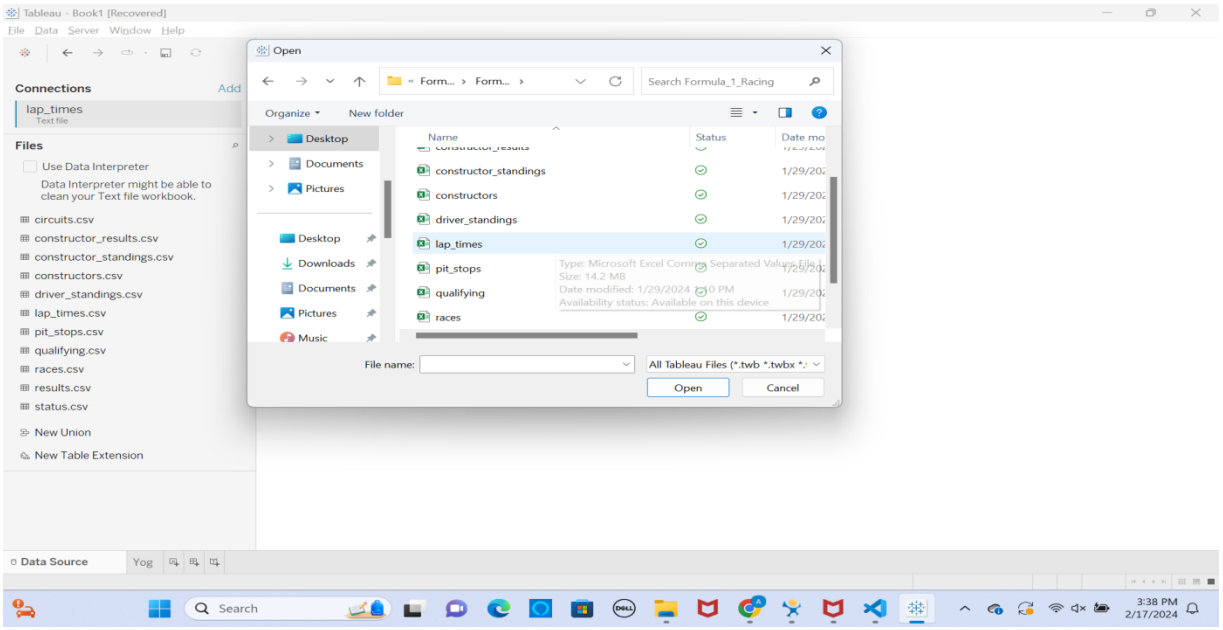
ADTA 5250 Large Data Visualization:

Assignment: Parameters and Filters by Yog Chaudhary

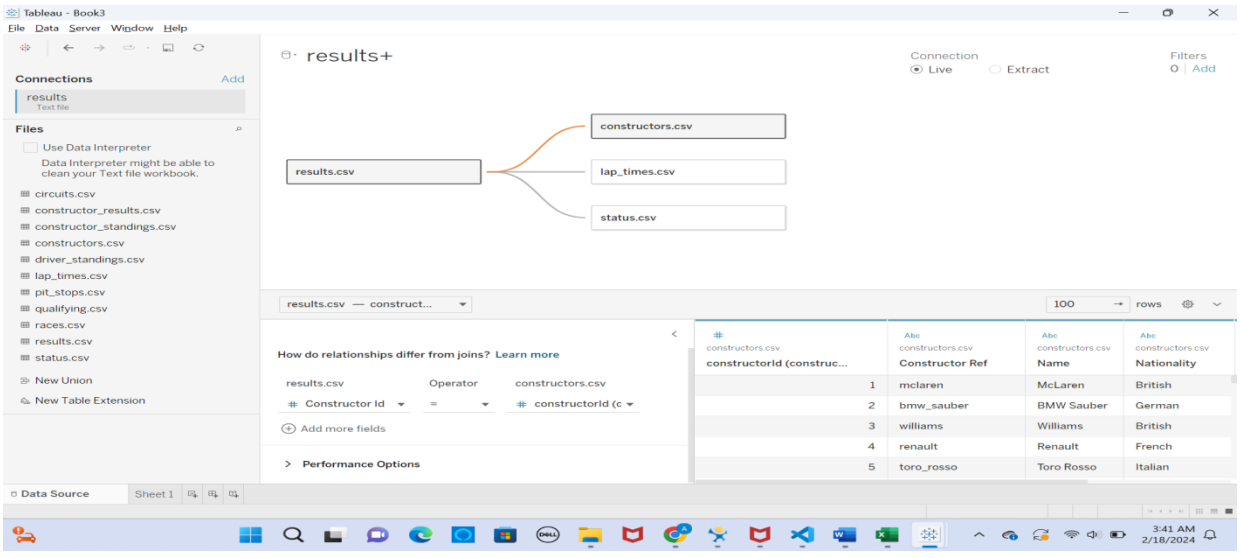
Step 1: I've clicked on open and added the Formula 1 dataset.

