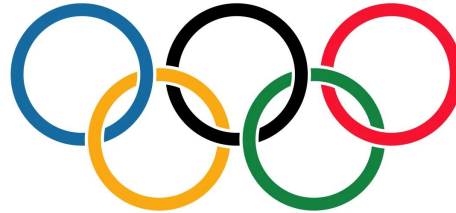# The Olympic Games

What is more important to Medal Count Success: Population Density, GDP, or Total Population?

Dataset Overview

**In this analysis we reviewed four different datasets.**

- The first dataset we have referred to as the Olympic Dataset. This dataset consists of about 270,000 rows each representing Olympic information for each event from 2016 and going back to 1896. The information included in the dataset includes the Olympians name, country represented, event and the medal achieved. This was the main dataset we used in our analysis. We chose this dataset because it provided a lot of records and countries to aggregate.
- The other three datasets we used were gathered from the World Bank Group to find information on a country or nations GDP, Population and Population Density. The good thing about these three datasets was the uniformity of the structure of the data going back into the 1960's.

Overview of Project

The purpose of this analysis was to obtain greater understanding of whether a country or nation's GDP, Population or Population Density could be predictor of Olympic success. To achieve this we sought to analyze the following information:

- Total Medal Counts by Country
- Gold Medal count by GDP and correlation
- Gold Medal count by Population and correlation
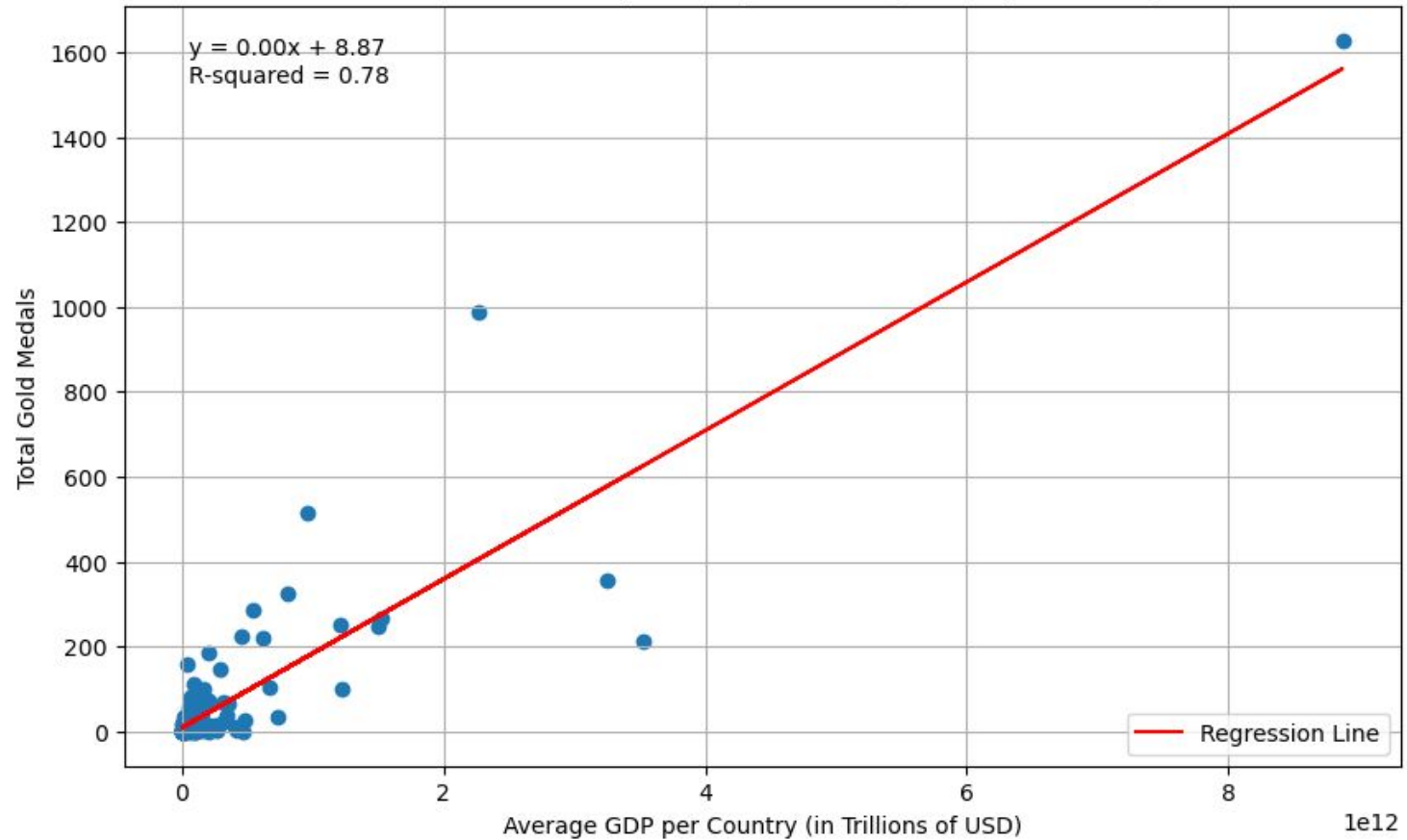- Gold Medal count by Population Density and correlation
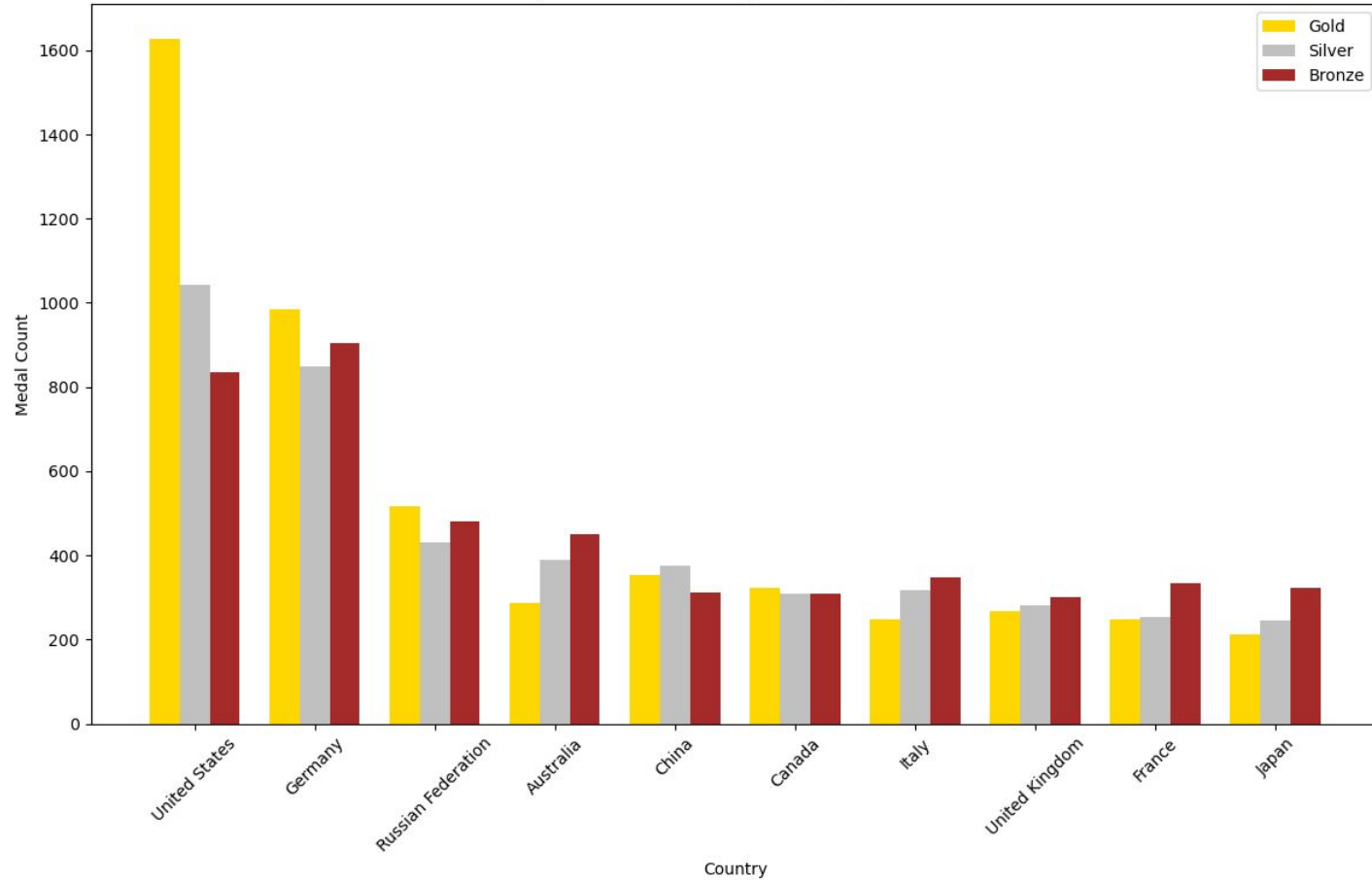
Correlation between Average GDP per Country and Total Medal Count
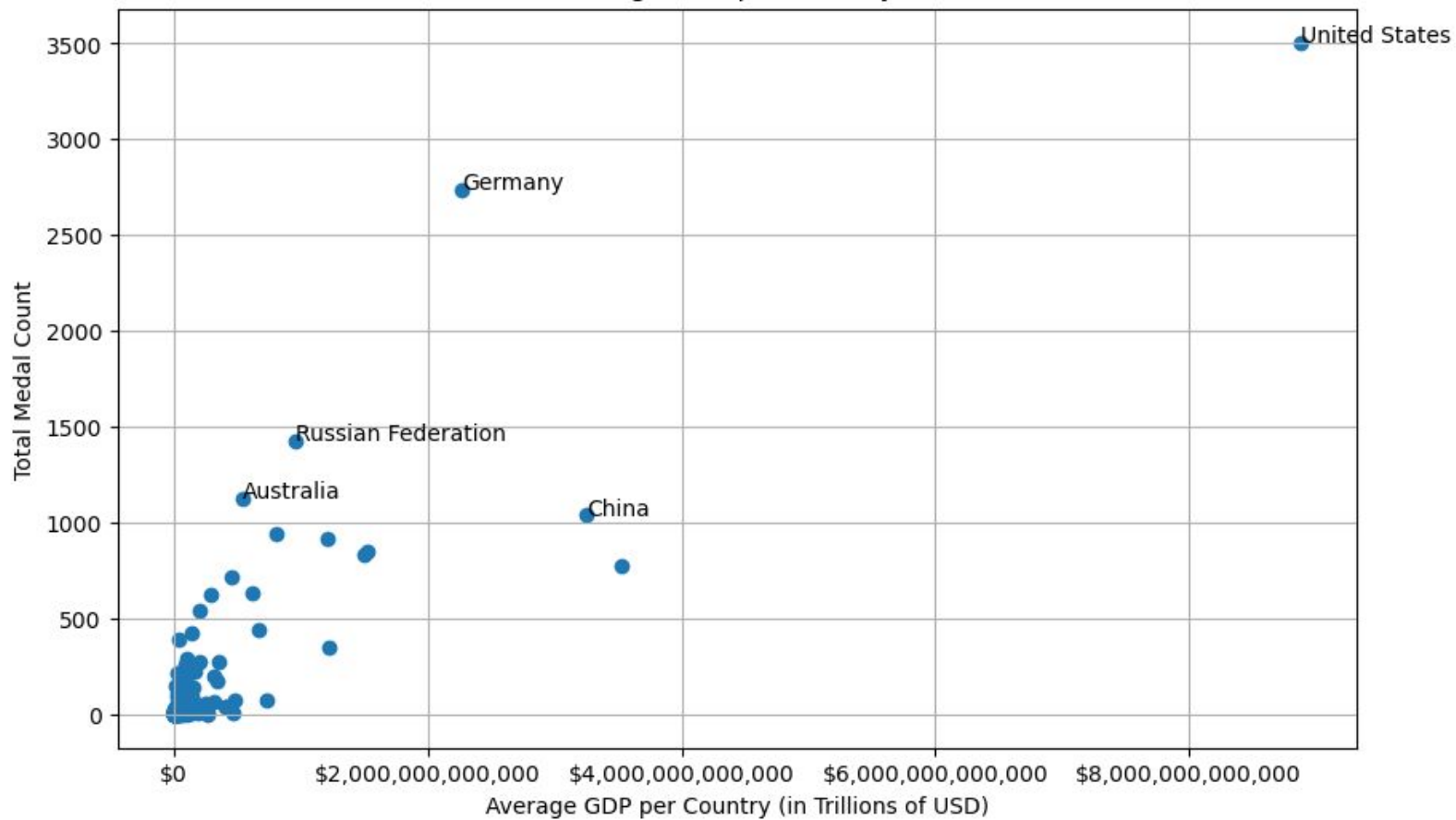
Total Gold Medals by Country vs. Average GDP per Country

