

STAT 184 Final Project

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Introduction

The FIFA World Cup is the most prestigious and widely viewed football tournament globally. It has brought together countries across all continents to compete for the ultimate honor in football and arguably in all of sport. In this project, I intended to explore and analyze three key research questions by using data, scraped from Wikipedia:

1. Which countries have won the most FIFA World Cups, and how does their title count compare?
2. How do representations among different football confederations (continent-wise) compare in the FIFA World Cup Knockouts?
3. How has the number of goals scored by Golden Boot winners changed over time?

Background Information

To answer these three questions, I scraped three different datasets:

- A table of FIFA World Cup winners and other statistics.
- A table showing participation of each football confederation different stages of the tournament.
- A list of Golden Boot winners with their goal tallies and other statistics

Each dataset is cleaned and transformed, in order for me to explore and report on patterns in country success, confederation dominance, and top scorer performance over the decades.

Data Summary

Data Sources & Provenance

- **World Cup Winners Data:** Scraped from the “List of FIFA World Cup Finals” Wikipedia page ([link](#)). It includes counts of titles and appearances, etc.
- **Confederation Knockout Performance:** Scraped from the main FIFA World Cup Wikipedia page ([link](#)). Shows stage-wise success for each confederation.
- **Golden Boot Winners:** Scraped from the “List of FIFA World Cup top goalscorers” Wikipedia page ([link](#)).

These were scraped using rvest, cleaned using dplyr and tidyr, and visualized using ggplot. Column names were standardized and types were adjusted. Attributes of focus:

- RQ1: Team and Winners
- RQ2: Confederation, Stage, Count
- RQ3: Year, Player, Goals

Scraping and Cleaning Data

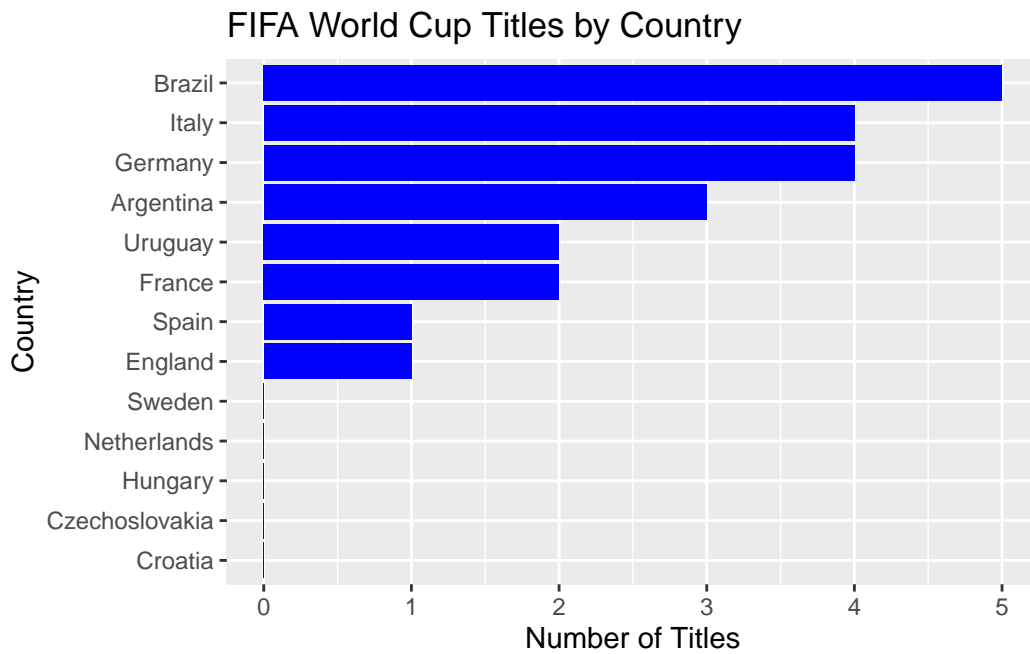
Exploratory Data Analysis

RQ1: Which countries have won the most FIFA World Cups?

Table 1: Top 10 FIFA World Cup Winning Countries

Country	Titles
Brazil	5

Country	Titles
Germany	4
Italy	4
Argentina	3
France	2
Uruguay	2
England	1
Spain	1
Netherlands	0
Hungary	0

