Paris Olympics 2024 Medal Table analysis


```python
import pandas as pd

data = {
    'Country': ['China', 'France', 'Japan', 'Australia', 'Great
Britain', 'South Korea', 'United States', 'Italy', 'Canada',
'Germany'],
    'Gold': [9, 8, 8, 7, 6, 6, 5, 3, 2, 2],
    'Silver': [7, 10, 3, 6, 6, 3, 13, 6, 2, 2],
    'Bronze': [3, 8, 4, 3, 5, 3, 12, 4, 3, 2],
    'Total': [19, 26, 15, 16, 17, 12, 30, 13, 7, 6]
}

df = pd.DataFrame(data)

df
```

	Country	Gold	Silver	Bronze	Total
0	China	9	7	3	19
1	France	8	10	8	26
2	Japan	8	3	4	15
3	Australia	7	6	3	16
4	Great Britain	6	6	5	17
5	South Korea	6	3	3	12

```
6   United States        5          13          12          30
7            Italy       3           6           4          13
8           Canada       2           2           3           7
9          Germany       2           2           2           6
```

```python
import matplotlib.pyplot as plt
import seaborn as sns

plt.figure(figsize=(10, 6))
ax = sns.barplot(x='Country', y='Gold', data=df, color='gold')
plt.title('Gold Medals by Country')
plt.xlabel('Country')
plt.ylabel('Number of Gold Medals')
plt.xticks(rotation=45)

for p in ax.patches:
    height = p.get_height()
    ax.annotate(f'{height}', (p.get_x() + p.get_width() / 2., height), ha='center', va='bottom',
                xytext=(0, 3), textcoords='offset points', fontsize=9, color='black')

