To understand the chart, we need to establish the main difference between The Summer Olympic Games and Winter Olympic Games is The Summer Olympics feature a wide range of sports, including athletics, swimming, gymnastics, basketball, soccer, and more. These sports are typically held in various indoor and outdoor venues. The Winter Olympics, on the other hand, focus on winter sports such as skiing, snowboarding, ice hockey, figure skating, and curling. These events take place in winter-themed venues, often on snow or ice.

Viewing the chart, we can conclude that the number of participating countries between 1998 and 2016 may vary between the Summer and Winter Olympics. We can observe more countries participate in the Summer Olympics due to the broader range of sports and events available. However, the Winter Olympics still attract a significant number of countries specialized in winter sports.

Another thing we can notice is the number of participating countries remains relatively constant over the years for both the winter and summer games, only during the year 2008 can we observe a small increase compared to the rest of the summer games years. It could suggest a consistent level of interest and participation in the games. This might indicate that the games maintained a stable level of international involvement.

**10 countries:**

**\*\*** **Between 1998 and 2016, we can observe an average of between 100 and 200 athletes sent to the winter games with a slight tendency to increase over the years. And an average of between 300 and 600 athletes were sent to the summer games with a slight tendency to increase over the years. The general trend is that more athletes participate in the Summer Games compared to the Winter Games and this could be due to several reasons, for example, that the variety of sports in summer is greater than in winter as they require specific conditions, such as covered mountains snow or ice rinks, which are not available in all countries. The trends we observe by country are:**

**The United States sent a large delegation of athletes to both the Summer and Winter Games during 1998 and 2016. They have consistently been one of the leading countries in terms of the number of athletes participating.**

**Russia has been a strong contender in the Summer and Winter Games, always within the top 5, but in 2016 it was in tenth place. However, it is important to note that Russia's participation in the 2016 Games was affected by a major doping scandal and resulted in a reduction in the overall size of the Russian delegation compared to previous Olympic Games. In general, we can observe they have consistently sent a significant number of athletes to the Olympics.**

**China entered the top 10 in 2000 in tenth place. Then China has been increasing its participation in the Summer Olympics over the years. We can analyze China has relatively lower performance in the Winter Olympic Games until 2016 because it has not entered the top 10 of the winter games, and it could be due to the factor China has limited access to snowy mountains and winter sports facilities compared to countries with a longer winter season or mountainous terrain.**

**We can analyze that Germany is one of the few countries that actively participates in the Summer and Winter Olympic Games. They have a large number of athletes representing the country between the years 1998 and 2016.**

**Canada has a strong presence in the Winter Games, between 1998 and 2016, they were always in the top 3 of the winter games. They also sent a notable number of athletes to the Summer Games. We can conclude Canada's success in winter sports has been particularly notable.**

**Australia has a strong tradition of sending athletes to the Summer Games. While they have a smaller presence in the Winter Games.**

**Japan is an active participant in both the Summer and Winter Games. They consistently send a substantial number of athletes to the Olympics.**

**Italy has a strong participation in the Winter Games. They also send a respectable number of athletes to the Summer Games.**

**France is another country that has a significant presence in both the Summer and Winter Games.**

**Great Britain typically sends a substantial number of athletes to the Summer Games. While they are not as prominent in the Winter Games.**

**Sweden, Norway, Finland, Switzerland, and Austria have strong performances in Winter Olympic Games. We might think that the combination of a strong winter sports culture, favorable geographical conditions, well-developed infrastructure, government support and a tradition of success has contributed to the large number of participants from Sweden, Norway, Finland, Switzerland and Austria in the Winter Olympic Games.**

Between 1998 and 2016, we can observe an average of between 100 and 200 athletes sent to the winter games with a slight tendency to increase over the years. And an average of between 300 and 600 athletes were sent to the summer games with a slight tendency to increase over the years. The general trend is that more athletes participate in the Summer Games compared to the Winter Games and this could be due to several reasons, for example, that the variety of sports in summer is greater than in winter as they require specific conditions, such as covered mountains snow or ice rinks, which are not available in all countries. The trends we observe by country are:

USA, Germany, Canada, France, Japan are countries that actively participates in the Summer and Winter Olympic Games. They have a large number of athletes representing the country between the years 1998 and 2016. Russia has been a strong contender in the Summer and Winter Games, always within the top 5, but in 2016 it was in tenth place. However, it is important to note that Russia's participation in the 2016 Games was affected by a major doping scandal and resulted in a reduction in the overall size of the Russian delegation compared to previous Olympic Games. China entered the top 10 in 2000 in tenth place. Then China has been increasing its participation in the Summer Olympics over the years. We can analyze China has relatively lower performance in the Winter Olympic Games until 2016 because it has not entered the top 10 of the winter games. Australia and Great Britain have a strong tradition of sending athletes to the Summer Games. Sweden, Norway, Finland, Switzerland, Austria have strong performances in Winter Olympic Games, we might think that the combination of a strong winter sports culture, favorable geographical conditions, well-developed infrastructure, government support and a tradition of success has contributed to the large number of participants from those countries.

Table Tennis 2016 100%

Trampolining 2016

Synchronized Swimming 2016

Rhythmic Gymnastics 2000

Softball 2000

Baseball 2000 0%

No present 2016 Baseball was not included in the Olympic Games in 2016. The sport was removed from the Olympic program after the 2008 Beijing Olympics

Boxing 5% 2000/2016

Less than 49% 19 sports 2000

Greater than 50% 4 sports

Less than 49% 18 sports 2016

Greater than 50% 5 sports

During Rio 2016 we can see that the percentage of representation of women was 100% for Table Tennis, Trampoline and Synchronized Swimming. Baseball and Boxing were the sports with the least female participation, with a percentage of less than 5%. In that year, five sports had a percentage of female representation greater than 50% and eighteen sports had less than 49% female representation.

During Sydney 2000, we can see that the percentage of representation of women was 100% for Rhythmic Gymnastics and Softball. Baseball and Boxing were the sports with the least female participation, with a percentage of less than 5%. In 2000, four sports had a percentage of female representation greater than 50% and nineteen sports had less than 49% female representation.

Based on the data, the percentage of total participation in Rio 2016 was 47% in comparison to men. In Sydney 2000, the percentage of total participation was 45% in comparison to men. These figures suggest that there has been a slight increase in the representation of women in the Olympic Games from 2000 to 2016.

Comparing the average number of medals won per athlete in Sydney 2000 and Rio 2016, we have the following information:

Sydney 2000: The average number of medals won per athlete is 0.20.

Rio 2016: The average number of medals won per athlete is 0.18.

The average number of medals won per athlete decreased from Sydney 2000 (0.20) to Rio 2016 (0.18). This indicates that, on average, athletes in Rio 2016 won slightly fewer medals compared to their counterparts in Sydney 2000. Although there is a decrease in the average, the difference between 0.20 and 0.18 is relatively small. This suggests that the change in the average number of medals per athlete between the two Olympics is not substantial.

The presence of sports like Water Polo, Rowing, Synchronized Swimming, Hockey, and Handball in both the top rankings for Rio 2016 and Sydney 2000 could be attributed to several factors:

1. Water Polo, Rowing, Synchronized Swimming, Hockey, and Handball are all sports that are part of the Summer Olympic Games and are typically played outdoor or indoor, therefore they do not have the limitation in comparation with the winter games.
2. These sports may have traditionally been strong events for certain countries, and thus, consistently perform well across multiple Olympic Games.
3. Some of these sports might be more popular or have a long-standing tradition in certain countries, leading to a higher level of participation and competitiveness.
4. Countries with a strong history in these sports may have continued to invest in training programs, infrastructure, and resources, ensuring a competitive edge and maintaining their position in the rankings.