Communication Visualization Report

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According to the article "Why is tiny Norway totally dominating the winter Olympics", Norway perform extremely well in Winter Olympics. How did Norway Performed so well?

The goal is to prove Norway did perform well in Winter Olympics and explore the attributes contributing to its performance.

1. Learning objective:

1.1 Recognize the principals.

In the visualization "the number of medals vs the number of rinks", the principal is that the more rinks a country has, the more medal it won in Winter Olympics.

1.2 Recognize the specific details.

In "the number of medals each country won since 1924", the detail of the top 6 country's name and number of medals they won are drawn as text on the top of the bar. In other graphics, the annotation, legends, and axis labels indicate the detail of charts if user want to explore more, but not draw the attention over the principles.

2. Dataset

2.1 Winter Olympics Medals

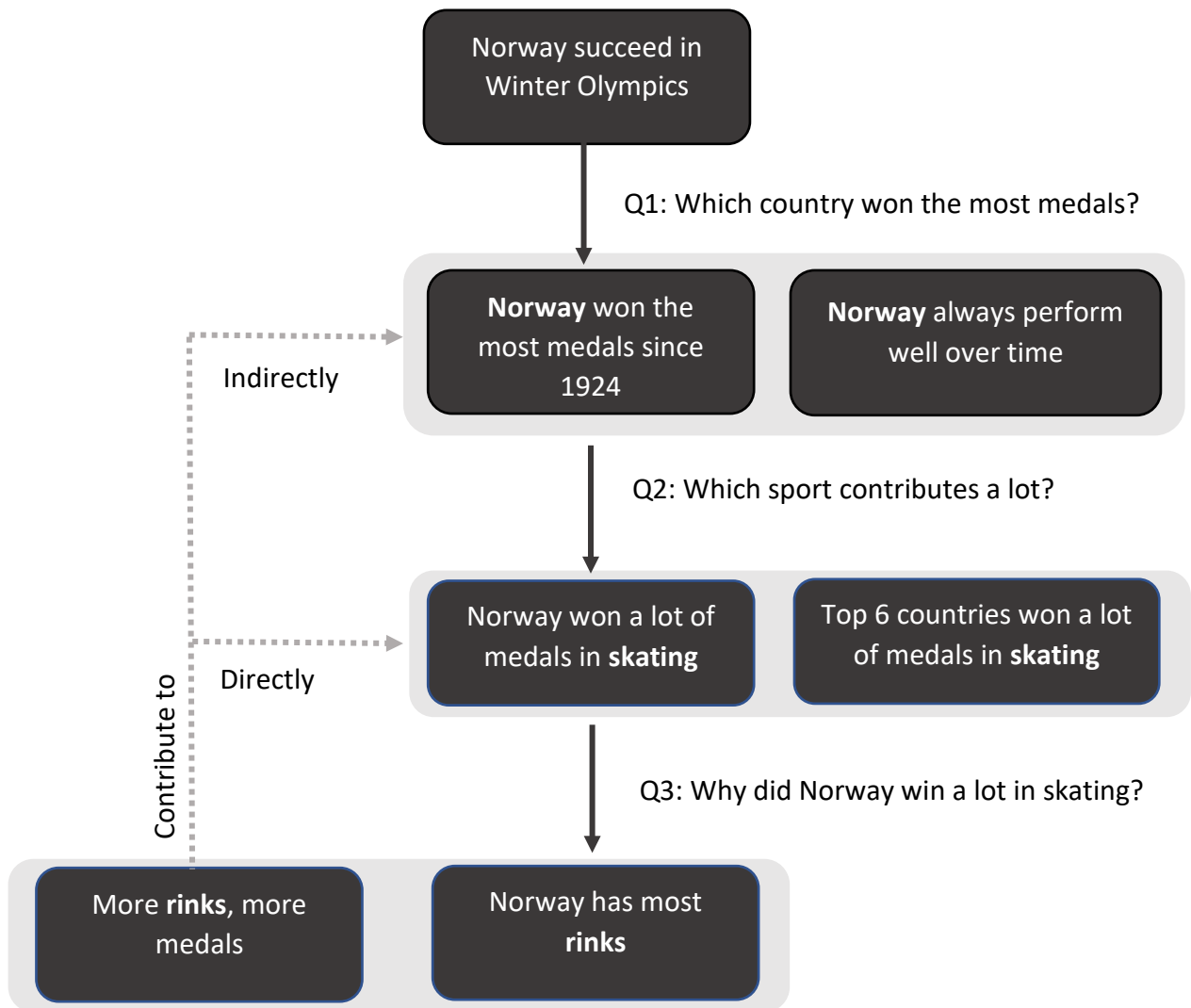http://winterolympicsmedals.com/medals.csv

This dataset contains the records of Winter Olympics from 1924 to 2006. It has the fields city, sport, discipline, NOC, event, event gender, medal. The attributes used in the visualization is NOC, sport, discipline, event gender, as well as medal.