plt.tight_layout()
plt.show()
```
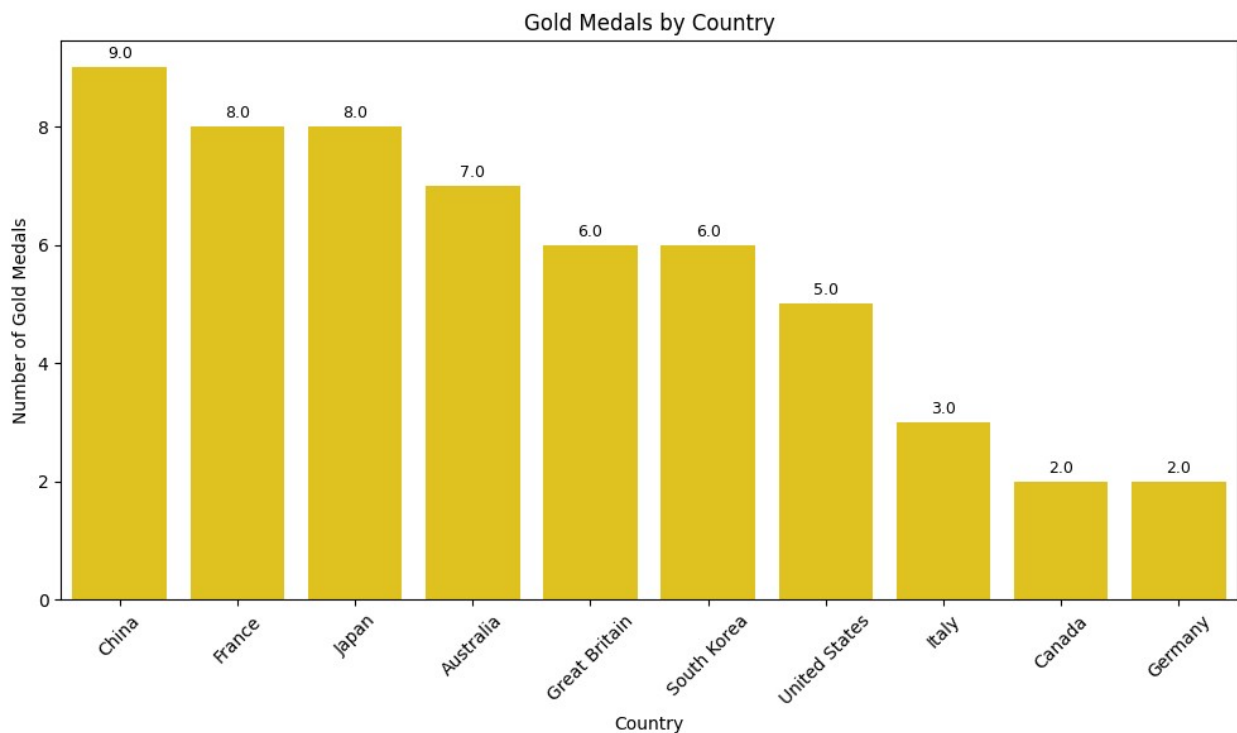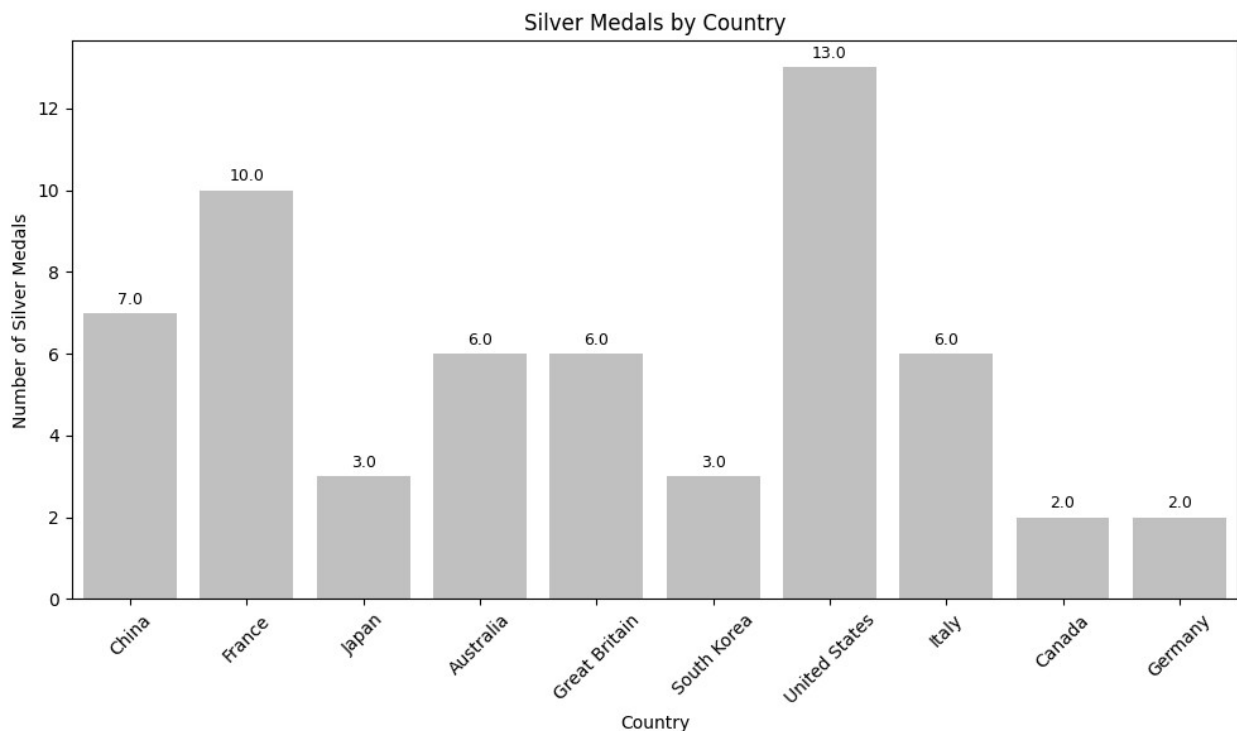


```python
plt.figure(figsize=(10, 6))
ax = sns.barplot(x='Country', y='Silver', data=df, color='silver')
```

```
plt.title('Silver Medals by Country')
plt.xlabel('Country')
plt.ylabel('Number of Silver Medals')
plt.xticks(rotation=45)

for p in ax.patches:
    height = p.get_height()
    ax.annotate(f'{height}', (p.get_x() + p.get_width() / 2., height),
ha='center', va='bottom',
                xytext=(0, 3), textcoords='offset points', fontsize=9,
color='black')

plt.tight_layout()
plt.show()
```



```