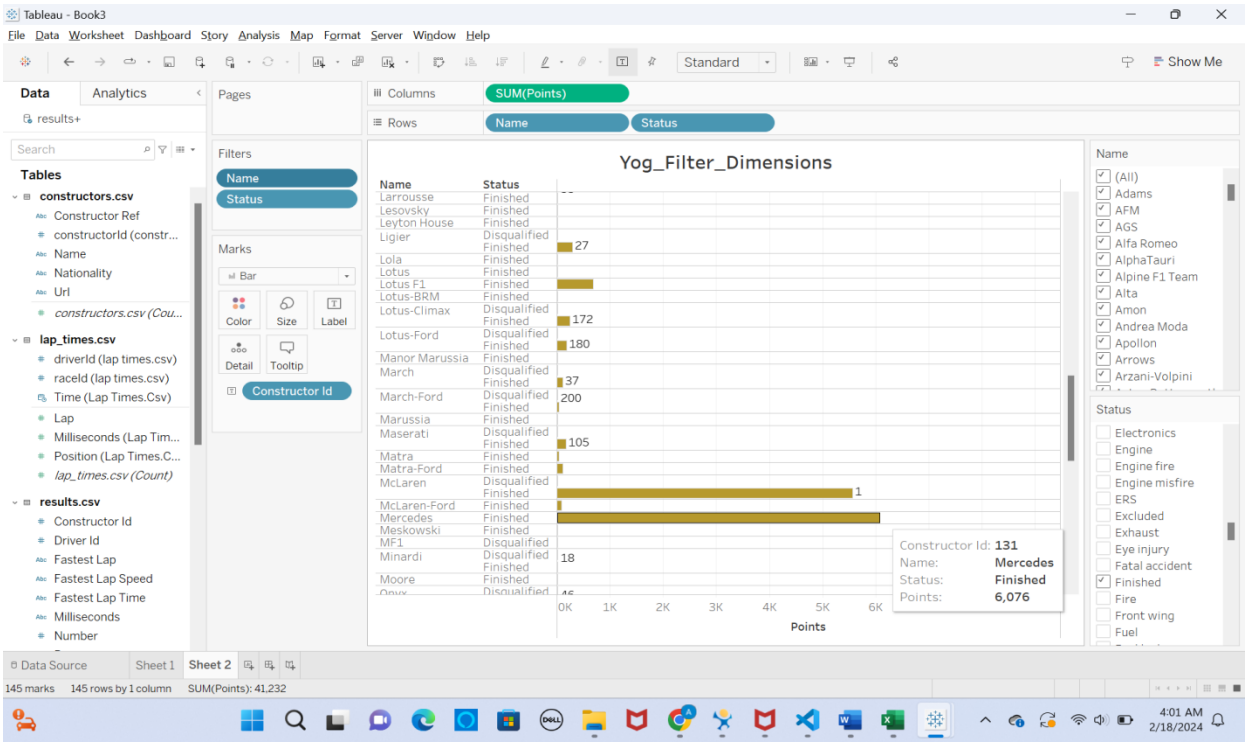


Step 2: Next, I used the sheet option next to a data source and right clicked it with renamed to Yog_filter_dimensions.

1)

Here, I have used the constructor table with three other tables.





Business insights:

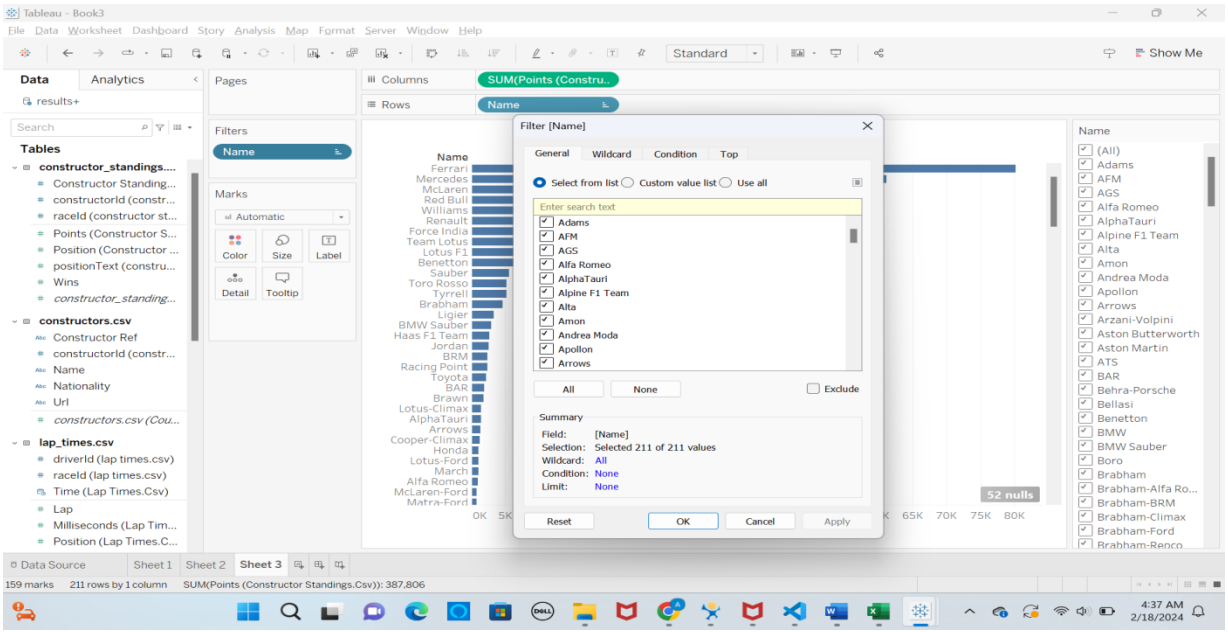
Strategic Planning and Performance Optimization: Examining the distribution of status events among different teams offers important insights into the competitive environment of Formula 1 racing. Teams who experience more disqualifications or technical difficulties more frequently could find it more difficult to compete than those who have fewer setbacks. Teams can use this information to prioritize their efforts in areas like R&D, technical support infrastructure, and racing strategies by using it to inform their strategic decision-making processes. Teams can enhance their ranks in the sport and efficiently optimize their strategy by reducing bad status occurrences and improving overall performance.

Data-Driven Performance Enhancement: A methodical approach to enhancing Formula 1 performance is made possible by using data to examine the distribution of status events among teams. Teams can discover areas for improvement and devote resources appropriately by analyzing patterns in disqualifications and technical challenges. Teams may enhance performance on the track by refining racing plans, boosting driver skills, and improving vehicle reliability by making well-informed decisions based on this data.

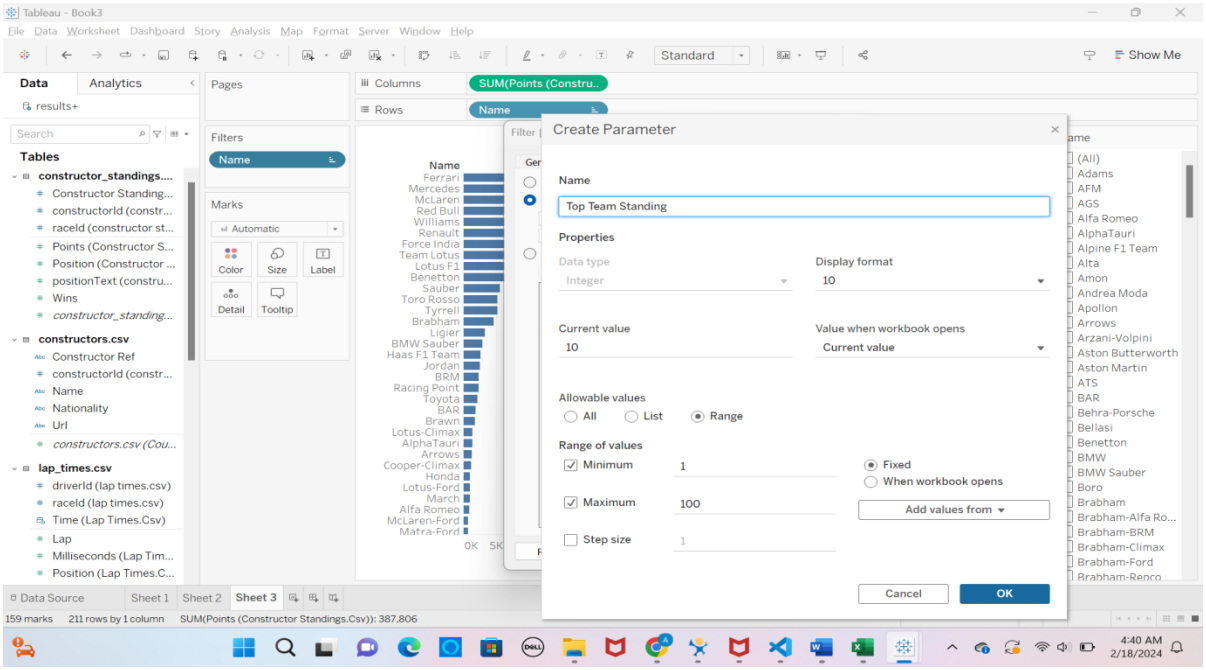
Competitive Adaptation and Innovation: Teams can learn how to adapt and develop to stay competitive in Formula 1 racing by observing differences in status events across teams. Teams that experience more setbacks need to develop and modify their tactics to get over obstacles and maintain their lead. To reduce setbacks, this can entail making investments in new technologies, streamlining procedures, or creating creative race strategies. Teams may overcome obstacles, strengthen their competitive positions, and advance Formula 1 racing by cultivating a culture of innovation and continual improvement.