2.2 List of rinks

http://www.speedskatingstats.com/index.php?file=rinks

This data set contains the list of rinks all over the world. It contains the rinks' places, NOC, names.

3. Design Process

Norway succeed in Winter Olympics

Q1: Which country won the most medals?

Indirectly

Norway won the most medals since 1924

Norway always perform well over time

Q2: Which sport contributes a lot?

Directly

Norway won a lot of medals in **skating**

Top 6 countries won a lot of medals in **skating**

Q3: Why did Norway win a lot in skating?

Contribute to

More **rinks**, more medals

Norway has most **rinks**

3.1.Which country won the most medals?

To explore the reason why Norway performs so well, the first step is to prove it did perform well in the Winter Olympics. There are two ways to illustrate it: first to show the number of all the
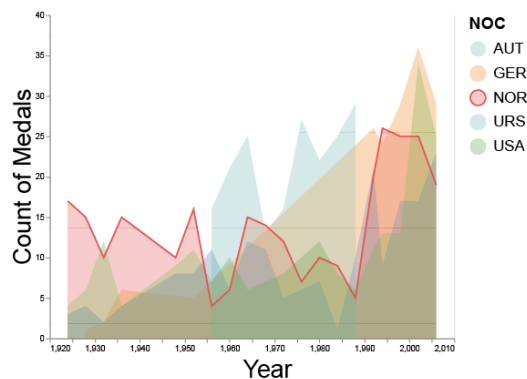
☐ the number of medals each country won since 1924
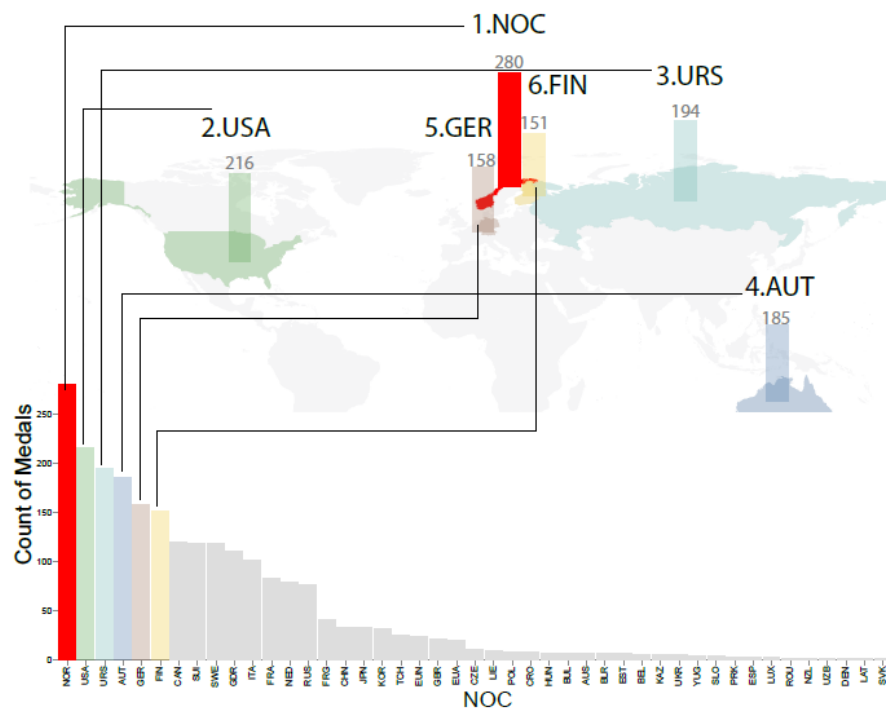
User can recognize the specific details in the annotation on the top of the bar.

medals each country won since 1924: Norway won most medals since 1924!

The other is to show the number of medals each year in Winter Olympics: it always won many medals over time.!

