Team Detail:

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ToyCraft Tales: Tableau's Vision Into Toy Manufacturer Data

Category: Data Analytics with Tableau

skills Required:Tableau

ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data

strategic decisions and Production patterns, and consumer preferences. Craft interactive visualizations to guide Employ Tableau to delve into Toy Manufacturers' data, uncovering market trends, enhance market competitiveness

The Toy Manufacturers' Data Exploration and Visualization Project aims to leverage the power of Tableau to provide a comprehensive analysis of the toy manufacturing industry. By delving into the vast dataset encompassing various facets of the industry, the project seeks to uncover valuable insights related to market trends, production patterns, and consumer preferences.Utilize Tableau to dissect market trends within the toy manufacturing sector. Explore historical sales data, identify emerging market demands, and highlight patterns that can inform strategic decisions. By visualizing market dynamics over time, the project aims to offer a deep understanding of the industry's evolution.Analyze consumer behavior and preferences by examining data related to popular toy categories, demographic trends, and purchasing patterns. Develop interactive visualizations that highlight consumer preferences, enabling manufacturers to align their product offerings with market demands. This insight is crucial for tailoring product development strategies to meet customer expectations.

Scenario 1:

Market Trend Analysis for Seasonal Products: The project could delve into historical sales data for different types of toys across various seasons and holidays. By visualizing the sales trends over the years, manufacturers can identify patterns in consumer preferences during specific times of the year. For instance, they might find that certain types of toys sell better during the holiday season, while others have higher demand during summer months. Armed with this insight, toy manufacturers can adjust their production schedules and marketing strategies accordingly to maximize sales and meet seasonal demands effectively.

Scenario 2:

Consumer Preference Analysis Across Demographics: Using demographic data such as age, gender, and location, the project could analyze consumer preferences for different types of toys. Interactive visualizations can be created to show how preferences vary among different demographic groups. For example, it might reveal that teenagers in urban areas have a higher preference for electronic toys, while younger children in rural areas prefer traditional toys such as dolls and action figures. This information can help manufacturers tailor their product offerings and marketing campaigns to target specific demographic segments more effectively.

Scenario 3:

Product Performance Comparison Across Regions: By analyzing sales data across different regions or countries, the project could identify which toy categories perform better in certain geographic areas. For instance, it might find that educational toys are more popular in regions with a strong emphasis on education, while outdoor toys sell better in areas with favorable weather conditions. Visualizations could illustrate these regional differences in demand, allowing manufacturers to optimize their distribution channels and inventory management strategies to better serve each market.

Project Flow

To accomplish this, we have to complete all the activities listed below,

Data Collection & Extraction from Database

o Collect the dataset,

o Storing Data in DB

o Perform SQL Operations

o Connect DB with Tableau   Data Preparation

o Prepare the Data for Visualization

Data Visualizations

o Number of Unique Visualizations

Dashboard

o Responsive and Design of Dashboard

Story

o No of Scenes of Story

Performance Testing

o Amount of Data Rendered to DB '

o Utilization of Data Filters

o No of Calculation Fields

o No of Visualizations/ Graphs

Web Integration

o Dashboard and Story embed with UI With Flask

Project Demonstration & Documentation

o Record explanation Video for project end to end solution

o Project Documentation-Step by step project development procedure

Data Collection & Extraction from Database

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes and generate insights from the data

Collect the dataset

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

Toy Manufacturers in US States | Kaggle..

Toy Manufacturer Data by State and Year..

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

understand the data

Data contains all the meta information regarding the columns described in the CSV files. we have provided 1 CSV files:

1. Week 39 - US Toy Manufacturers - 2005 to 2016

Column Description for Week 39 - US Toy Manufacturers - 2005 to 2016

1. State: The state where the toy manufacturers are located. (Categorical)

2. Year: The year during which data was recorded. (Numeric)

3. Number of Manufacturers: The total number of toy manufacturers in a specific state and year. (Numeric)

4. Index: Number of toy manufacturer

5. Week 39 - US Toy Manufacturers - 2005 to 2016

Storing Data in DB & Perform SQL Operations

Explanation video link:

https://drive.google.com/file/d/1IT5zjFj39iHfANGY-K4LoCMd_t3Fp2cK/view?usp=sharing

Connect DB with Tableau

Explanation video link:

https://drive.google.com/file/d/1my-s-fRwF18ChA393xpS0EO_rZMrdASD/view?usp=sharing

Data Preparation

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into performance and efficiency.

Explanation video link
1: https://drive.google.com/file/d/1my-s-fRwF18ChA393xpS0EO_rZMrdASD/view?usp=sharing

No of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data include bar charts, line charts,

heat maps, scatter plots, pie charts, Maps, etc. These visualizations can be used to compare performance, track changes over time, show distribution, and relationships between variables, breakdown of revenue and customer demographics, workload, resource allocation, and location of hotels.

Analysis on number of Manufacturer by Year

Explanation video link: Link

Analysis on Toy Manufacturer by index

Explanation video link:

Link

Analysis on toy Manufacturer in US state By Index

Explanation video link: https://drive.google.com/file/d/1g-6QhJDbE-UP3vdPI0vS6WF8yj9qMEOW/view?usp=sharing

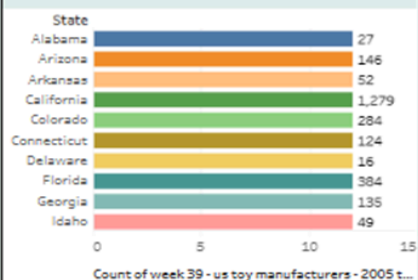**Top 10 states toy manufacturer in US state**

Explanation video link:

Link

Responsive and Design of Dashboard

The responsiveness and design of a dashboard for analyzing the performance of ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information, interactivity, data-driven approach, accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights to improve the performance of ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data. Once you have created views on different sheets in Tableau, you can pull them into a dashboard.
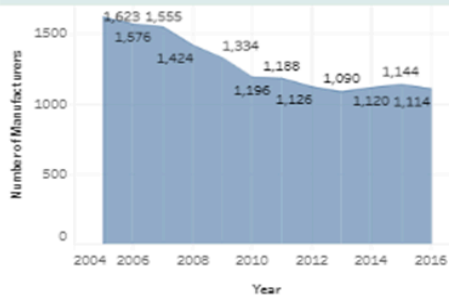
Explanation video link: Link