2)

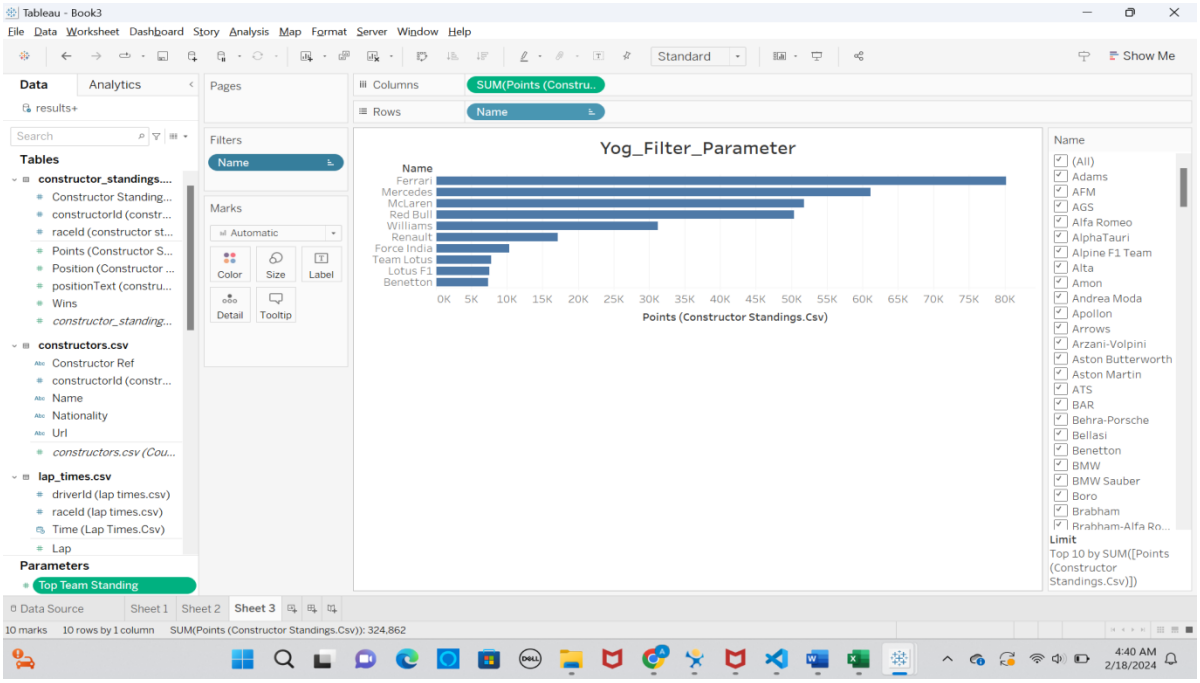
Step: I created a parameter in this step. Initially, the name in the row and the sum (points) in the column have been moved. Afterward, I chose the Top option after dragging and dropping the name in the filter.



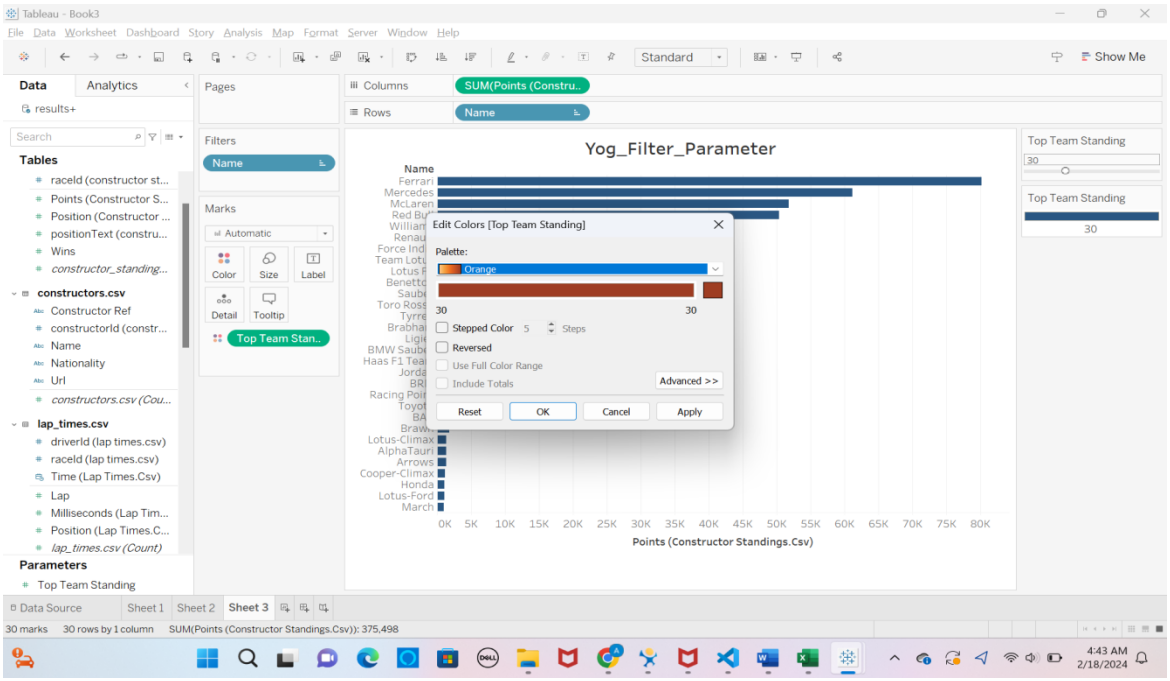
- Here, I have entered the name as Top Team Standing and set everything else as default. As Shown below,