☐ the number of medals each country won over time

3.2. What sport contributes a lot?

What directly impact Norway's medal count in the Olympics? In this step, I explored the medals of each sport top 6 country won in treemap. Norway only won medals in four sports. Skating contributes a lot in the medals in Winter Olympics!

the number of medals of certain sports
top 6 country won since 1924
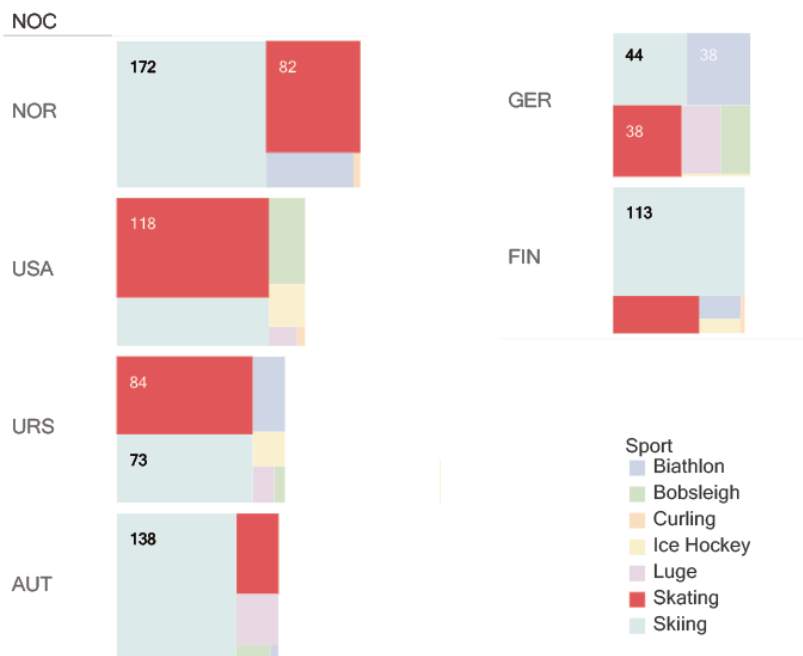
User can recognize the specific details in the annotation on the treemap and the legend on the side.

User can recognize the principle that the number of medals of skating, the red part, takes large percentage of medals in all sports in top 6 countries.

How does medals of skating Norway won over time? In most year skating took a large percentage.

the number of medals Norway won over time
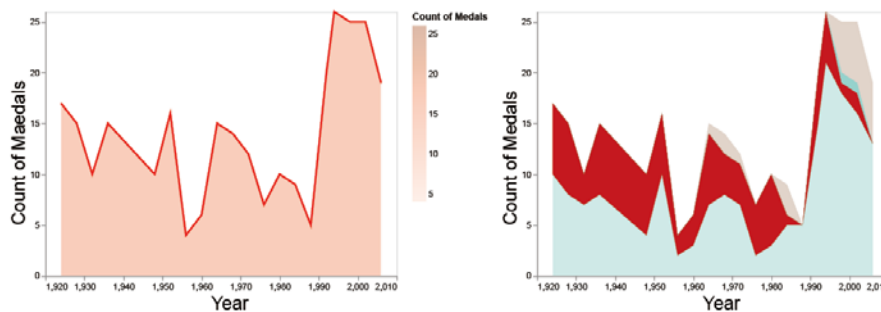
User can recognize the specific details in the legend in the shared legend in the previous chart.

User can recognize the principle that in most year skating took a large percentage of medals in all sports in top 6 countries.

3.3.Why did Norway win a lot in skating?

Generally, the more rinks a country has, the more medals it won in the winter Olympics. Sportsgrounds can affect the performance in the Olympics.