y = 0.00x + 8.87
R-squared = 0.78

Top Ten Country Values

```
Top Ten Countries by Average GDP, Pop. Density and Population Value:
+-----+--------------------+--------------------+---------------------+---------------------+
|     |      Country       |     GDP Value      |    Density Value    |      Pop Value      |
+-----+--------------------+--------------------+---------------------+---------------------+
| 117 |   United States    |   8872950000000.0  | 29.066054790499997  |     266134633.45    |
| 56  |       Japan        |   3522137450319.1  |    332.505250865    |     121356100.0     |
| 20  |       China        | 3252740392253.1875 |   130.85271605625   |    1228474687.5     |
| 41  |      Germany       | 2269166666666.6665 | 231.57429846111114  |  80809943.72222222  |
| 116 |   United Kingdom   |  1520070377917.55  |    244.049884265    |     59042988.5      |
| 38  |       France       |  1492550392552.35  |    108.6882873665   |     59513705.75     |
| 14  |       Brazil       | 1219285714285.7144 | 21.912655157142858  |  183149039.57142857 |
| 54  |       Italy        |  1209905882434.85  |    193.477461825    |     57047451.5      |
| 91  | Russian Federation | 956461538461.5385  |  8.870024847384615  |  145288689.23076922 |
| 18  |       Canada       |  810860366670.85   | 3.2338075074000003  |     28992992.25     |
+-----+--------------------+--------------------+---------------------+---------------------+
```

Bottom Ten Country Values

```
Bottom Ten Countries by Average GDP Value (Highest GDP to Lowest):
+------+--------------+-----------------+---------------------+-----------+
|      |    Country   |    GDP Value    |    Density Value     | Pop Value |
+------+--------------+-----------------+---------------------+-----------+
|   9  |   Barbados   |  3059500000.0   |    615.4813953       | 264657.0  |
|  16  |    Burundi   | 1756760816.65   |    327.7615654       | 8416917.0 |
|  33  |    Eritrea   |  1109054005.0   |    22.83914736       | 2763140.0 |
|  44  |    Grenada   |  930761111.25   |    346.8794118       | 117939.0  |
| 102  |   Suriname   |   782800000.0   | 2.6335256410000003  | 410830.0  |
|  64  | Liechtenstein|  617891831.575  |    160.5984375       | 25695.75  |
|  46  |    Guyana    |   603200000.0   |    3.953141986       | 778176.0  |
|  29  |   Djibouti   |   395794538.6   |    20.80832614       | 482337.0  |
|  12  |    Bermuda   |   386300000.0   |    985.1851852       |  53200.0  |
| 109  |    Tonga     |   222100576.3   |    139.1597222       | 100195.0  |
+------+--------------+-----------------+---------------------+-----------+
```