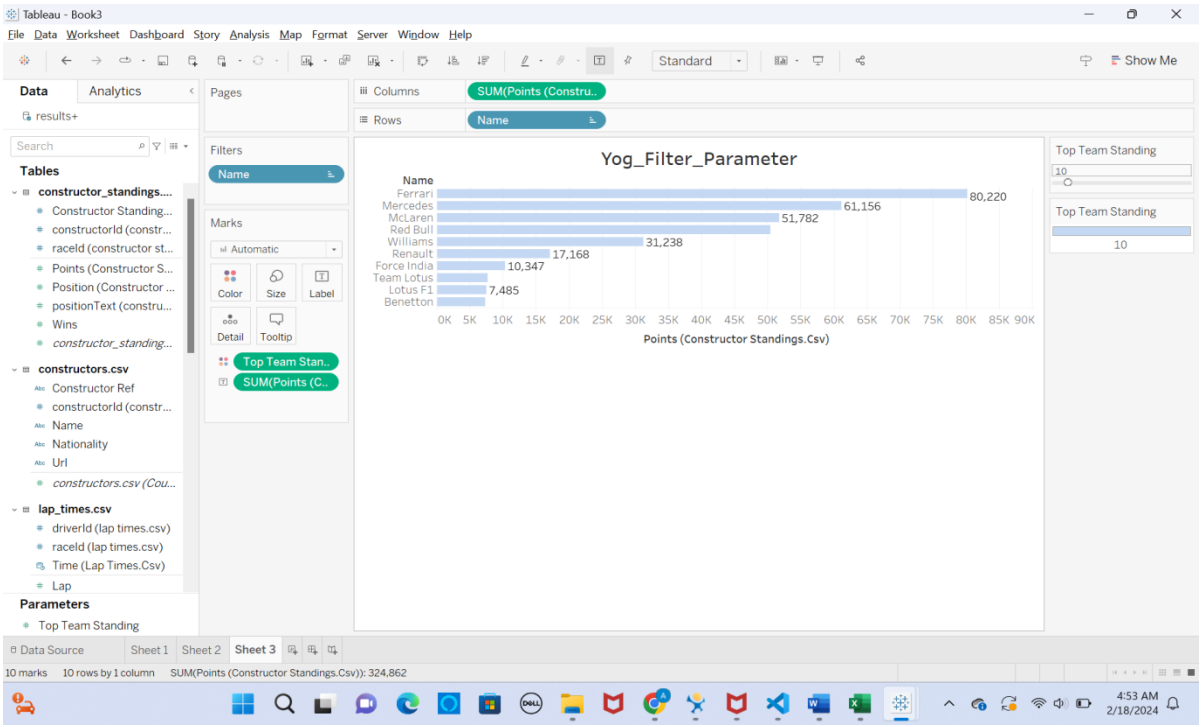
- As we can see in the below screenshot the Top Team Standing has been created under parameters.



- Here, I've dragged and dropped Top team standing under color.



- In the image below, I have displayed top 10 team standing with points.