Norway has the most rinks in the world and won the most medals since 1924 in the Winter Olympics.
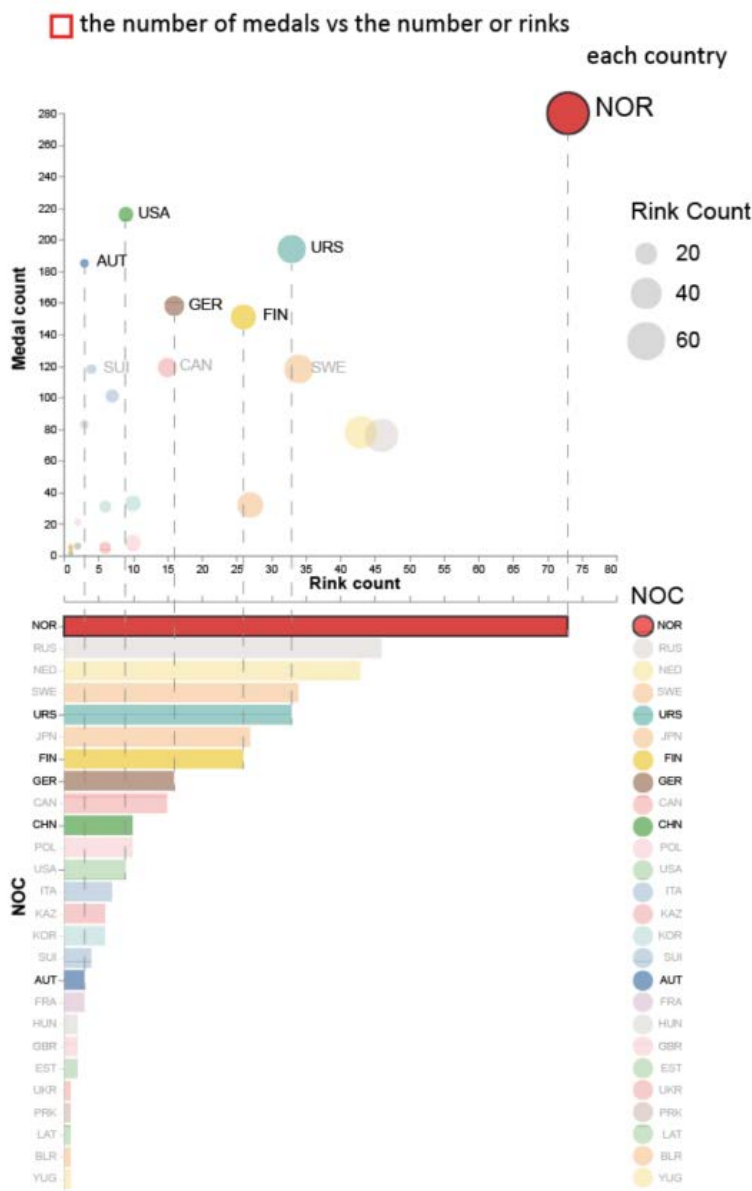
User can recognize the specific details in the legend about number of rinks in size and country in hue.

User can recognize the principle that the more rinks a country has, the more medals it won in the winter Olympics.

Thus, the large number of rinks is one of the reasons Norway succeed in the Winter Olympics; it directly affected the medals of skating Norway won in Winter Olympics and also indirectly affected medals of all the sports Norway won in Winter Olympics.

4. Why final design is good

The story is consistent and logical. First is to prove that Norway did perform well by comparing the number of medals it won with that other countries won. The rest parts are exploration as shown in the design process.

The perception is good. It follows ranking of perceptual tasks. Quantitative variables and Ordinal variable like year, count of medals is encoded in the position and size, which is highest ranking of perceptual tasks of them. Then the nominal variable like NOC or sports are encoded in the color hue, which is in the second ranking. Double encoding also applied.

The preattention is achieved by applying opacity to all the other elements except Norway or skating, which is the element under exploration.

5. Evaluation

Make the expert and novice to read on a large screen. See if they can complete a set of generic retrieval tasks as quickly and accurately as possible within a large hierarchical data set:

a. Speed task: give one group 1 minutes to read the graphics while the other 3 minutes, and then ask the following questions.

b. Accuracy task:

   Describe things they remember.

