecting with ERP/CRM systems for comprehensive analysis.

11.APPENDIX:

Dataset link:

https://www.kaggle.com/datasets/thedevastator/toy-manufacturersin-us-states?select=Week+39+-+US+Toy+Manufacturers++2005+to+2016.hyper

Project demo link:

https://drive.google.com/file/d/1GreYyK2HYtsLsl0Ap48KLkVCXG-TTxJJ/view?usp=drive_link

Github Link:

https://github.com/rohitha-reddy217/ToyCraft-Tales--Tableau-s-Vision-into-Toy-Manufacturer-Data