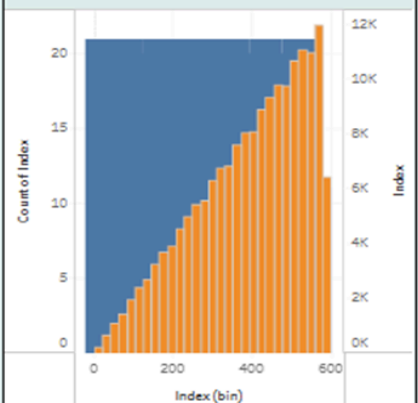# ToyCraft Tales Tableau's Vision into Toy Manufacturer Data
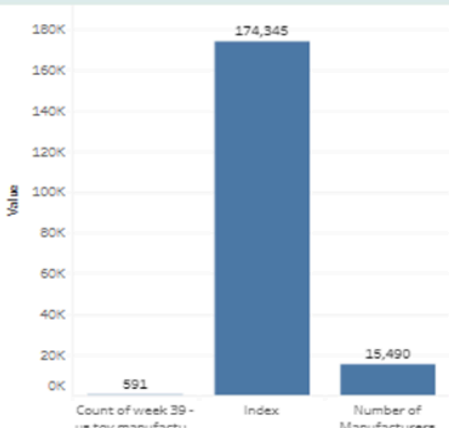
Top 10 state Toy Manufacturers in US States

State	
Alabama	27
Arizona	146
Arkansas	52
California	1,279
Colorado	284
Connecticut	124
Delaware	16
Florida	384
Georgia	135
Idaho	49

Count of week 39 - us toy manufacturers - 2005 t...

Analysis on number of Manufacturers by year

Number of Manufacturers vs Year

1,623 1,555 1,576 1,424 1,334 1,196 1,188 1,126 1,090 1,144 1,120 1,114

Analysis on Toy Manufacturers by Index

Count of Index / Index vs Index (bin)

Analysis on Toy Manufacturers

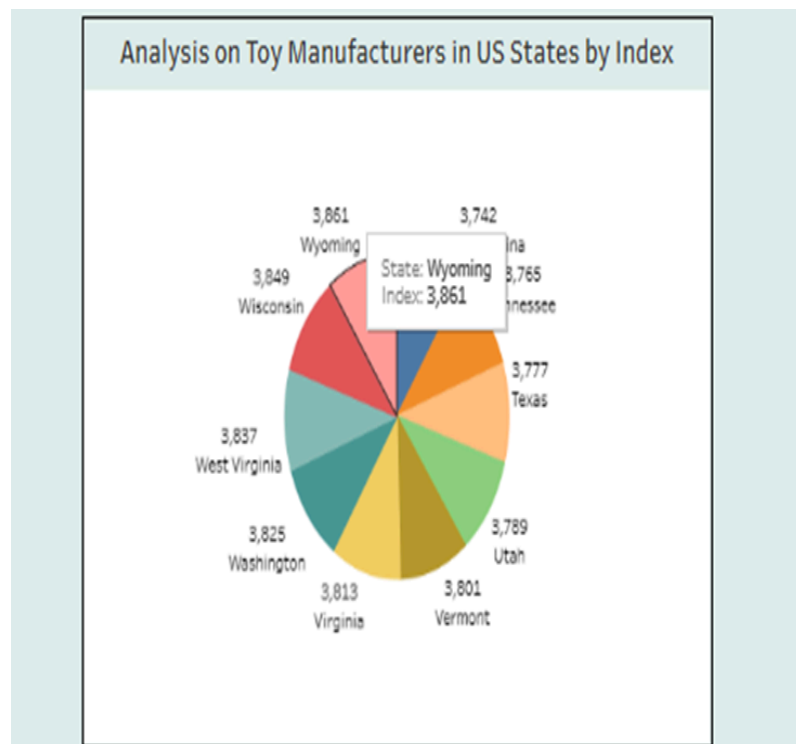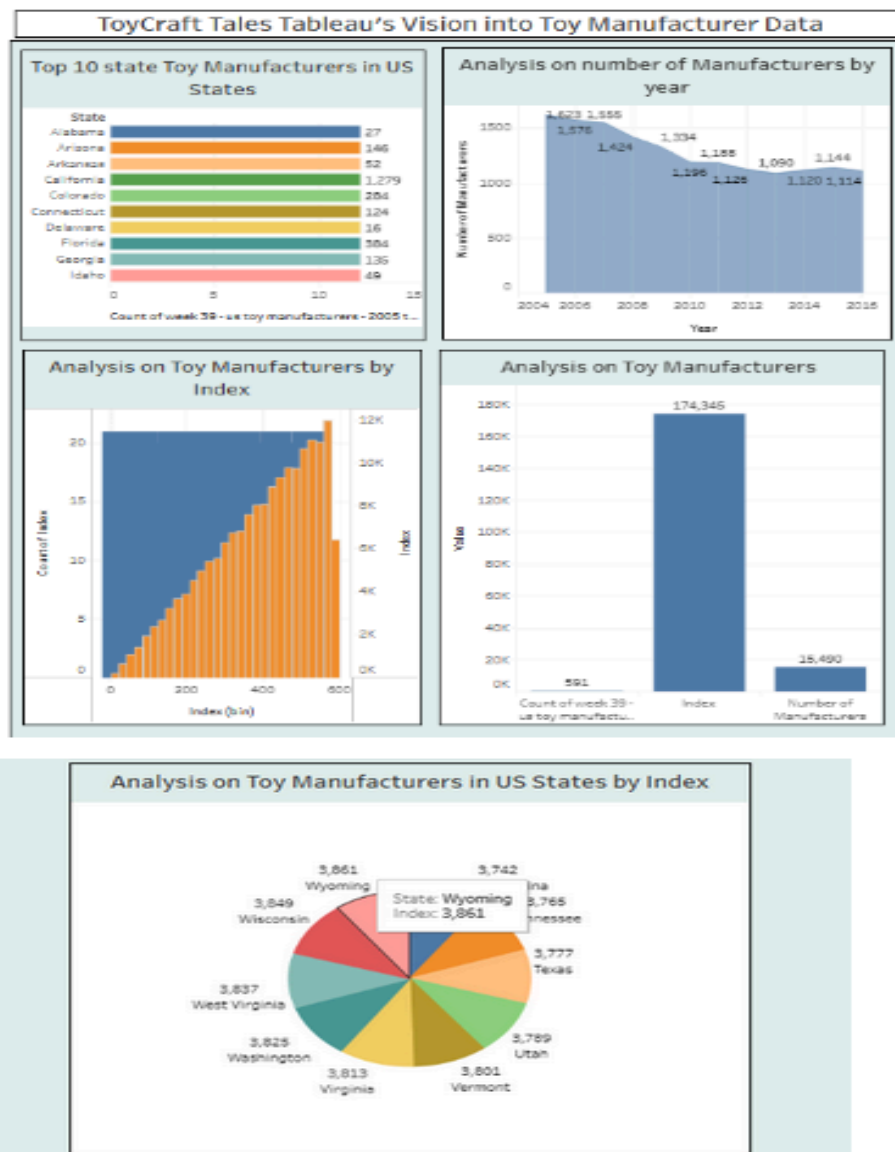| Count of week 39 - us toy manufactu...	Index	Number of Manufacturers
591	174,345	15,490

Analysis on Toy Manufacturers in US States by Index

Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Responsive and Design of Dashboard

The responsiveness and design of a dashboard for analyzing the performance ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information, interactivity, data-driven approach, accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights to improve the performance ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data. Once you have created views on different sheets in Tableau, you can pull them into a dashboard.