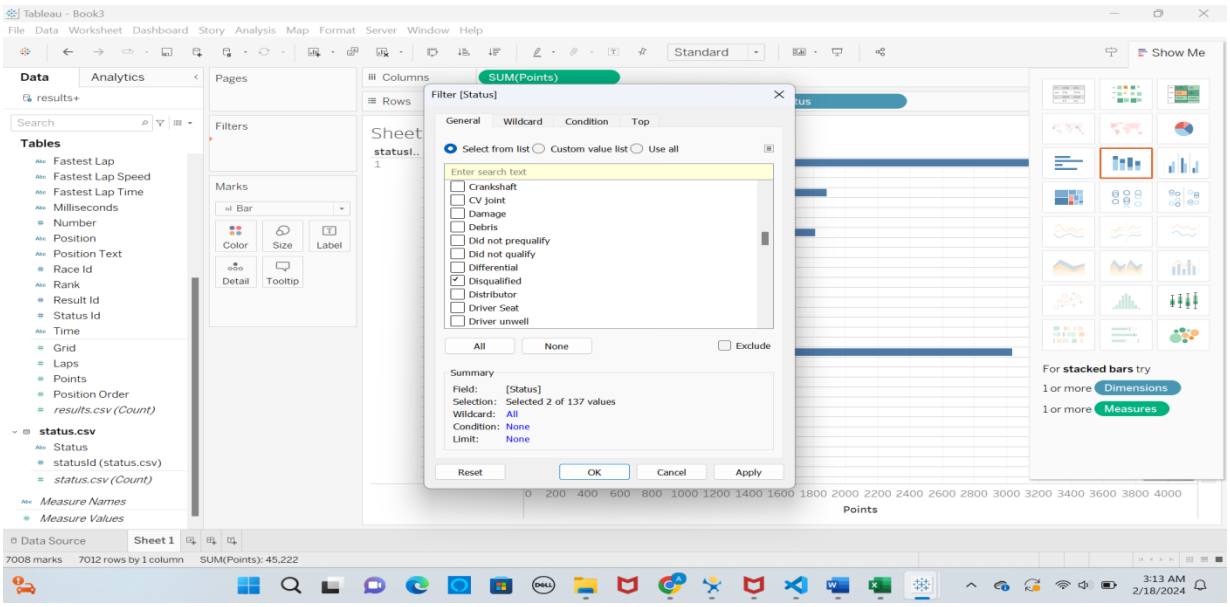
Business insights:

Performance Comparison: Teams may now easily compare their results against the top Formula 1 teams thanks to the introduction of the "Top Team Standing" criterion. Teams can evaluate their standings and pinpoint areas for improvement to aim for higher rankings by analyzing the points of the top 10 teams, which provides insightful information about the competitive environment.

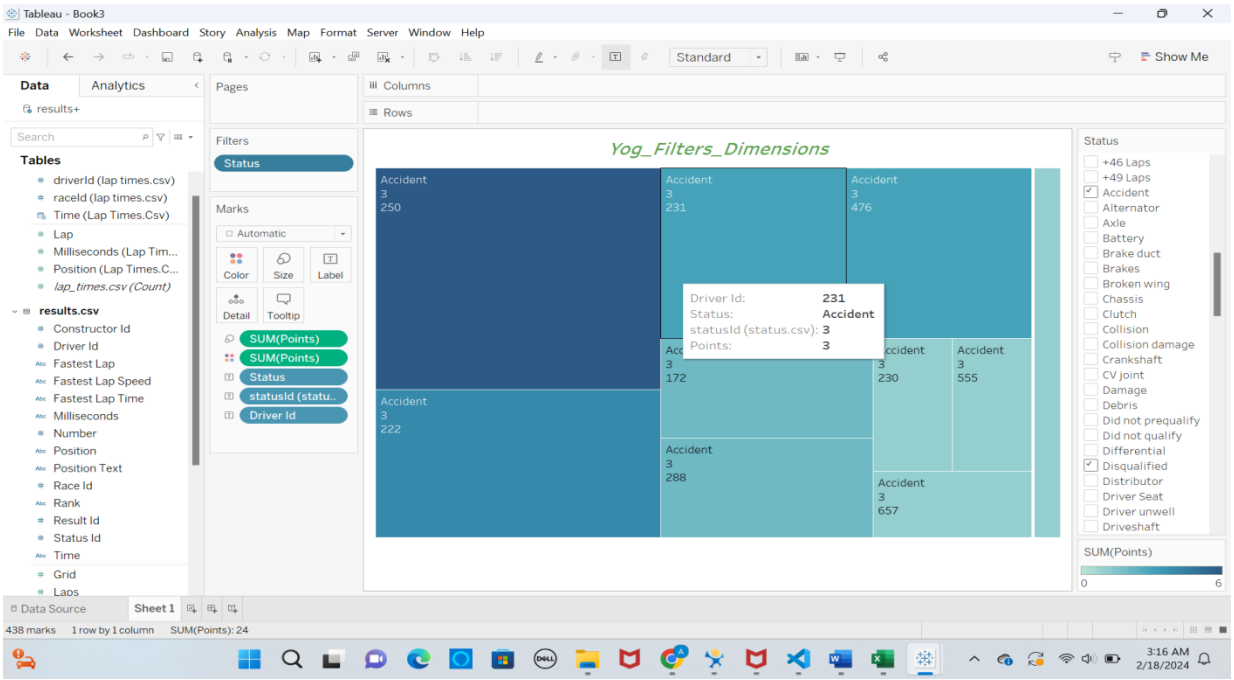
Strategic Planning and Goal Setting: For teams hoping to succeed in Formula 1, visualizing the top 10 teams with their points helps with strategic planning and goal setting. Teams can use this visualization to set realistic yet challenging goals as they work to move up the rankings or take on the front-runners. Organizations can set goals and take action to increase their competitiveness in the sport by matching their tactics to the performance of top teams.