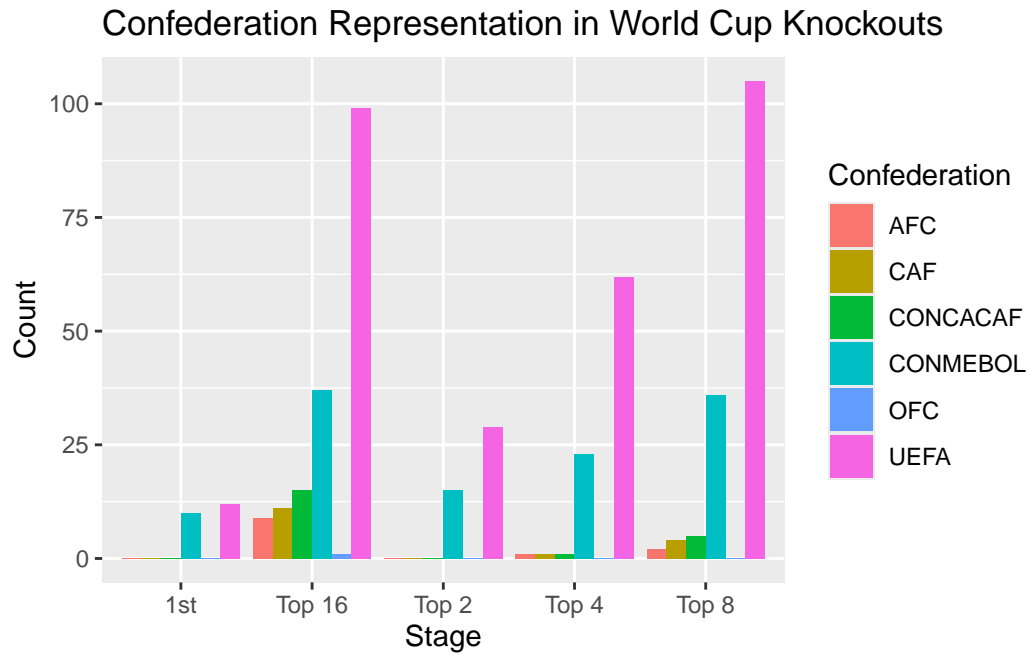


RQ2: Confederation Performance in Knockouts

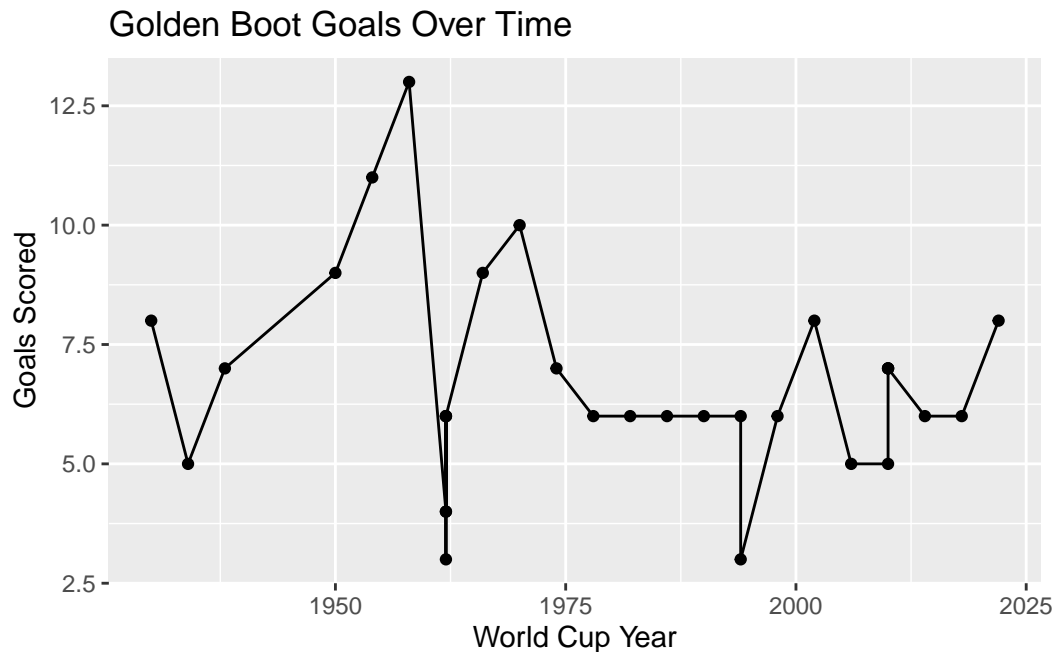
Table 2: Confederation-wise Knockout Performance

Confederation	1st	Top 16	Top 2	Top 4	Top 8
AFC	0	9	0	1	2
CAF	0	11	0	1	4
CONCACAF	0	15	0	1	5
CONMEBOL	10	37	15	23	36

Confederation	1st	Top 16	Top 2	Top 4	Top 8
OFC	0	1	0	0	0
UEFA	12	99	29	62	105



RQ3: How has the number of Golden Boot goals changed over time?



Conclusion

This analysis of FIFA World Cup data using historical statistics from Wikipedia revealed several key insights across teams, confederations, and top scorers:

- **RQ1 – Country Success:**
Brazil dominates the World Cup history and leads all nations with 5 FIFA World Cup titles, followed closely by Italy and Germany with 4 each. Argentina sits third with 3 titles. While France and Uruguay are also notable winners, several historically strong teams such as the Netherlands and Sweden have never won despite multiple deep runs.
- **RQ2 – Confederation Performance:**
UEFA (Europe) clearly dominates the knockout rounds, particularly the Top 8 and Top 4 stages, showing both breadth and depth of European talent. CONMEBOL (South America) also consistently reaches final stages but with fewer nations contributing. Other confederations like AFC, CAF, and CONCACAF have much lower representation, especially beyond the Round of 16.
- **RQ3 – Golden Boot Goal Trends:**
Golden Boot winners scored the most goals in the mid-20th century, with Just Fontaine netting 13 in 1958. In more recent years, the number of goals required to win the Golden

Boot has generally declined, with most winners scoring between 5–8 goals. This reflects a trend toward tighter, more tactical tournaments and greater defensive strength.

Overall, the data illustrates the enduring dominance of a few powerhouse countries and confederations, while also showing evolving patterns in individual goal-scoring performance over time.