Shiny Dashboard Description

# Motivation for this dashboard

As a mathematics educator for nearly 10 years, the majority of which has been in international schools, I often help my students get involved in a variety of middle and high school level mathematics competition. The competitions my students participate in are usually locally based, but I’ve always been interested in larger international competitions. The International Mathematics Olympiad (IMO) is arguably the largest and most prestigious mathematics competition around. Secondary students up to age 20 can compete, and it has been running since 1959 with just 7 countries participating, and has grown to include over 100 countries each year. With this interest in mathematics competitions, I wanted to share and display trends in the results to further summarize how countries and individuals have performed in this competition over the years.

# What I would like to communicate

In 1984, the competition organizers began publishing not only the overall winners but also the breakdown of individual scores per question, country and individual. This is why most of my data involves only summaries of results since 1984 rather than since its founding in 1959. With this dashboard, I would like to communicate the overall strengths of different countries and individuals in this competition over the 1984-2017 time period. In the table page, I also have summarized the all-time country-specific results to allow the user to see overall trends in country participation and success.

# What options I gave the user

I gave the user three different tabs to view with various displays with hover-over effects and some searchability. Within the scatter plot tab, I also allowed the used to enter a country of interest to view the yearly top scorer information for that country. On the results table page, I added filterable columns for country, year and number of years participated, as well as made all columns sortable.

# Why I chose the displays I did

I chose to display three different pages within this dashboard. One summarizes the number of #1 rank finishes for each country (since 1984) in map form, which clearly shows the dominance of certain countries in the competition over time. Another shows the score of the highest scorer each year, which allows the user to look at the performance of individuals and country teams in the years displayed, and finally I added in a table with the all-time country-specific results which allows the user to investigate overall trends in participation. It also didn’t hurt that I made most of these displays (or similar versions) in previous assignments which allowed me to more efficiently embed them into the shiny dashboard.