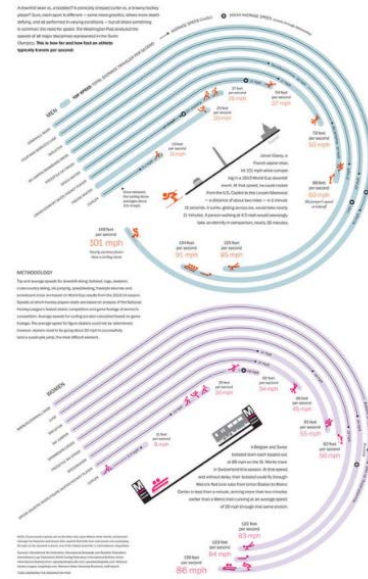   Answer the question: Why did Norway won most medals in Winter Olympics? Which sport contributes a lot to Winter Olympics? Why did Norway perform well in skating in the Winter Olympics?
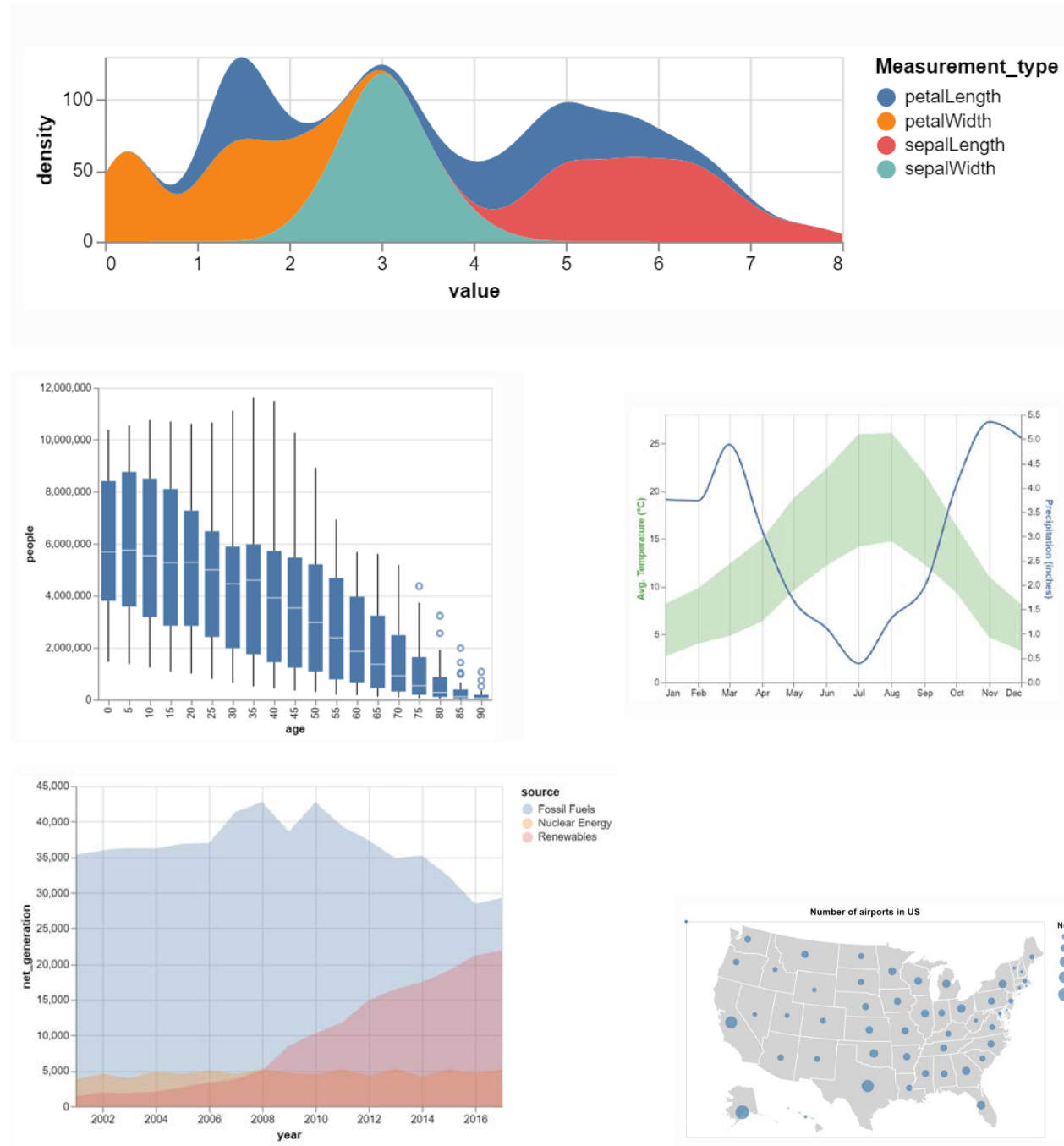
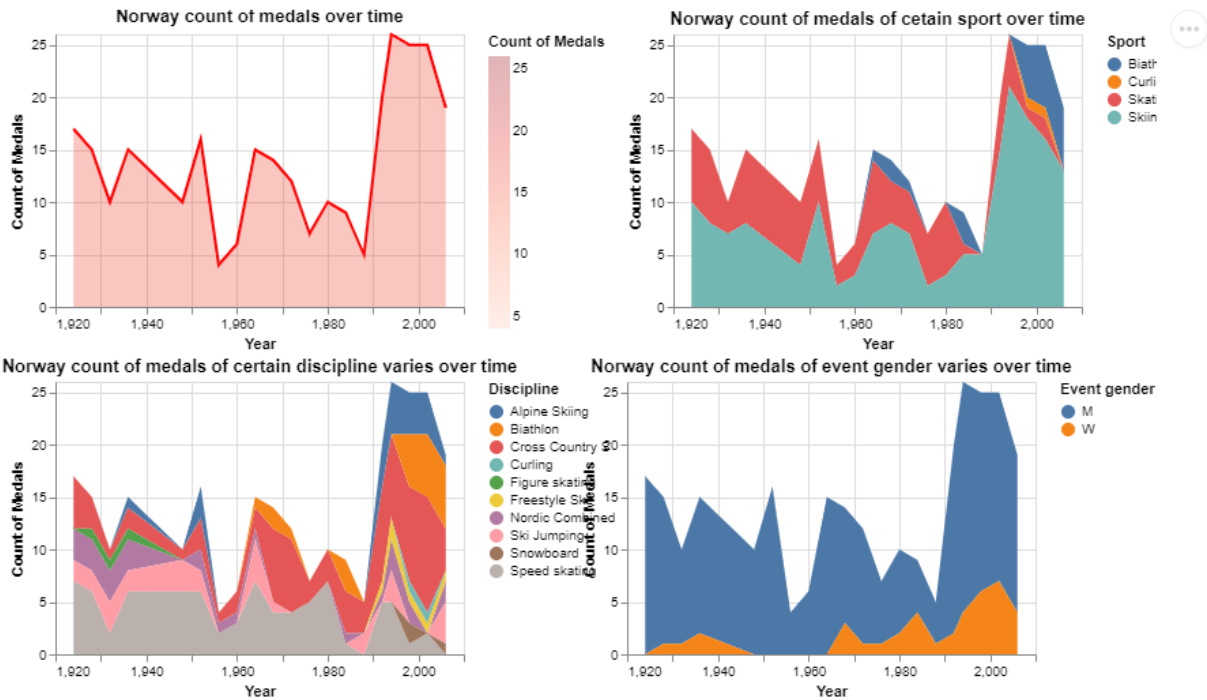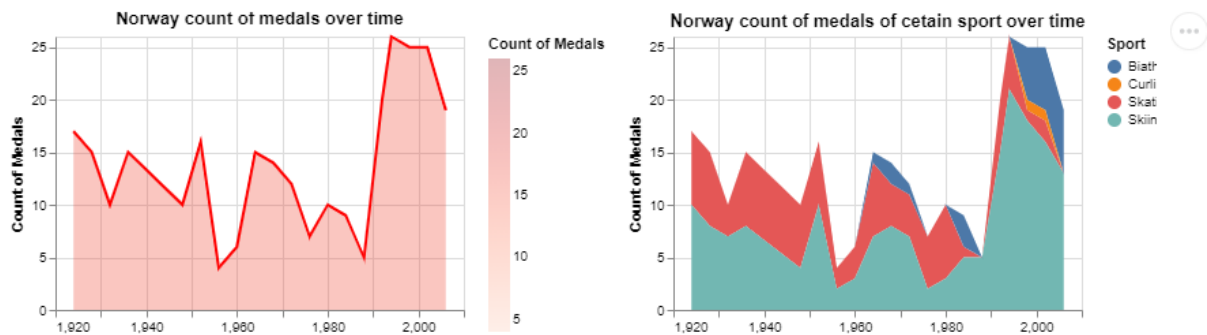# 6.Inspiration:

6.1. design

6.2. altair

7. Other trying:

The number of medals of discipline and event gender vary over time. But the discipline and event gender is not the main topic I discuss in the board. So I didn't use those two chart.
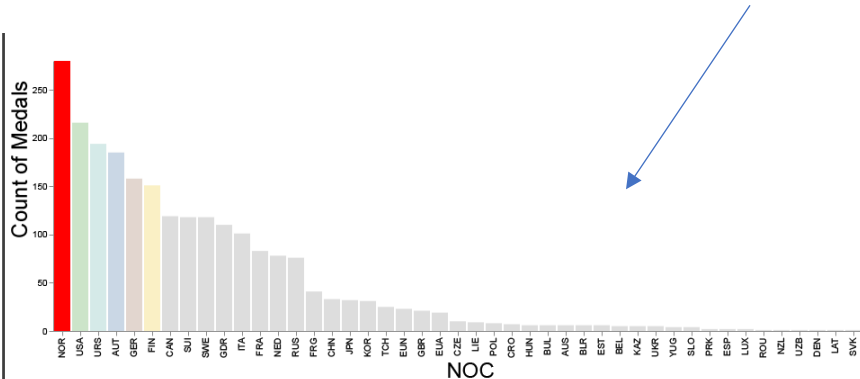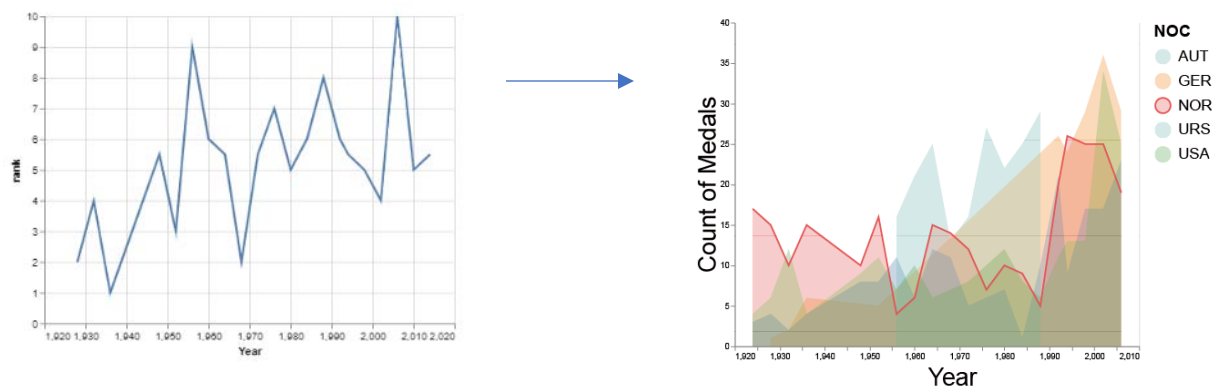

Norway did well in skating and skiing!

In question one, "Which country won the most medals?"Norway's rank of medal count over year. This dataset counts the overall medal of Norway not as the highest one. There might be some mistakes, so I used another dataset instead. I use the charts in the first questions the map and bar ones instead.
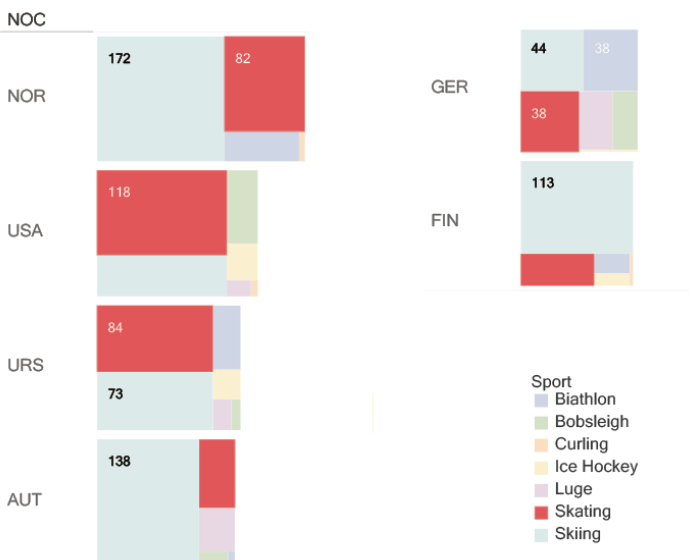

