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Exercise 2: Gender Breakdown of Winter Olympic Medals Won by Country from 1924 to 2006

Motivation:
Five years after the birth of the Olympics in 1896, the Nordic Games established the first international competition for winter sport where only Scandinavian countries competition. The popularity of winter sports increased with figure skating being recognized an official Olympic sport in 1908 and ice hockey in 1920. It wasn't until 1924 that gender equality started to exist for winter sports at what would later be recognized as the first official Winter Olympics. Notably, women initially competed in a small subset of the existing events. The graphs below show an overall summary of medals won to ascertain which countries have historically done a good job representing their female athletes.
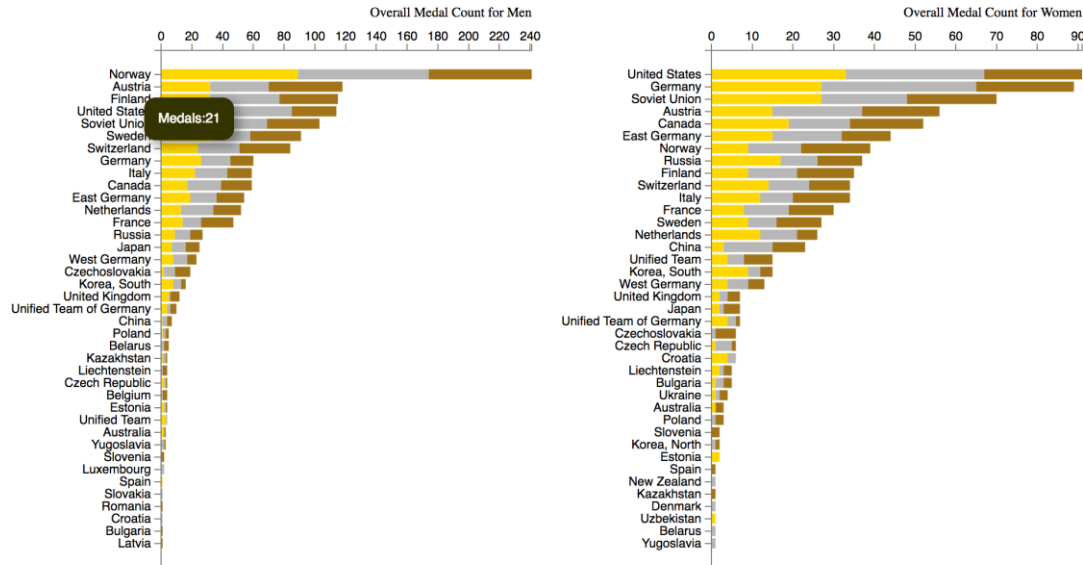
Task Description:
The given dataset includes the Gold, Silver, and Bronze medals won by each nation for each sport for women, men, and pair winners. It should be noted that pair winners (Gender marked as X) were not considered for this visual since solo competitors were found more impactful to show the gender discrepancies, thus removing 123 rows from the 2311 row dataset (5% of the data was not considered). Using this data, the following questions can be answered: Which nation has won the most medals overall for males vs. females? How many medals of each Gold, Silver, and Bronze has each nation won total for males vs. females? What are the rankings by nation?

Visualization:
Using stacked bar charts, the questions above are answered. To explain the most decorated countries by medal count in terms of expressiveness of the dataset, a common scale was used for all nations (separated by gender). The total amount of medals earned by a single nation for each stacked bar is displayed. To explore the different medal counts by class in terms of effectiveness of channels, each of the bars have been split into three different colors corresponding to their respective medals. The graph also includes tooltips that hover, allows the user to be able to see the medal breakdown. When first loading the graphic, an animation appears to draw the user in. The time period and event are shown in the title as well as the motivation giving the audience a background of what they are experiencing.

Winter Olympics: 1924 - 2006

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From the visuals, it can be seen that the nations have been sorted vertically by total medals earned with the nation with the most won medals appearing on top. For the *Overall Medal Count for Men*, Norway leads the ranking with both the most overall medals and also the most medals in each category, unsurprisingly considering their historical success in games even prior to the Winter Olympics.

The *Overall Medal Count for Women* shows that some countries notably Germany and China are more successful in representing their female athletes at the top level of competition compared to the other countries' winners.

Omitted Data/Unanswered Questions:

Certain types of questions are not covered by the visualization. City data were omitted. Questions regarding to gender of athletes such as "Which sports were more often won by males/females?" or "Does a nation win more when they host the games?" are left unanswered. Other questions pertaining to specific time periods such as "Which country won the most medals between 1950 and 1972?" cannot be answered. However, our visualization has accomplished its primary aim of showing the overall ranking of each nation for males vs. females.

Improvements:

Improvements exist which would help a single visualization to express more information, the most effective addition being interactivity. The current single view can only show one aspect of a dataset. The addition of filters such as checkboxes for selection of cities where games were held and sliders for time ranges or even displaying an animation of varying bar charts over the years can display when females began to compete more and for which countries. Applying these filters would then update the chart, overall allowing for more selective displaying of data.

Additional possible improvements include implementing sorting by type of medal to see most gold/silver/bronze medals earned as opposed to overall medal counts or limiting results displayed in order to more closely see differences between countries instead of having the scale zoomed out due to the more successful nations.