

## Assignment # 10 Prompt

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### **Tableau Assignment**

**Tableau:** You're working at Toy Data, and are asked to create a **dashboard of 3-6 graphs** that focus on any **one** of the following areas (don't limit yourself to the questions in the prompt):

A) Customers: Who buys from Toy Data? When? Where are they based? What do they buy? How many of each deal size does each customer / country have? What customers bought from goods from what country? You can focus on a segment of customers, or all of them. Feel free to also look at sales by country.

B) Sales Office or Salespeople: How do the quantity sold compare by office or salespeople? How many salespeople do we have per office? What kinds of items does each of our sales office sell? What is the average sale for each salesperson or office?

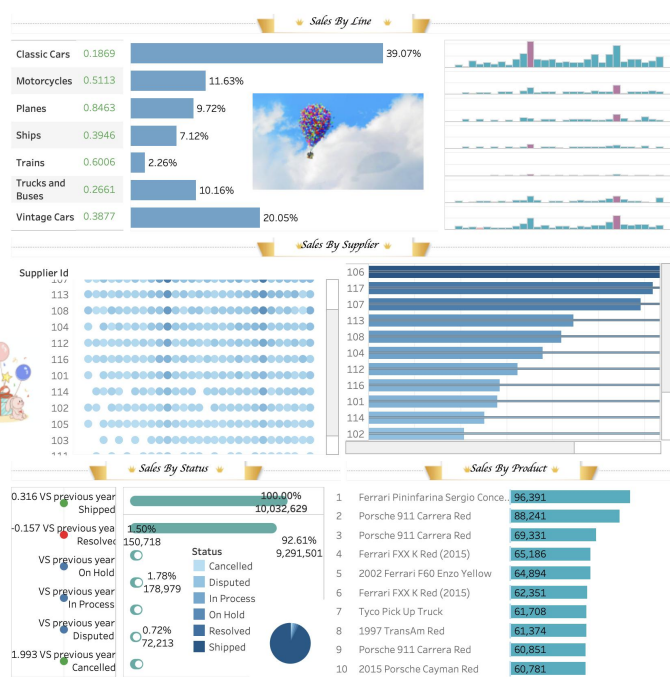
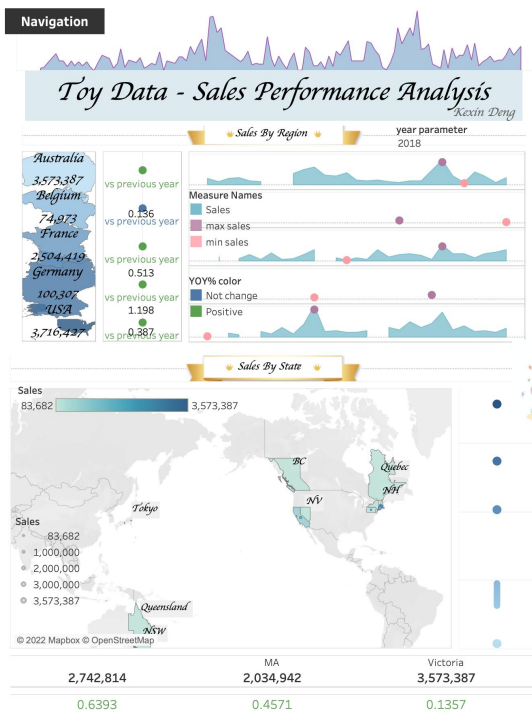
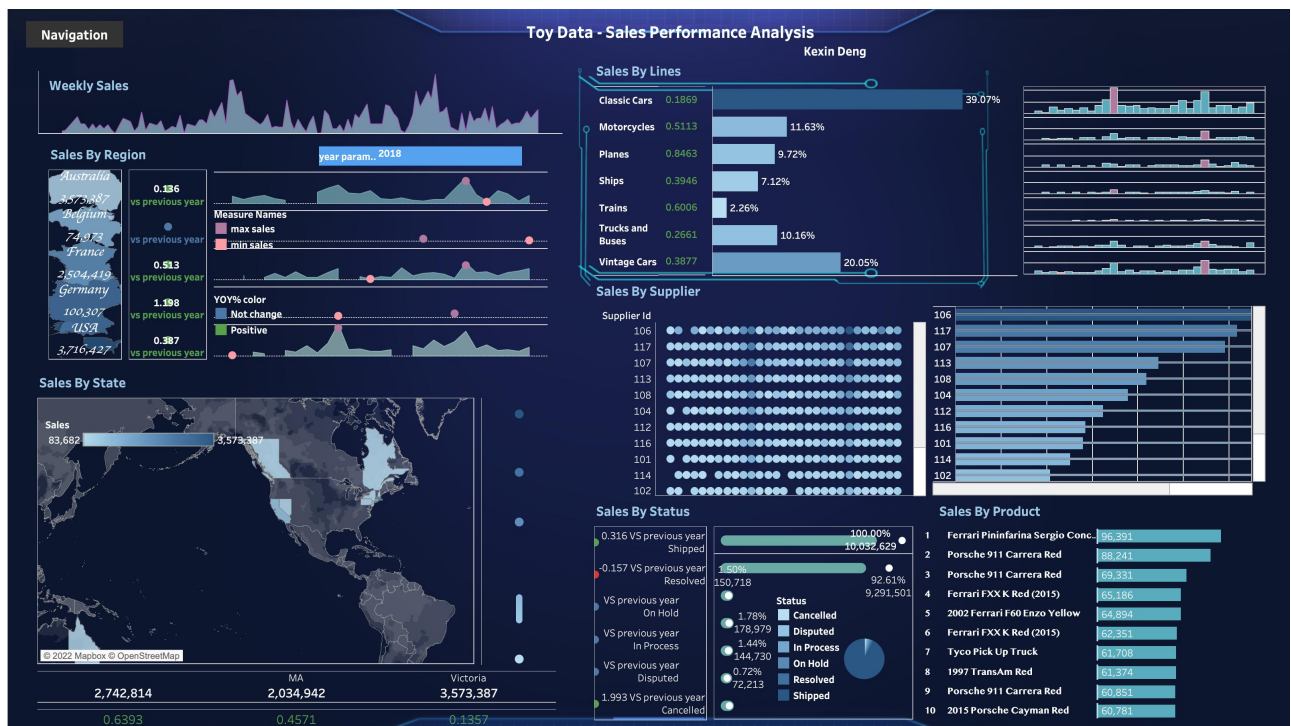
C) Suppliers: Where are the suppliers from? Which lines do the suppliers provide? How much do we order from each supplier? What is the average MSRP per supplier?