Trend Analysis and Performance Monitoring: Trend analysis and performance monitoring are made possible by tracking the points of the top 10 teams over time. Teams are able to monitor shifts in the top teams' rankings, watch performance patterns, and pinpoint areas of strength or weakness. Teams can modify their plans, investments, and operational techniques to maintain or improve their positions in the competitive and dynamic Formula 1 environment by using this analysis as a guide for strategic decision-making.

3) Here, I have selected the filter option to find out how many drivers were disqualified for accidents.



- I have selected the Tree map option and I've also selected Show filter to display it on the right side.



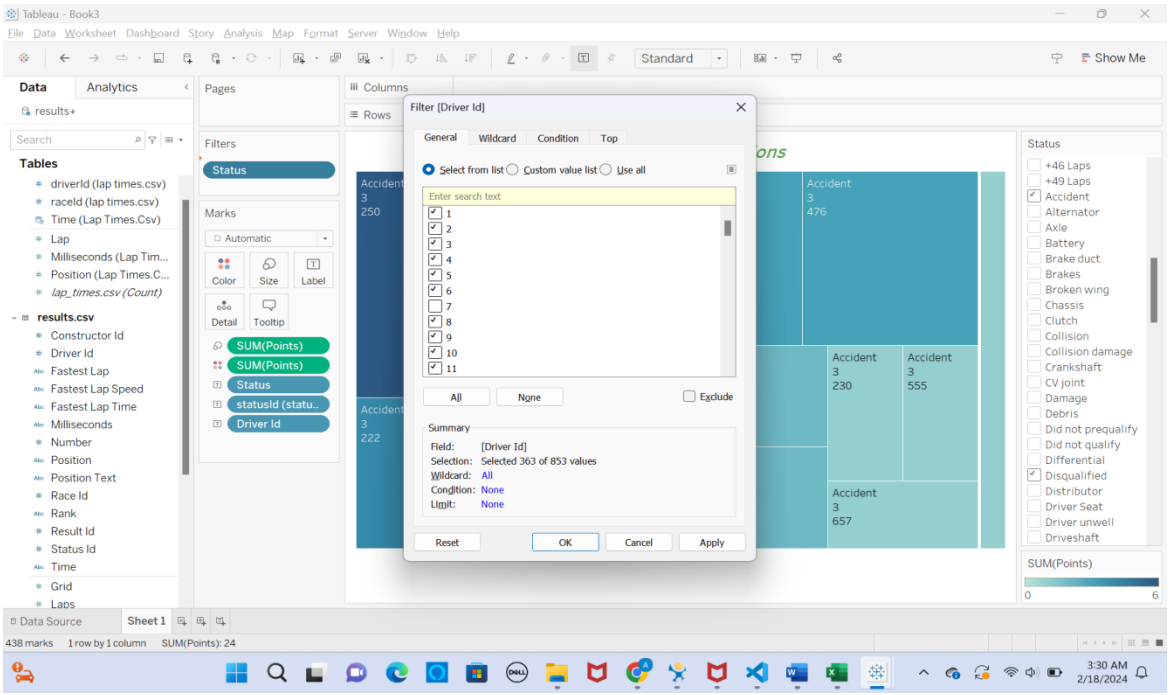
Business insights:

Driver and Team Risk Assessment: Teams can assess the degree of risk attached to drivers or races by looking at the frequency of various status kinds, particularly disqualifications from accidents. A large percentage of disqualifications due to accidents could point out places where driving should be more cautious or where there are major issues with the track conditions. Teams can use this information to modify their tactics, improve driver education, or prioritize safety measures to reduce the likelihood of collisions and the ensuing disqualifications.