plt.figure(figsize=(10, 6))
ax = sns.barplot(x='Country', y='Bronze', data=df, color='#cd7f32')
plt.title('Bronze Medals by Country')
plt.xlabel('Country')
plt.ylabel('Number of Bronze Medals')
plt.xticks(rotation=45)

for p in ax.patches:
    height = p.get_height()
    ax.annotate(f'{height}', (p.get_x() + p.get_width() / 2., height),
ha='center', va='bottom',
```
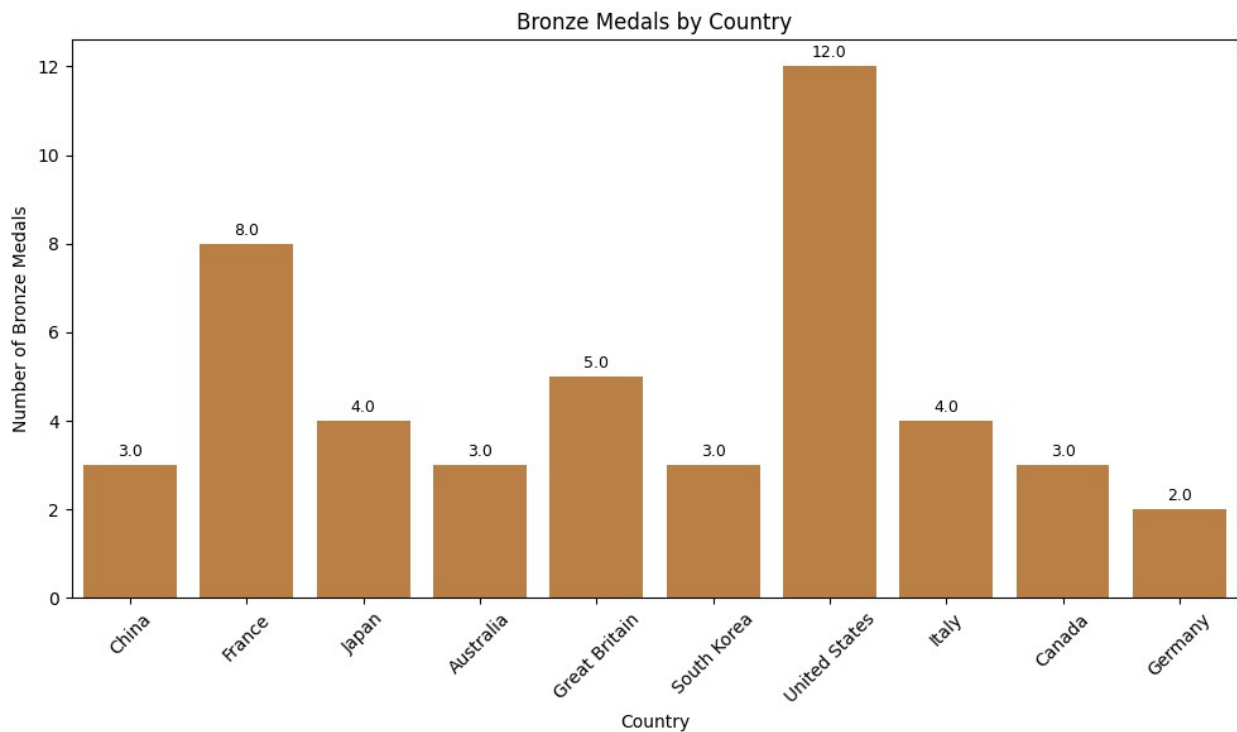
```
                    xytext=(0, 3), textcoords='offset points', fontsize=9,
color='black')

plt.tight_layout()
plt.show()
```
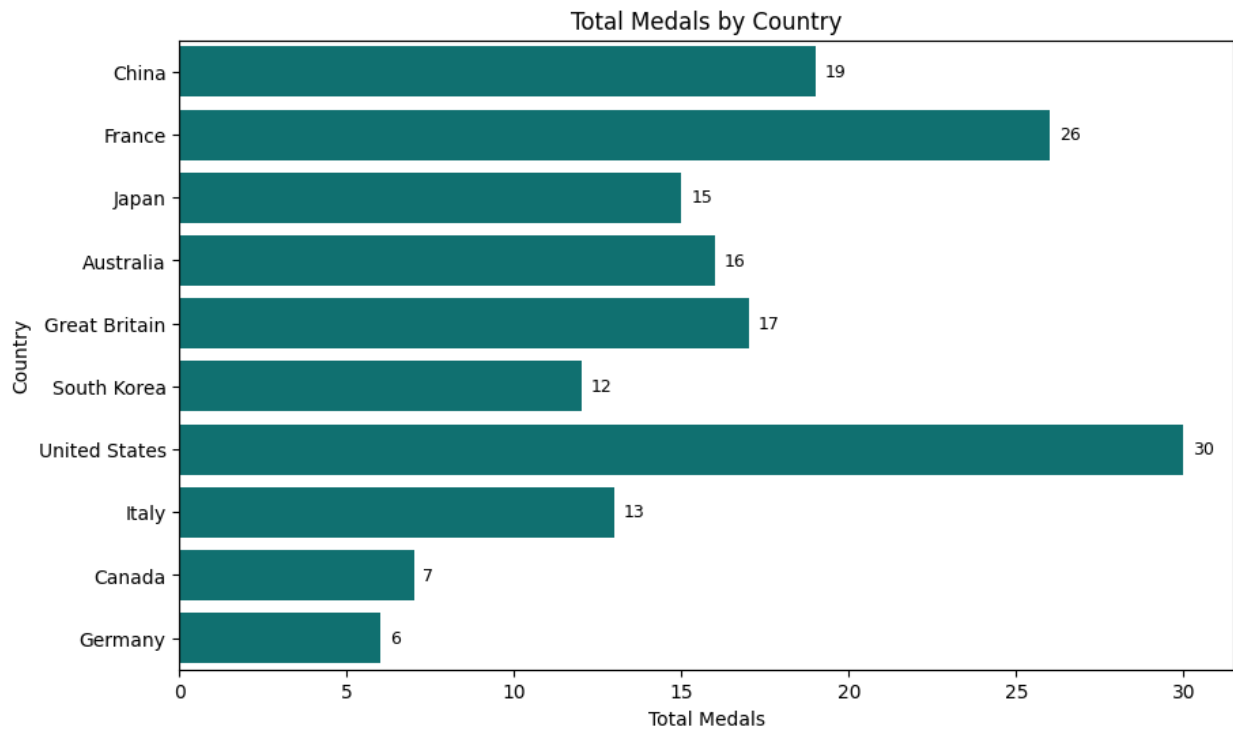

Bronze Medals by Country

```
plt.figure(figsize=(10, 6))