D) Any other dimension that you choose... feel free to get creative! (highly encouraged)

For your submission, to ensure you receive full credit, please submit **BOTH** in Assignments:

- 1) The .twbx (Not .twb) file with your dashboard
- 2) An image / screen shot of your dashboard as a PDF pasted into this document along with an explanation / any commentary of your dashboard.

I choose the self designed dimension of created a tableau representation of the toy data sales performance, and explored calculation field, YOY calculation, dual axis, and formatting background. There are, in total, two dashboards with light mode and dark mode. By right-clicking on the "Navigation" button, users can navigate between the dark and the light mode.



The dashboards analyze toy data's sales performance, comprising the following parts: sales by region, state, line, supplier, status, and product. In both modes, the "year parameter" tab is under the title, which is designed to select a specific year. The two screenshots above are an example of the year 2018. In sales by region, state, line, and status, I utilized the different years and coded the calculated field of Year-over-year (YOY), a method of evaluating two or more measured events to compare the results at one period with another. I created a calculation of YOY color

through coding and displayed red as negative, green as positive, and green as the same or insufficient data.

The two screenshots also weren't able to portray the charm of when your mouse moves onto the graph. I created Tooltip so more detailed information will appeal. Especially in light mode's sales by state, I embedded a rank of sales within the city of those states in the Tooltip!