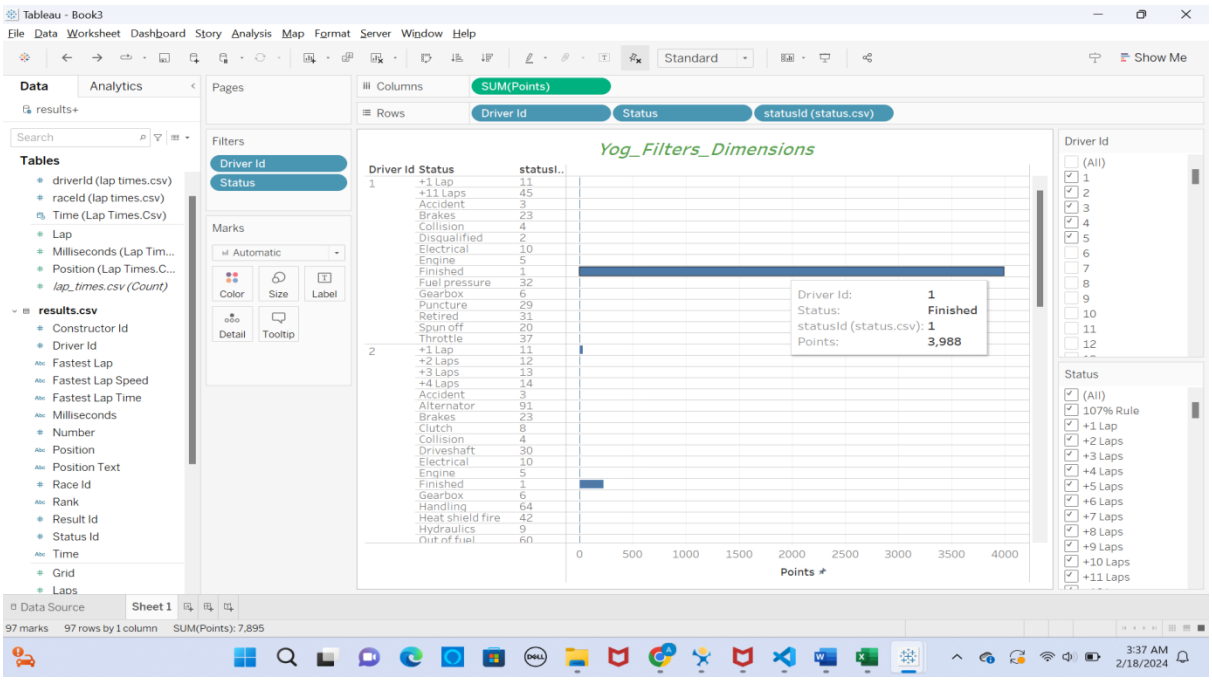
Strategic Decision-Making and Performance Enhancement: Teams can enhance performance by making strategic decisions based on an analysis of the frequency of various status types among drivers. Many accident-related disqualifications could indicate dangerous driving conditions or serious track conditions. Teams can maximize performance on the race track by using this data to improve driver training, make necessary adjustments to strategy, or give priority to safety measures to reduce collisions and ensuing disqualifications.

Trend Analysis and Continuous Development: Teams can find areas for continuous development by looking at patterns in the status event distribution among drivers. Teams can identify reoccurring issues, assess the success of adopted solutions, and make well-informed adjustments to race preparation and execution strategies by tracking changes in disqualification frequency and other status categories over time. Teams can increase driver performance and total team success in Formula 1 racing by refining their approach, reducing risks, and pursuing continuous development through this iterative process of trend analysis.

4)



I have applied two filters, as you can see below, allowing me to select drivers with various statuses. To view their status, I have chosen the top five driver IDs.



Business Insights

Performance Evaluation and Driver Assistance: Examining each driver's status gives important information about how they perform and their dependability in races. Drivers who have a history of being disqualified or receiving other unfavorable statuses would require more support or attention from their teams to resolve technical difficulties or performance concerns. On the other hand, drivers who consistently perform well and do not receive disqualifications might be seen as more trustworthy resources, which could have an impact on choices about sponsorships, contracts, and team chemistry.

Efficient Resource Distribution and Team Structure: Evaluating the distribution of status events among drivers offers valuable information on efficient resource distribution and team structure. Based on drivers' prior performance and status records, teams may need to provide resources like technical support, equipment improvements, or specialist training. Furthermore, knowing how drivers' statuses affect team dynamics can help with judgments on driver pairings, team makeup, and general strategy, which will improve performance and collaboration.

Risk Mitigation and Brand Reputation Management: Teams can recognize and reduce risks to their reputation and brand image by examining the status histories of drivers. Drivers who have a history of disqualifications or adverse statuses could jeopardize the reputations of their teams and sponsors, which could affect relationships and brand impression. Teams can reduce reputational risks and maintain brand integrity by taking proactive steps like fixing performance problems, resolving technical issues, and offering support to drivers. This will increase their appeal to sponsors, fans, and stakeholders in the fiercely competitive world of Formula 1 racing.

References:

Tanmay Khattar, Aug 27, 2023, Data Visualization using Tableau Formula 1, Link: https://medium.com/@tanmayk03/data-visualization-using-tableau-formula-1-4dce9be970e1