 Explanation video link: [Link](#)

ToyCraft Tales Tableau's Vision into Toy Manufacturer Data

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.

No of Scenes of Story

The number of scenes in a storyboard for a data visualization analysis of ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data 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.

Explanation video link: <u>Link</u>
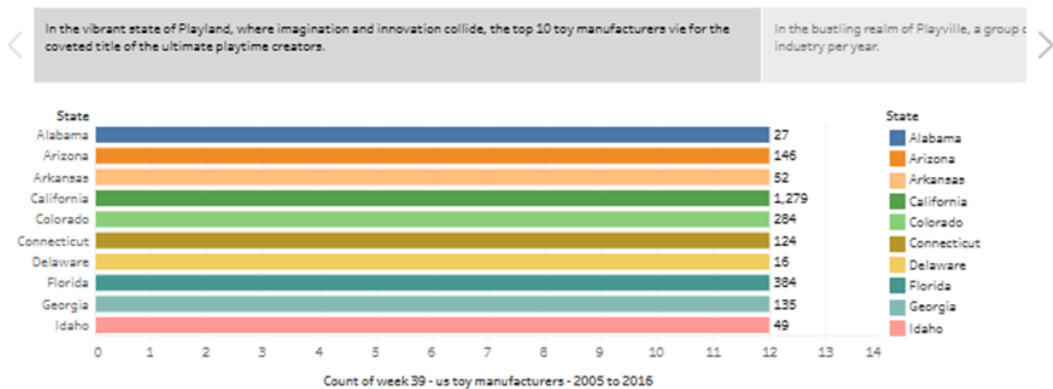
Performance Testing

Amount of Data Rendered to DB

The amount of data that is rendered to a database depends on the size of the dataset and the capacity of the database to store and retrieve data.

Open the MySQL Workbench, go to the database then click to expand the tables, select the table, and click on the (i) button to get the information related to the table such as column count, table rows etc.
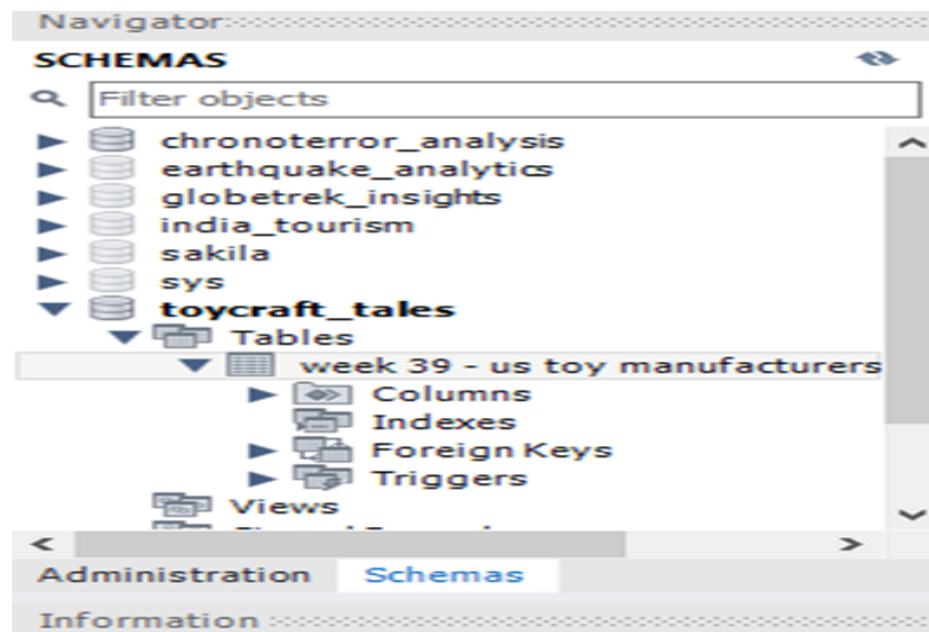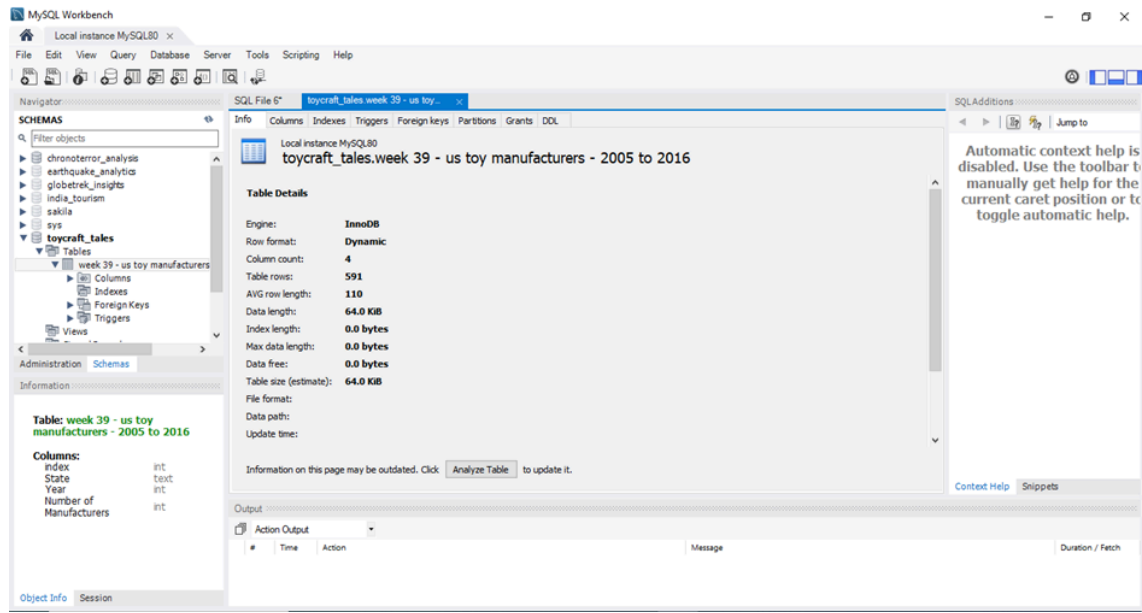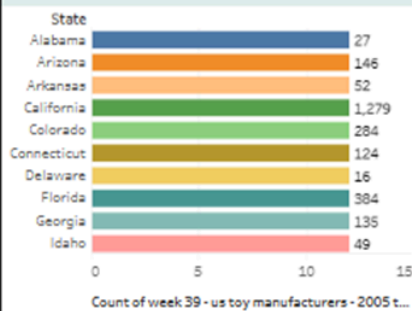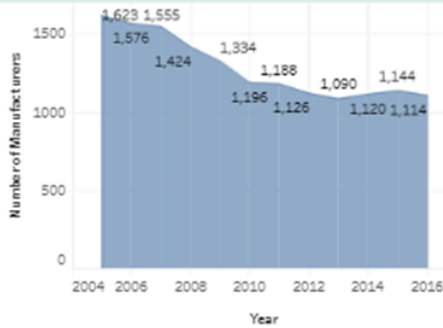
Utilization of Data Filters