ax = sns.barplot(x='Total', y='Country', data=df, color='teal')
plt.title('Total Medals by Country')
plt.xlabel('Total Medals')
plt.ylabel('Country')

for p in ax.patches:
    width = p.get_width()
    ax.annotate(f'{int(width)}', (width, p.get_y() + p.get_height() /
2.), ha='left', va='center',
                xytext=(5, 0), textcoords='offset points', fontsize=9,
color='black')

plt.show()
```
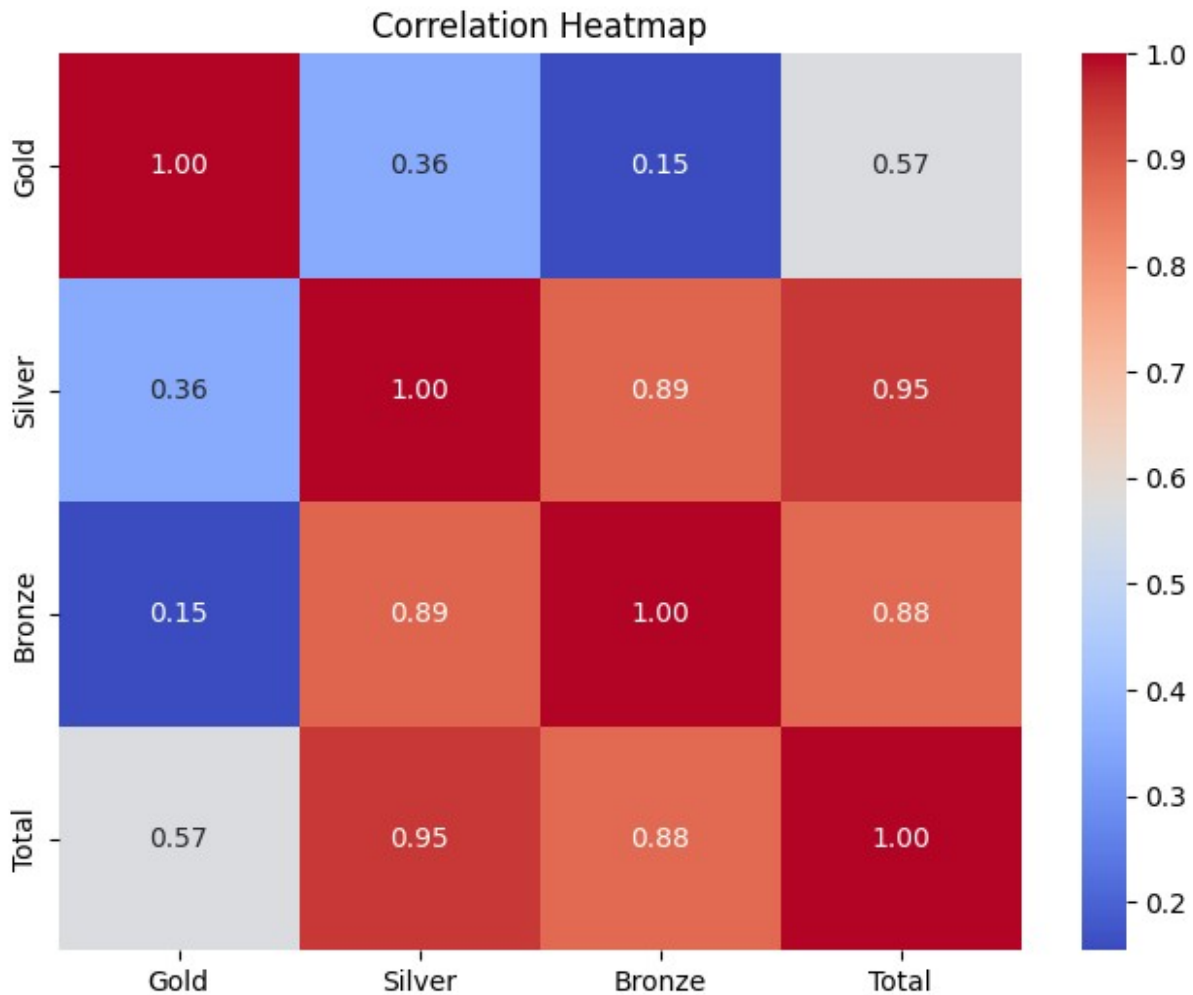
Total Medals by Country

```
plt.figure(figsize=(8, 6))
ax = sns.heatmap(df[['Gold', 'Silver', 'Bronze', 'Total']].corr(),
annot=True, cmap='coolwarm', fmt='.2f')
plt.title('Correlation Heatmap')
plt.show()
```
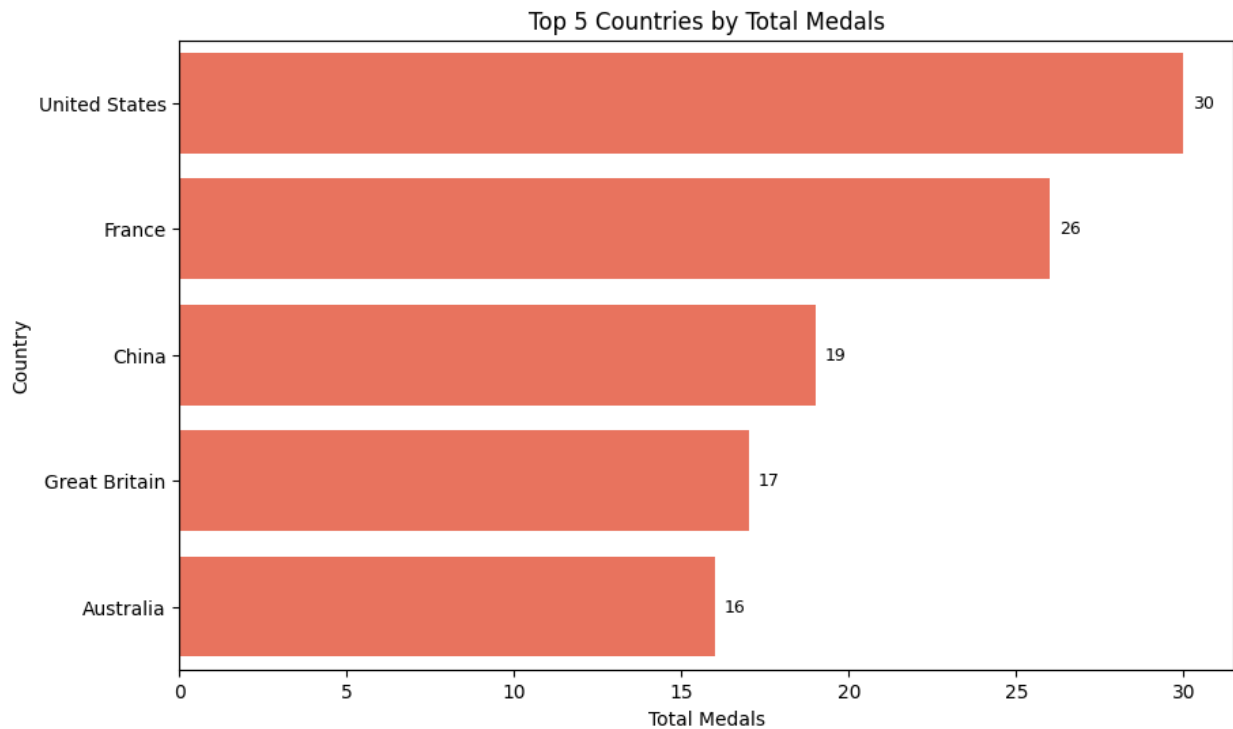
