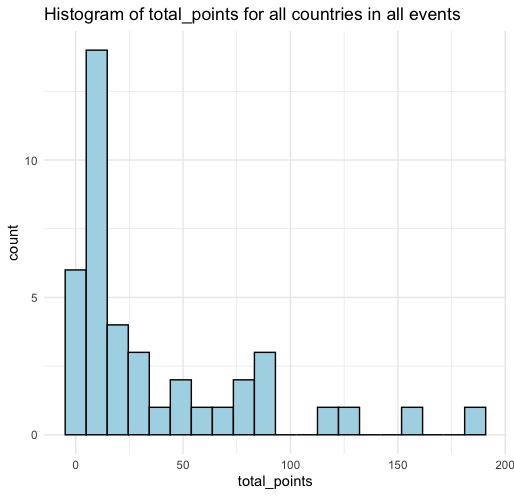
1. The below graphic is a histogram of total\_points for all countries. Describe the distribution of total\_points. Is there a skew, if so, what is it and what does it mean?

The data is right-skewed meaning that the values are clustered around the smaller values for total\_points, so it is more common for nations to do poorly in Olympic rowing than well.

1. Using <rowing_medals.csv>, obtain the summary statistics for total\_points and fill them in below.

**Minimum**: 1.00 **Lower Quartile:** 6.00 **Median**: 15.00 **Mean**: 38.15

**Upper Quartile**: 57.00 **Maximum:** 187.00

1. The UK has 154 total\_points in the dataset, determine whether or not that is an outlier. Use calculations to justify your answer.

An outlier

IQR = Q3-Q1 = 57-6 = 51

1.5\*IQR = 1.5\*51 = 76.5

Q3 +1.5\* IQR = 57 + 76.5 = 133.5

154> 133.5

1. The below table shows the top 5 nations ranked by total\_points, using the same method as in question 3, determine if there are any other outliers.

A screenshot of a computer code

Description automatically generatedOnly USA is an outlier.

187>133.5

131<133

121<133

87<133

1. Using your answers to questions 2-4 draw a boxplot of total\_points.

A graph with a bar and a line

Description automatically generated

1. The below plot shows total\_medals ranked by NOC. Based on the distribution of this plot would it be fair to assume that economic welfare is a confounding variable in predicting nations’ performance in Olympic rowing? Explain why or why not.

A graph of a bar chart

Description automatically generated

Based on this graph it would not be fair to assume that economic welfare is a confounding variable in predicting nations’ performance in Olympic rowing. If there was a GDP variable it may be easier to assess this.

1. What could be a reason for the distribution of medals and points being so heavily skewed towards certain nations winning more than others?

Rowing shells (boats) are expensive, meaning rowing is a sport that requires a great deal of funding. Some nations make funding rowing a priority while others do not. This can also ultimately come down to which countries are wealthier in general than others.

1. In the bar plot in Question 6, notice that the German Democratic Republic (GDR) or East Germany is listed as a country. Since the end of the Cold War the GDR is no longer a country. What would you do with countries in the dataset that are no longer existent today? How would it impact the data?

Open ended, no right or wrong answer, credit for answering.

1. There is a lot of debate about how to best weigh the points for the different types of medals. Read [this link](https://www.topendsports.com/events/summer/medal-tally/rankings-weighted.htm) about different medal point weighing and decide on a method you think would be best. How would the new method alter the data?

Open ended, no right or wrong answer, credit for answering.