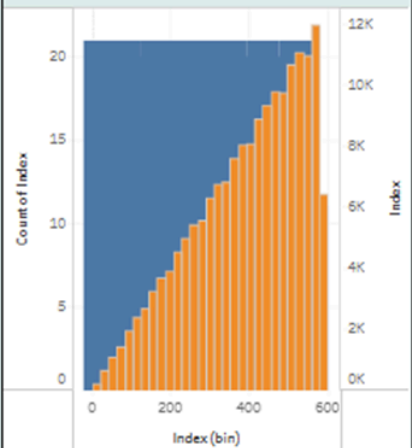# ToyCraft Tales Tableau's Vision into Toy Manufacturer Data
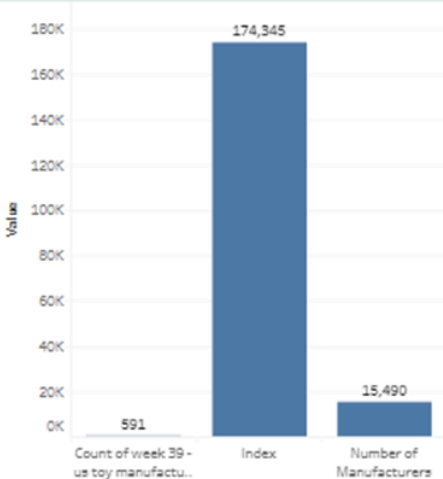
Top 10 state Toy Manufacturers in US States

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Georgia	135
Idaho	49

Count of week 39 - us toy manufacturers - 2005 t...

Analysis on number of Manufacturers by year

Number of Manufacturers

1,623 1,555 1,576 1,424 1,334 1,196 1,188 1,126 1,090 1,144 1,120 1,114

Year: 2004 2006 2008 2010 2012 2014 2016

Analysis on Toy Manufacturers by Index

Count of Index / Index / Index (bin)

Analysis on Toy Manufacturers

Count of week 39 – us toy manufactu..	Index	Number of Manufacturers
591	174,345	15,490

Analysis on Toy Manufacturers in US States by Index

3,861 Wyoming
3,849 Wisconsin
3,837 West Virginia
3,825 Washington
3,813 Virginia
3,801 Vermont
3,789 Utah
3,777 Texas
3,765 nnessee
3,742 na

State: Wyoming
Index: 3,861
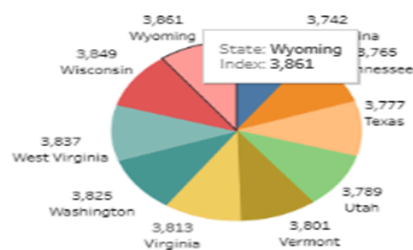
No of Calculation Fields
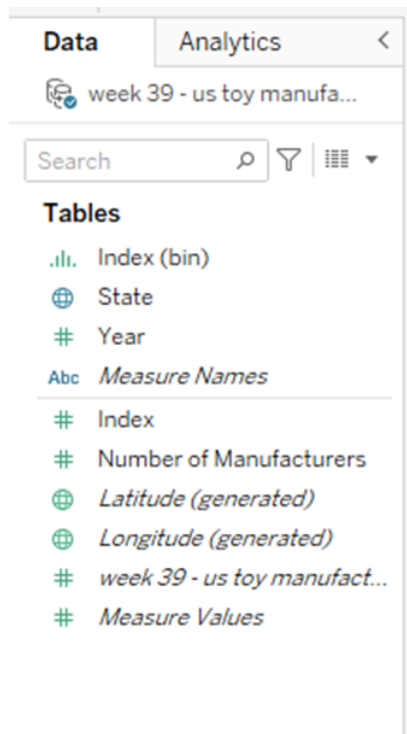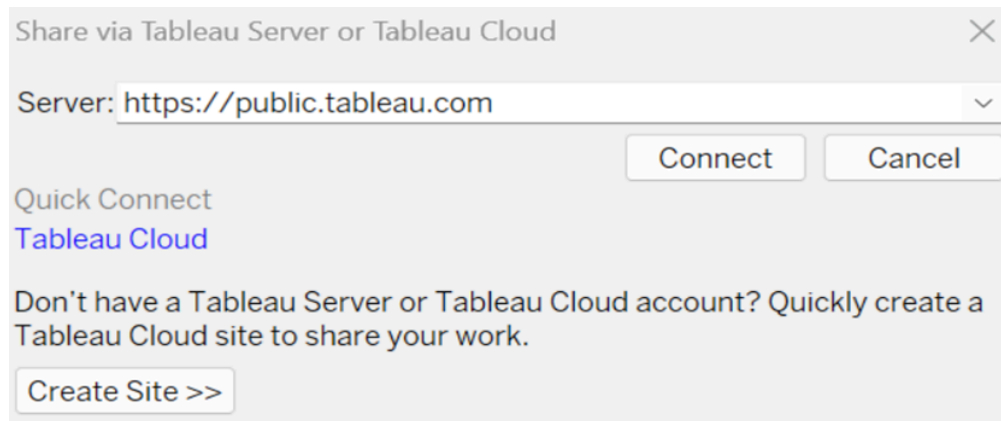
No of Visualizations/ Graphs

1. Analysis of the number of Manufacturers by Year

2. Analysis of Toy Manufacturer by Index

3. Analysis of toy Manufacturers in US state By Index

4. Analysis of Toy Manufacturers

5. Top 10 states toy manufacturer in US state

Web Integration

Publishing helps us to track and monitor key performance metrics, and to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.