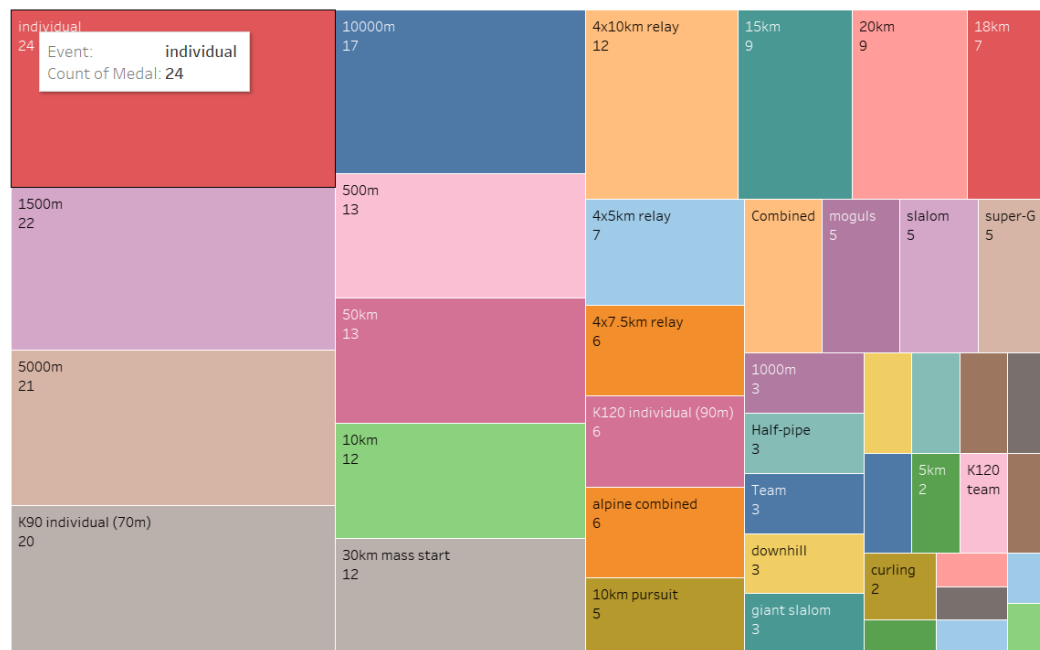the number of medals each country won since 1924
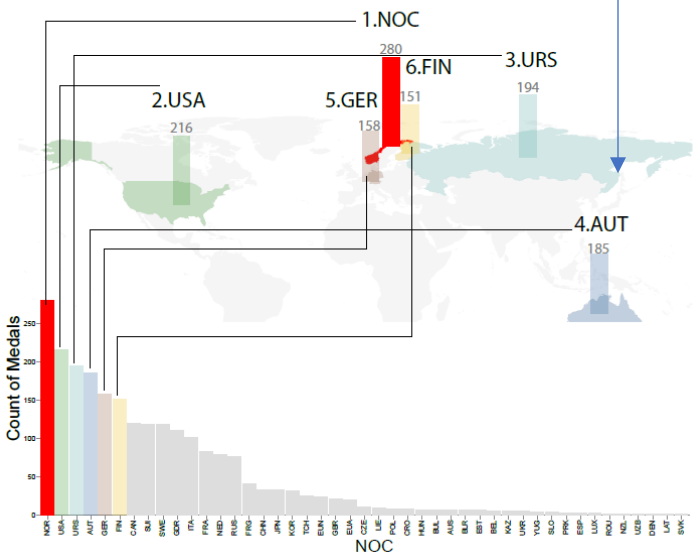
In second question part, "what sport contributes a lot", I first show medals of sports varied over time; and them I think treemap can work better since compare the number of medals between sports is my goal.
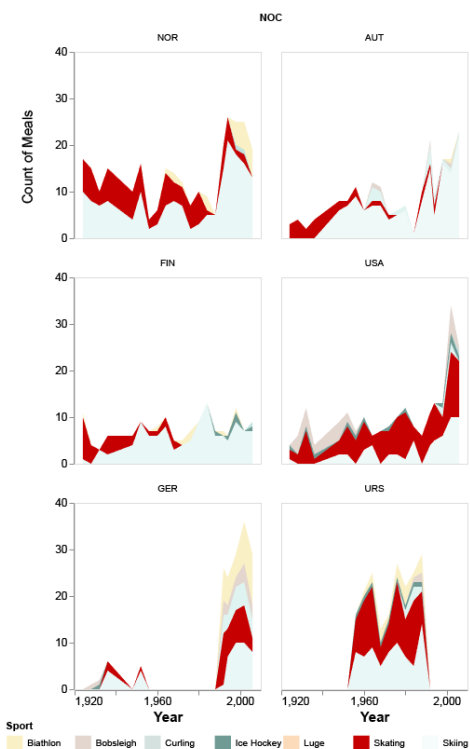
▢ the number of medals of certain sports
top 6 country won since 1924

Norway's models won in each event. Event attribute looks not as much helpful as the sport attribute.

individual 24	10000m 17	4x10km relay 12	15km 9	20km 9	18km 7
Event: individual					
Count of Medal: 24					

The relationship between the Medals per athelete can won in their countries. The red point stands for Norway, which has a medium athelete age 26.