Documentation for Code and Graph

Overview

This script reads data from a CSV file containing information about shootouts, processes the data to identify the top 10 countries with the most shootout wins, and visualizes the results using a bar chart. The graph is created using Plotly Express and displays the number of shootout wins for each of the top 10 countries.

Code Breakdown

1. Importing Libraries

```
import plotly.express as px

import pandas as pd

from collections import Counter
```

- **plotly.express**: A high-level interface for creating various types of plots. Here, it is used to create a bar chart.
- **pandas**: A library for data manipulation and analysis. It is used to read the CSV file and manage data in a DataFrame.
- **collections.Counter**: A container that helps count occurrences of elements in an iterable. It is used to count the number of shootout wins by each country.

2. Reading the Data

```
data = pd.read_csv("Data(file_format_CSV)/shootouts.csv")
```

- The CSV file shootouts.csv is read into a pandas DataFrame named data.

3. Counting Shootout Wins

```
shootout = data["winner"]

count_shootout = Counter(shootout)
```

- **shootout**: Extracts the column winner from the DataFrame, which presumably contains the names of the countries that won each shootout.
- **count_shootout**: Counts the occurrences of each country in the shootout series.

4. Identifying the Top 10 Countries

```
Top_10_count_shootout = count_shootout.most_common(10)
```

- Retrieves the 10 countries with the highest number of shootout wins along with their respective counts.

5. Preparing Data for Visualization

```
countries = [item[0] for item in Top_10_count_shootout]
```

```
no_of_goals = [item[1] for item in Top_10_count_shootout]


dft = {
   'countries' : countries,
   'no_of_goals' : no_of_goals
}


df = pd.DataFrame(dft)
```

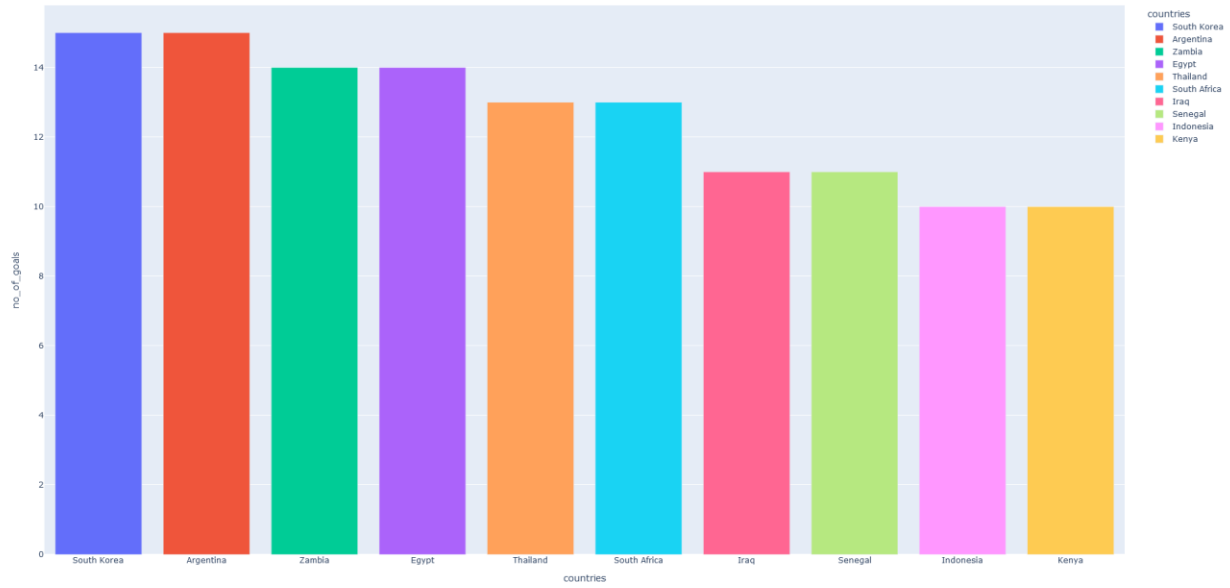
- **countries**: Extracts the country names from the top 10 list.
- **no_of_goals**: Extracts the corresponding number of shootout wins.
- **dft**: Creates a dictionary to organize the data for visualization.
- **df**: Converts the dictionary into a pandas DataFrame, making it easier to work with in the next step.

6. Creating the Bar Chart

```
fig = px.bar(df, x='countries', y='no_of_goals', color='countries')
fig.show()
```

- **px.bar**: Generates a bar chart where:
    - x='countries': Countries are placed on the x-axis.
    - y='no_of_goals': The number of shootout wins is placed on the y-axis.
    - color='countries': Each country is assigned a distinct color.
- **fig.show()**: Displays the generated bar chart.

Graph Interpretation



The bar chart shows the number of shootout wins for the top 10 countries. Each bar represents a country, with the height corresponding to the number of shootout wins. The colors help differentiate between the countries.

Conclusion

This script effectively reads and processes data from a CSV file, identifies the top countries based on shootout wins, and visualizes the information in a clear and colorful bar chart using Plotly Express. This visualization allows for an easy comparison of shootout performances across different countries.