Publishing dashboard and reports to tableau public

 Step 1: Go to Dashboard/story, click on the share button on the top ribbon

Give the server address of your Tableau public account and click on connect.

Explanation Video:-

[Link](#)

Step 2: Once you click on connect it will ask you for Tableau public user name and password

Once you log into your Tableau Public using the credentials, the particular visualization will be published into Tableau Public Note: While publishing the visualization to the public, the respective sheet will get published when you click on the share option.

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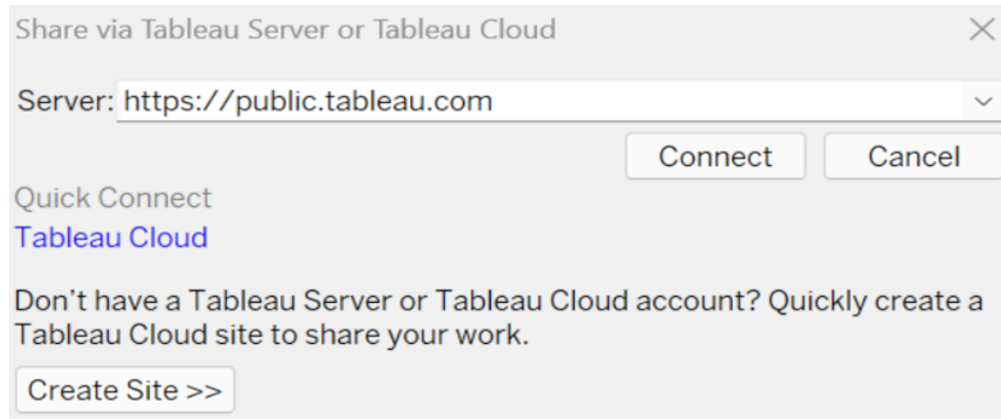
Once you log into your Tableau Public using the credentials, the particular visualization will be published into Tableau Public Note: While publishing the visualization to the public, the respective sheet will get published when you click on the share option.

Dashboard and Story embed with UI With Flask

ToyCraft Tales

ToyCraft Tales Tableau's Vision into Toy Manufacturer Data

Top 10 state Toy Manufacturers in US States

State
- Alabama 27
- Arizona 146
- Arkansas 52
- California 1,279
- Colorado 284
- Connecticut 124
- Delaware 16
- Florida 384
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- Idaho 49

Count of week 39 - us toy manufacturers - 2005 t...

Analysis on number of Manufacturers by year

1,623 1,555 1,576 1,424 1,334 1,188 1,196 1,126 1,090 1,120 1,144 1,114

State legend: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho

Measure Names: Count of Index, Index

Index: 38,059

Analysis on Toy Manufacturers by Index

Analysis on Toy Manufacturers
174,345

ToyCraft Tales

Index (bin)   us toy manufactu...   Manufacturers

Analysis on Toy Manufacturers in US States by Index

- 3,861 Wyoming
- 3,849 Wisconsin
- 3,837 West Virginia
- 3,825 Washington
- 3,813 Virginia
- 3,801 Vermont
- 3,789 Utah
- 3,777 Texas
- 3,765 Tennessee
- 3,742 South Carolina

+ableau

ToyCraft Tales

ToyCraft Tales Tableau's Vision into Toy Manufacturer Data story

In the vibrant state of Playland, where imagination and innovation collide, the top 10 toy manufacturers vie for the coveted title of the ultimate playtime creators.

In the bustling realm of Playville, a group o... industry per year.

State
- Alabama 27
- Arizona 146
- Arkansas 52
- California 1,279
- Colorado 284
- Connecticut 124
- Delaware 16
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- Idaho 49

Count of week 39 - us toy manufacturers - 2005 to 2016

Project Demonstration & Documentation

Below mentioned deliverables are to be submitted along with other deliverables

Activity 1:- Record an explanation Video for the project end to end solution

Activity 2:- Project Documentation-Step by step project development procedure

Create a document as per the template provided

ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data

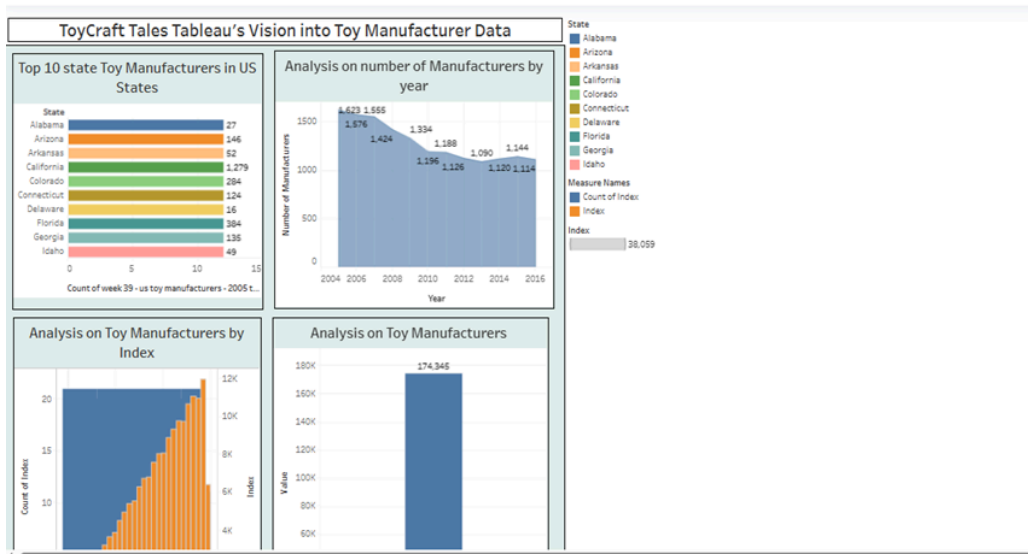In the toy industry—where demand can be seasonal and quality is critical—Tableau enables quick and clear analysis of every stage in the manufacturing process. From factory output to market feedback, Tableau helps ensure toys are made efficiently and reach the right customers at the right time.

1. 📊 Real-Time Data Visualization
Instantly see production status, sales performance, and inventory levels through dynamic dashboards.

2. 🔍 Better Decision-Making
Helps managers identify issues quickly (e.g., defects, delays) and act based on data, not guesswork.

3. 🚚 Improved Supply Chain Efficiency
Tracks supplier performance, lead times, and raw material availability to avoid production bottlenecks.

4. 🎯 Sales & Demand Forecasting
Analyzes seasonal trends and customer preferences to plan production and marketing effectively.