Total Gold Medals by Country vs. Average Population per Country
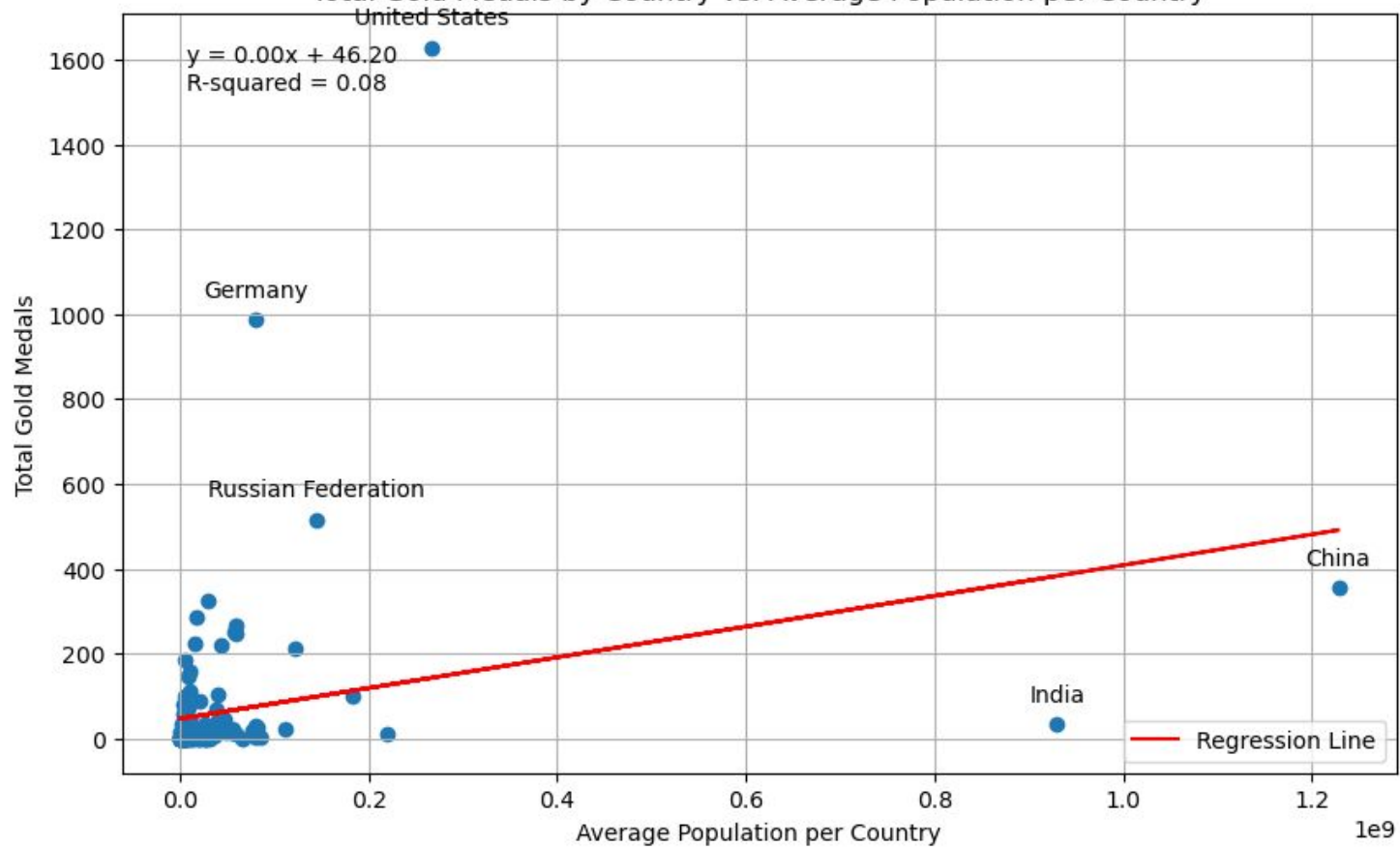
Total Gold Medals by Country vs. Average Population Density per Country
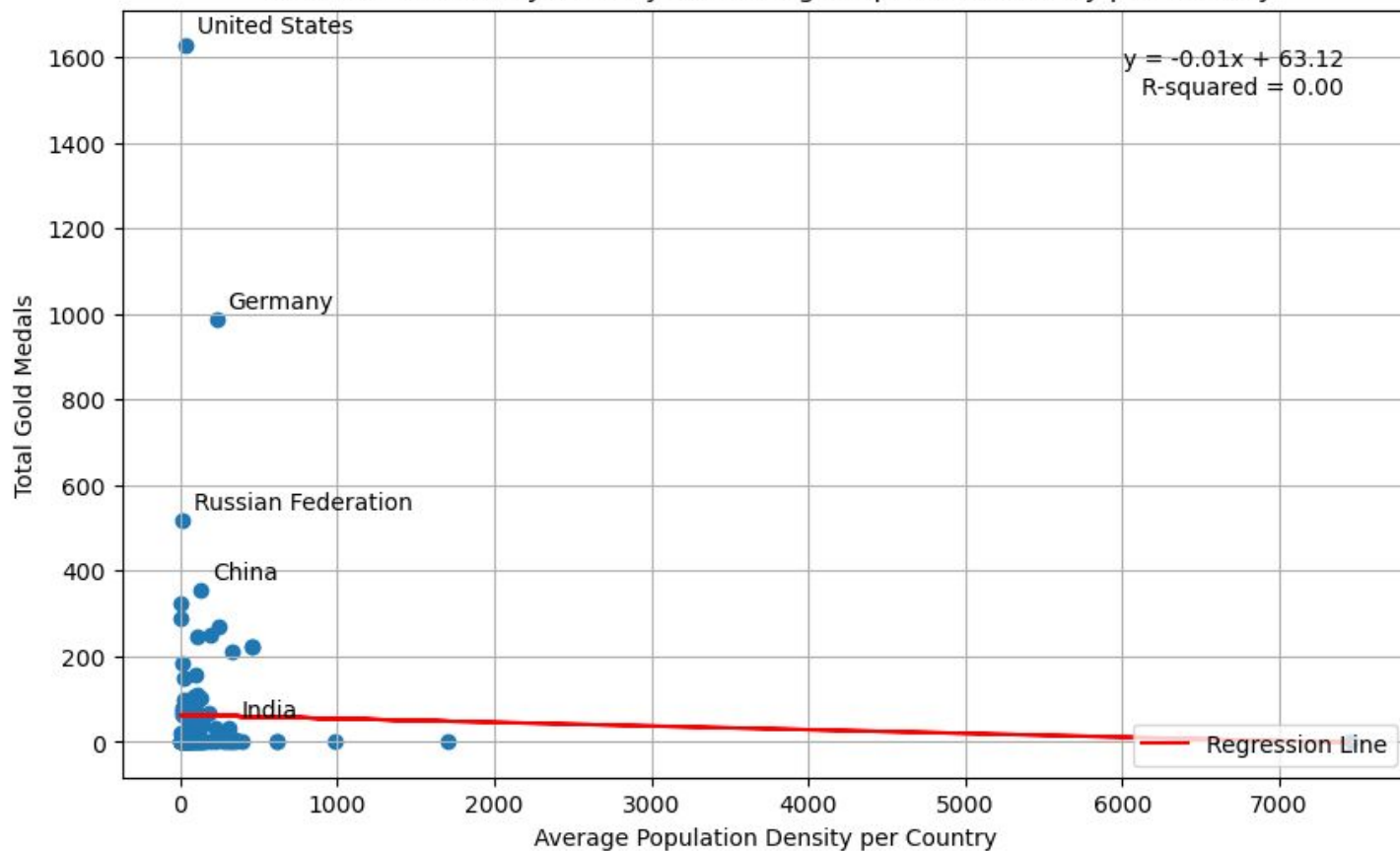
Website

https://josephnichols2000.github.io/project-3/olympic_analysis.html

GDP, Population and Density's Role

- Correlation coefficient between Total Medal Count and Average GDP: 0.50

- Correlation coefficient between Total Medal Count and Population: 0.21

- Correlation coefficient between Total Medal Count and Population Density: -0.02

Sources

- Country Coordinates - https://github.com/cristiroma/countries/tree/main/data
- Density - https://data.worldbank.org/indicator/EN.POP.DNST?view=map
- GDP - https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=map
- Olympic Data - https://www.kaggle.com/datasets/ishivamkedia/olympics-data?resource=download
- Population - https://data.worldbank.org/indicator/SP.POP.TOTL?view=map