**Note:**

1. Formula of YOY:

$$\frac{\text{sum}(\text{zn}(\text{if YEAR}([\text{Order Date}]) = [\text{year parameter}] \text{ then } [\text{Sales}] \text{ else null end}) - \text{zn}(\text{if YEAR}([\text{Order Date}]) = [\text{year parameter}] - 1 \text{ then } [\text{Sales}] \text{ else null end}))}{\text{sum}(\text{zn}(\text{if YEAR}([\text{Order Date}]) = [\text{year parameter}] - 1 \text{ then } [\text{Sales}] \text{ else null end}))}$$

2. Formula of YOY color:

if [YOY% sales] > 0 then 'Positive'

elseif [YOY% sales] < 0 then 'Negative'

else 'Not change'

End

- **Sales by region section** Sales by region section explore the deals with the country under the customer information. Through modeling and filtering, the five identifiable countries are listed with their YOY vs. the previous year and the area graph with the month of the order date. The purple point and the pink point are designed using a calculated field. Then, the project can identify the period where customers have the most favorable and slightest tendency to purchase for customers from different places.

month	Australia	Belgium	France	Germany	USA
Max sales	2018.11	2018.7	2018.11	2018.10	2017.11
Min sales	2019.1	2019.5	2018.2	2017.11	2017.1

Note that the result may have more implications with a larger dataset involving more customers from different countries, and the analysis may be helpful in finding the customer's trends and shopping behavior. I also explored advanced tableau methods like dual axis when creating the data visualization, which is an interesting and meaningful attempt.

3. Formula of max sales:

if sum([Sales])=WINDOW\_MAX(sum([Sales])) then sum([Sales]) else null  
end

4. Formula of min sales:

if sum([Sales])=WINDOW\_MIN(sum([Sales])) then sum([Sales]) else null  
end

- **Sales by state section:** this part provides a visualization of the relationship between the customer's state and sales using visualization on the world map. The challenges are that some states' abbreviations cannot be recognized, so I manually classified them with the actual locations in the world. In terms of formatting, exploring how to turn on the transparent background of a map is also full of fun. Below the map, I listed the top 3 customers' states in terms of sales and noted down their YOY% calculated before. Again, the YOY% data can change when the user chooses a different year. At a glance, the user can tell that year 2019's YOY is bad (almost all colored red for negativity).
- **Sales by line section:** this part explores the relationship between lines and sales, visualizing the percentage of total sales and the monthly trend in sales for each line. Same as before, the purple point and the pink point are designed using a calculated field, representing maximum sales and minimum sales.

- **Sales by Supplier section:** the part shows monthly sales trend by line-- a circle plot throughout the time-span of order-date by month for a different supplier. Like a heatmap, the circle are colored by the sales, so the darker the blue, the higher the sales. The right plot is a rank of the suppliers by sales in a descending view.
- **Sales by Status section:** the part shows YOY% of different statuses, which indicates how much the degree each status accounts for all change across different years. I also visualized sales status data and a pie chart giving a more direct view of the weight and percentage for another status.
- **Sales by Product section:** the part notes the top 10 products by sales. This ranking utilizes the calculated field I created earlier named top sales.

5. Formula of index:

`index()`

6. Formula of top sales:

`rank_unique(sum([Sales]))`

Last note:

Since I attempted different dashboard, so by duplicating I created some duplicate of the worksheets, so some sheets with (2), (3), etc may not actually be featured in my last two dashboard, the light mode and the dark mode.

Special thanks and acknowledgement:

Thanks to Tableau Public's Pradeep Kumar G's Sample Superstore - Sales Performance | VOTD for inspiration in designing the tableau and Apoorv Yadav's article on medium regarding *Adding a Dark/Light theme to your Dashboard*. It's so proud to finish the finalized versions of the Dashboard. I enjoyed the process a lot and realized my potential!