5. ⚙️ Quality Control Monitoring
Visualizes defect rates, product testing results, and compliance metrics to maintain high standards.

6. 💼 Cross-Department Collaboration
Teams in production, sales, and logistics can access the same dashboards for unified decision-making.

7. 📱 Mobile Accessibility
Dashboards can be viewed on tablets and phones, allowing on-the-go insights for managers.

8. 🧠 Tableau can integrate with machine learning tools to predict demand and maintenance need

Tableau toy craft refers to a project showcasing eco-friendly wooden toys from Andhra Pradesh's Etikoppaka village. The craft, known as Etikoppaka Bommalu, features vibrant, intricately designed toys made from natural materials like wood from the Ankudu tree and non-toxic dyes derived from plants.

1.Eco-friendly: Made from natural materials, ensuring sustainability and non-toxicity
Traditional Craftsmanship: Utilizes a 400-year-old lacquer-turning technique for a lustrous finish
●Cultural Significance: Depicts mythological characters, animals, and musical instruments, reflecting India's rich cultural heritage

●Unique Designs: Inspired by nature, with motifs like flowers, animals, and geometric patterns

●Recognition and Significance:

●Geographical Indication (GI) Tag: Received in 2017, ensuring authenticity and preserving cultural significance
●International Recognition: Admired by collectors and eco-conscious enthusiasts worldwide
●Promotion: Featured in Andhra Pradesh's tableau during India's Republic Day celebrations, promoting eco-friendly crafts and local industries [1] [2]

Tableau empowers toy manufacturers to make smarter, faster decisions by turning complex data into clear, actionable insights. From tracking production and quality to forecasting demand and managing inventory, Tableau helps improve efficiency, reduce costs, and deliver better products to market. By using data visually and effectively, toy companies can stay competitive and responsive in a fast-changing industry.

Toycraft, in this context, likely refers to the Etikoppaka wooden toys from Andhra Pradesh, India, which were featured in a tableau at the Republic Day parade. The tableau showcased the traditional craft of making these toys, which are known for their vibrant colors and intricate designs. The related story is about the cultural significance of these toys and the artisans who create them, highlighting their role in preserving Andhra Pradesh's heritage.

Here's a more detailed explanation:

Etikoppaka Toys:
These are handcrafted wooden toys made in the village of Etikoppaka, located near Visakhapatnam.
Toycraft Tableau:
The tableau at the Republic Day parade was a visual representation of the Etikoppaka toy-making tradition, featuring Lord Venkateswara and other elements like Haridasu and Bommala Koluvu.
Cultural Significance:
The toys are a living testament to Andhra Pradesh's cultural heritage, known for their vibrant colors derived from natural dyes and their intricate designs that harken back to ancient civilizations.
Artisans' Role:
Many families in Etikoppaka have been making these toys for generations, using techniques passed down through families. The toys are crafted from Ankudu tree wood and colored with natural dyes.
Republic Day Feature:

The tableau's participation in the Republic Day parade brought national and international recognition to the craft and its artisans.

GI Tag:

The Etikoppaka toys were also recognized with a Geographical Indication (GI) tag in 2017, further solidifying their authenticity and cultural significance.

The term "Toy Village" refers to places known for traditional toy-making, particularly wooden toys. Channapatna in Karnataka and Kondapalli in Andhra Pradesh are famous examples of such villages. These villages have a rich history of crafting toys using indigenous techniques and materials, often involving lacquering and wood carving.

Traditional Toy Making:

The process of crafting toys, including wood selection, shaping, lacquering, and painting.

Artisans and Craftsmanship:

The skills and knowledge passed down through generations, often involving family-based workshops.

Materials and Techniques:

The use of local wood (like Wrightia tinctoria in Channapatna), natural dyes, and lacquering techniques.

Cultural Significance:

The role of toys in storytelling, religious traditions, and local customs.

Economic Importance:

The contribution of toy-making to local livelihoods and the economy.

Challenges and Threats:

The impact of mass-produced plastic toys, economic pressures, and the need for preservation and support.

Preservation Efforts:
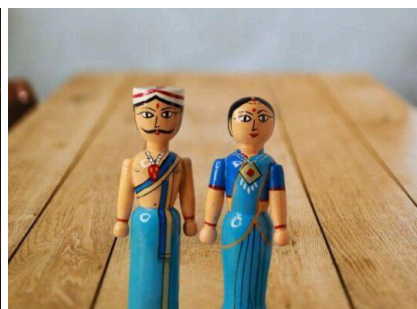
Initiatives to promote and protect traditional toy-making, including GI (Geographical Indication) tags and support for artisans.

Modern Interpretations:

How traditional crafts are being adapted to contemporary designs and markets.

Tourism and Souvenirs:

The role of toy villages as tourist destinations and sources of unique handicrafts.

Pie charts are used to visually represent data as slices of a circle, where each slice's size corresponds to its proportion of the whole. In the context of piecraft manufacturing, pie charts could be used to display various aspects of the business, such as the percentage of revenue from different products, the distribution of manufacturing costs, or the proportion of different materials used.

Here's how pie charts could be applied in piecraft manufacturing:

1. Product Sales Distribution: A pie chart could show the percentage of total revenue generated by each type of pie (e.g., apple pie, cherry pie, pecan pie). This helps identify which pies are the most popular and profitable.

2. Cost Breakdown: A pie chart can illustrate the proportion of total manufacturing costs attributed to different categories, such as ingredients, labor, packaging, and utilities. This helps pinpoint areas where cost reduction efforts may be most effective.

3. Material Usage: A pie chart can visualize the percentage of different ingredients or materials used in pie production (e.g., flour, sugar, butter, fruit). This can be useful for inventory management and sourcing decisions.

4. Production Efficiency: A pie chart could show the percentage of time spent on different production activities (e.g., mixing, baking, cooling, packaging). This can help identify bottlenecks and improve overall production efficiency.

5. Sales by Region: A pie chart can display the distribution of pie sales across different geographic locations, helping to understand regional demand patterns.

6. Ingredient Sourcing: A pie chart could illustrate the percentage of ingredients sourced from different suppliers. This is useful for ensuring supply chain diversity and managing potential risks.

Steps to Create a Pie Chart:

1. Gather Data:

Collect the relevant data for the aspect of the business you want to visualize (e.g., sales figures, cost breakdowns, material quantities).

2. Calculate Percentages:

Determine the percentage of each category by dividing its value by the total value and multiplying by 100.

3. Calculate Degrees:

Convert percentages into degrees by multiplying each percentage by 360 (since a circle has 360 degrees).

4. Draw the Circle:

Use a compass to draw a circle.

