CS 445/545 Project Proposal - Olympics

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I. Objective

Every two years (with the exception of 2020), athletes around the world come together to represent their country and compete in the Olympic Games. Those who have watched the Olympics throughout the years have more than likely noticed that some countries have much better odds at medaling in certain events than others. Some of the most popular examples include Jamaica's track and field team, America's basketball team, and Canada's hockey team. And there are many others that have emerged over the past 20 years.

The objective of our project is to find out whether there are any external factors at play that might influence the outcomes for these events. For example, we will be looking to see if there is any correlation between the countries that medal in summer vs. winter Olympics and the climate of those countries. We will be considering both the climates of the countries that the medaling athletes are from as well as the climate of the hosting countries during the time of the Olympics. We will also take a look at how each country's culture might affect how they perform for selected events.

II. Motivation For Project

The Olympics have been a staple in households across the world since the formation of The International Olympic Committee and the first Olympic Games commenced in Athens, the capital of Greece, in 1896. No more than 28 years later, the first Winter Olympic Games took place in Chamonix in the French Alps.

The motivation for this project simply stems from our interest in and enjoyment of the Olympic Games. We thought it would be neat to choose three sports from both the Summer and Winter Olympic games and evaluate the games in which countries excel in the best. We then decided to take it a step further and evaluate whether or not a country's climate affects its performance in the Summer vs. Winter Olympics. In other words, we aim to identify correlations between a country's average climate and its outcomes in the Summer and Winter Olympics.

The sports we chose to examine were chosen based on each group member's personal preference and interests. We each chose a Summer Olympic sport and a Winter Olympic sport. In the end, we decided on gymnastics, archery, track & field for the Summer Olympics and hockey, snowboarding, and freestyle skiing for the Winter Olympic games. Ultimately, we suspect countries with colder climates to perform better in the Winter Olympics and countries with warmer climates perform better in the Summer Olympics. We are anxious to conclude whether or not these speculations are reflected in the data we collect through the completion of this project. Additionally, we would like to inspect how the current temperatures during the Olympics affects the athletes directly.

III. Detailed Discussion of Data

We have decided to work with the data for three Summer Olympic sports and three Winter Olympic sports. The three summer sports we are looking into are gymnastics, archery, and track & field. The three winter sports we are looking into are hockey, snowboarding, and freestyle skiing. We will need the data for the medals received by all the countries involved for a certain time period. We have not determined the time period in which we will be evaluating. We will most likely need to reduce gymnastics and track and field to more specific events, such as simply looking at floor exercise, uneven bars, balance beam, or vault for gymnastics and running, jumping, and throwing for track & field. Using this data, we will look at the progression of each country to see how they have improved or declined over time.

Once we have the data for the progression of each individual country, we will look into the average climate for the countries in order to determine if the climate has an effect on the performance of the athletes. The data we will need for this comparison includes the average temperatures over a year for each of the countries involved in the Olympics. We will examine the average climate for the highest ranking countries for each sport to determine if the average climate has an effect on their performance. The average climate will include average temperatures and rainfall. Even though some of the sports are performed indoors, the outdoor temperature can still affect the athletes performance, which can be shown in this project. We are also looking to determine if a country being generally warmer or colder affects how they perform in the Summer vs. Winter Olympics. To elaborate, a country's climate may influence the popularity of particular sports

within that region, and, therefore, may be more likely to produce athletes who excel in those sports. In other words, we will be evaluating the data to determine if cultural differences based on a country's climate affects how they perform in the Summer vs. Winter Olympics.

IV. Responsibilities of Team Members

Megan Stanton (Coordinator)

- Collect Medal Data
- Create Graphs for Medal Data

Jaidin Jackson (Recorder)

- Analyze Data
- Record Progress

Joshua Gray (Checker)

- Collect Weather Data
- Create Graphs for Weather Data

Everyone

- Parse Data Sets

V. Time-Line of Milestones

October 1st:

Find datasets for each of the aforementioned sports including details about medal wins for each country.

October 15th:

Compile the data into a program so we can create graphs and analyze them.

October 29th:

Determine which countries have the highest average medal count for each sport.

November 5th:

Gather data for the average climate of the countries that have the highest average medal count.

November 12th:

Create graphs for the average climate compared to the medal count of the countries.

November 19th:

Gather data for the average climate during the Summer and Winter Olympics.

November 23th:

Create graphs for the average climate of the countries compared to the average climate during the Olympics.

November 26th:

Start work on the final project report.

November 28th:

Complete objective, data, and algorithms sections of the final project report.

November 30th:

Complete results, primary issues, and future work sections of the final project report.

December 1st:

Revise draft of final project report.

December 3:

Submit final project report.

VI. Expected Outcome

If we take a look at the events mentioned in the Objectives section, there are a few patterns that can be seen with just those few examples. We expect countries in colder climates to perform better in the winter events and countries in warmer climates to perform better in the summer events. We also expect that the climate during the Olympics will affect the athletes differently depending on the average climate of their home country. It is anticipated that even the indoor sports will be affected by the average outdoor climate of their home countries and the average outdoor climate during the Olympics.