5. Divide into Sectors:

Use a protractor to divide the circle into sectors based on the calculated degrees.

6. Label and Color:

Label each sector with its category and corresponding percentage, and assign a distinct color to each sector for clarity.

Example:

Let's say a piecraft company sells three types of pies: Apple, Cherry, and Blueberry. The total sales for a month are $10,000. Apple Pie sales: $4,000 (40%), Cherry Pie sales: $3,000 (30%), and Blueberry Pie sales: $3,000 (30%).

A pie chart would visually represent these figures, showing the Apple pie slice taking up 40% of the circle, while Cherry and Blueberry each take up 30%.

Images
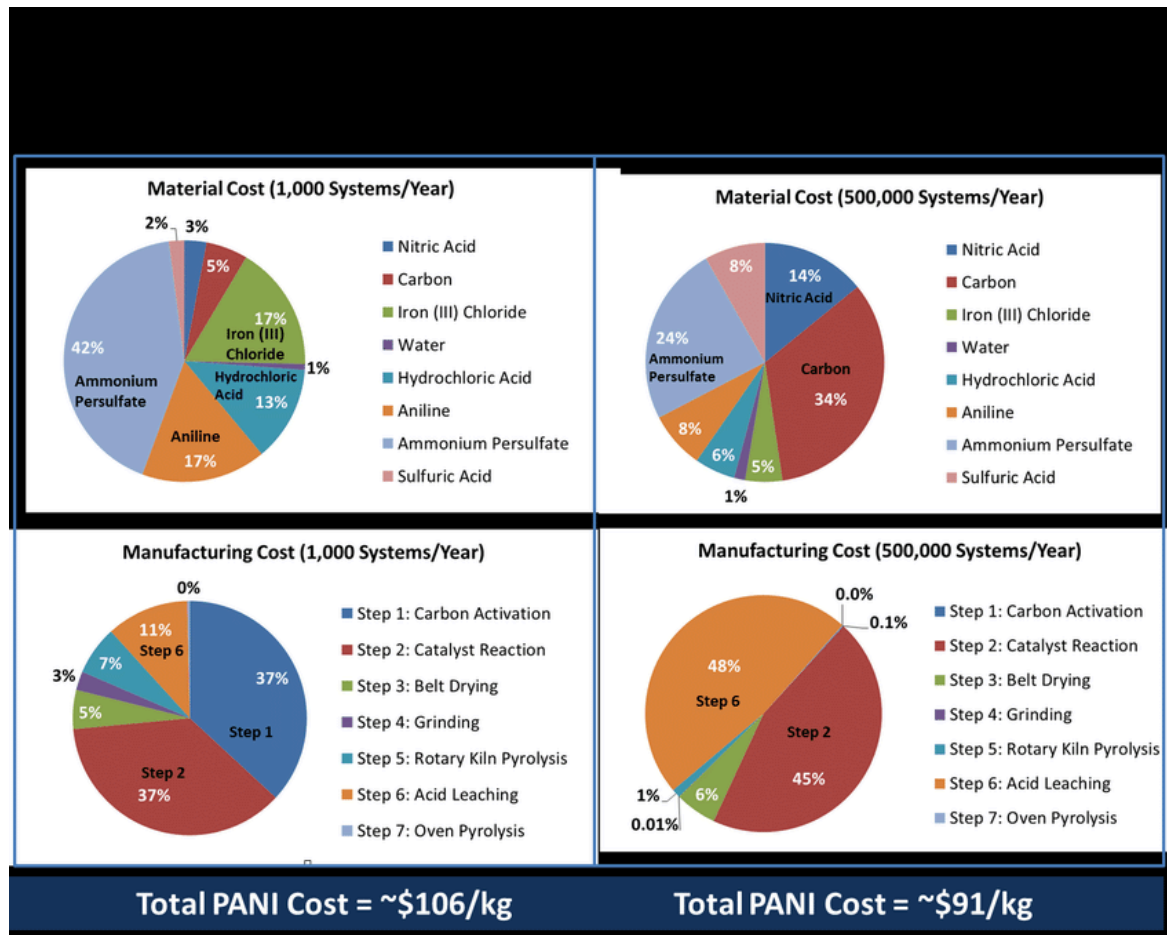
Performance testing of toy crafts involves evaluating the durability, functionality, and safety of the toys to ensure they meet established standards and are suitable for their intended use. This includes assessing aspects like strength, impact resistance, and potential hazards like sharp edges or small parts.

Here's a breakdown of common performance tests for toys:
1. Mechanical/Physical Testing:
Impact Testing:
Simulates drops and impacts to assess the toy's ability to withstand falls and prevent breakage, sharp edges, or loose parts.

Drop/Impact Testing:

Evaluates the durability and safety of toys by simulating drops from a specific height onto various surfaces.

Compression Testing:

Assesses the toy's resistance to being crushed or deformed under pressure.

Torque Testing:

Measures the resistance of the toy's components to twisting or rotational forces, ensuring they don't easily break or detach.

Tensile Testing:

Evaluates the strength of the toy's materials and connections by pulling them apart.

Fatigue Testing:

Determines how well the toy withstands repeated stress and strain over time.

Sharp Point and Edge Testing:

Checks for sharp points or edges on the toy that could injure a child.

Small Parts Testing:

Ensures that small parts on the toy cannot be easily detached and pose a choking hazard.

2. Safety Testing:

Flammability Testing: Assesses the toy's flammability and burning rate to minimize fire hazards.

Chemical Testing: Checks for the presence of harmful chemicals like lead and other heavy metals in the toy's materials.

Toxicity Testing: Ensures that the materials used in the toy are non-toxic and safe for children.

3. Functional Testing:

Functionality Assessment: Verifies that the toy performs as intended and that all its features work correctly.

Ease of Use: Evaluates how easily a child can operate and interact with the toy.

Engagement: Assesses the toy's appeal and ability to hold a child's attention.

4. Other Considerations:

Packaging and Labeling: Ensuring packaging is clear, accurate, and meets legal requirements.

Age Appropriateness: Confirming the toy is suitable for the intended age group.

Durability and Reliability: Assessing the toy's ability to withstand normal use and play.

By conducting these tests, toy manufacturers can identify potential safety issues, improve product quality, and ensure that toys are fun, engaging, and safe for children

Toy graphs can help children develop early math skills like counting, sorting, and representing data with pictures or symbols. They can also enhance focus, fine motor skills, and spatial awareness through activities like drawing on a graph or sorting objects. Furthermore, using toys to create graphs can make learning more engaging and fun, promoting a deeper understanding of mathematical concepts.

Here's a more detailed look at the benefits:

Developing Math Skills:

Counting and Sorting:
Toys like blocks, beads, or even everyday objects can be used to create simple graphs, allowing children to count and sort items based on different criteria.

Early Number Sense:
Creating graphs with toys can introduce concepts like quantity, comparison (more/less), and basic addition and subtraction.

Data Representation:
Children can learn to represent data visually, understanding how to use symbols or pictures to show quantities and relationships.

Enhancing Cognitive and Motor Skills:

Focus and Concentration:
Working with toys to create graphs can improve a child's ability to focus and concentrate on a task.

Fine Motor Skills:
Drawing, manipulating small objects, and placing them on a graph helps develop fine motor skills.

Spatial Awareness:
Understanding the relationship between objects on a graph and their position in space can enhance spatial reasoning.

Making Learning Fun and Engaging:

Playful Learning:
Using toys to learn about graphs makes the process more enjoyable and less intimidating for young children.

Active Engagement:
Toy-based activities encourage children to be actively involved in the learning process, rather than passively receiving information.

Real-World Connections:
Graphing with toys can help children see how math is used in everyday situations, making it more relevant and meaningful.

Examples of Toy-Based Graph Activities:

Sorting toys by color:
Children can sort blocks, beads, or toy cars by color and then create a bar graph to show how many of each color they have.

Creating a picture graph:
Children can use stickers or drawings to represent different types of food, animals, or objects, creating a picture graph to display their collection.

Using building blocks to represent data:
Children can use blocks to create towers of different heights to represent the number of books read, the number of siblings, or other data points.

Europe Smart Toys Market Outlook, 2018/2019-2031
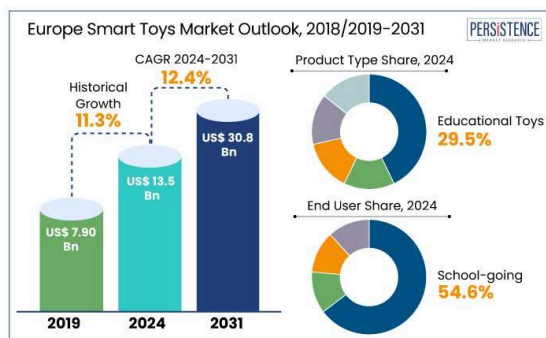
In toy craft manufacturing, calculation fields are used for various purposes, including cost analysis, production tracking, and quality control. These fields help in determining the cost of materials, labor, and overhead, as well as tracking production efficiency and identifying defective items.

Here's a breakdown of common calculation fields:
1. Cost Calculation:

Raw Material Costs:
Calculating the cost of wood, plastic, fabric, or other materials used in production. This involves considering factors like material type, quantity, and supplier costs.
Direct Labor Costs:
Calculating the cost of labor directly involved in the manufacturing process, including wages and benefits for machine operators, assemblers, and other production staff.
Indirect Labor Costs:
Calculating the cost of labor not directly involved in production, such as supervisors, quality control personnel, and maintenance staff.
Overhead Costs:
Calculating the cost of indirect expenses like rent, utilities, equipment maintenance, and depreciation.
Total Production Cost:
Summing up all direct and indirect costs to determine the total cost of producing a batch of toys.
Cost per Toy:
Dividing the total production cost by the number of toys produced to determine the cost of each individual toy.
Selling Price Calculation:
Using cost information to determine the selling price of toys, potentially adding a profit margin.
2. Production Tracking:
Units Produced:
Tracking the number of toys completed per production run or per machine.
Production Time:
Measuring the time taken to complete each stage of production, identifying bottlenecks and optimizing workflow.
Defect Rate:

Calculating the percentage of defective toys produced, which helps in identifying areas for quality improvement.
Efficiency Rate:
Measuring the efficiency of production lines and individual workers based on output and time.
3. Quality Control:
Defect Rate:
Calculating the percentage of defective toys produced, which helps in identifying areas for quality improvement.
Pass/Fail Criteria:
Establishing criteria for acceptable quality and tracking the number of toys that meet these standards.
4. Other Calculations:
Material Usage: Tracking the amount of raw materials used per toy or per production run.
Waste Calculation: Measuring the amount of scrap or waste generated during production, which can be used to optimize material usage and reduce waste.
Machine Utilization: Tracking the amount of time machines are in operation, identifying potential underutilization or downtime.
Examples:
KVIC (Khadi and Village Industries Commission)
provides project profiles for toy manufacturing, including cost calculations for raw materials, labor, and other expenses.
123FormBuilder
offers templates for toy manufacturing calculation forms, which can be used to track various cost and production metrics.
By utilizing these calculation fields, toy craft manufacturers can gain valuable insights into their operations, optimize their processes, and improve their overall profitability.

To create a dashboard and story embed with UI using Flask for ToyCraft manufacturing, you'll need to integrate Tableau's APIs and tools. Here's a high-level overview:

Requirements
- *Tableau Server or Online*: Host your dashboards and stories.
- *Tableau APIs*: Use REST API or JavaScript API to embed dashboards and stories.
- *Flask*: Build a web application to integrate with Tableau.

Steps
1. *Create Dashboards and Stories*: Design and publish dashboards and stories in Tableau.
2. *Get Dashboard and Story URLs*: Retrieve the URLs for embedding.
3. *Use Tableau JavaScript API*: Embed dashboards and stories in your Flask web application using the JavaScript API.
4. *Customize UI*: Design a user-friendly interface for your application.

Example Code (Flask and Tableau JavaScript API)
```
from flask import Flask, render_template
```

```python
app = Flask(__name__)

@app.route("/")
def index():
    return render_template("index.html")

if __name__ == "__main__":
    app.run(debug=True)
```

```html
<!-- index.html -->
<!DOCTYPE html>
<html>
<head>
    <title>ToyCraft Manufacturing Dashboard</title>
    <script src="https://public.tableau.com/javascripts/api/tableau-2.min.js"></script>
</head>
<body>
    <div id="tableauViz" style="width: 800px; height: 600px;"></div>
    <script>
        function initViz() {
            var viz = new tableau.Viz(
                document.getElementById("tableauViz"),
                "https://your-tableau-server.com/views/ToyCraftManufacturing/Dashboard"
            );
        }
        initViz();
    </script>
</body>
</html>
```

Benefits
- *Real-time Insights*: Embed dashboards and stories for real-time data visualization.
- *Customizable UI*: Design a tailored interface for your application.
- *Seamless Integration*: Use Tableau's APIs for a smooth integration experience.

By following these steps and using the example code, you can create a powerful dashboard and story embed with UI for ToyCraft manufacturing using Flask and Tableau.