Correlation Heatmap

```python
top_5 = df.nlargest(5, 'Total')
plt.figure(figsize=(10, 6))
ax = sns.barplot(x='Total', y='Country', data=top_5, color='#FF6347')
plt.title('Top 5 Countries by Total Medals')
plt.xlabel('Total Medals')
plt.ylabel('Country')

for p in ax.patches:
    width = p.get_width()
    ax.annotate(f'{int(width)}', (width, p.get_y() + p.get_height() /
2.), ha='left', va='center',
                xytext=(5, 0), textcoords='offset points', fontsize=9,
color='black')

plt.show()
```

Top 5 Countries by Total Medals


```
bottom_5 = df.nsmallest(5, 'Total')
plt.figure(figsize=(10, 6))
ax = sns.barplot(x='Total', y='Country', data=bottom_5,
color='#FF6347')
plt.title('Bottom 5 Countries by Total Medals')
plt.xlabel('Total Medals')
plt.ylabel('Country')

for p in ax.patches:
    width = p.get_width()
    ax.annotate(f'{int(width)}', (width, p.get_y() + p.get_height() /
2.), ha='left', va='center',
                xytext=(5, 0), textcoords='offset points', fontsize=9,
color='black')

plt.show()
```

## Bottom 5 Countries by Total Medals
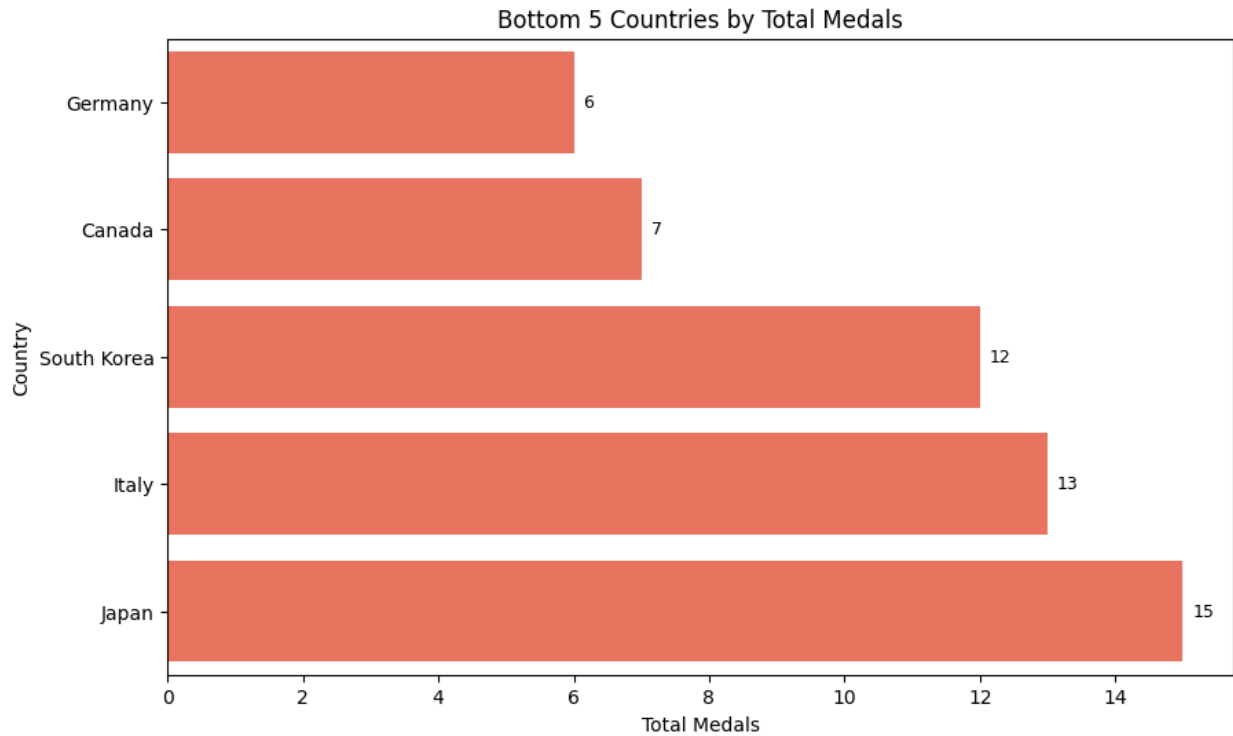

```
total_gold = df['Gold'].sum()
total_silver = df['Silver'].sum()
total_bronze = df['Bronze'].sum()

medals = ['Gold', 'Silver', 'Bronze']
sizes = [total_gold, total_silver, total_bronze]
colors = ['#FFD700', '#C0C0C0', '#cd7f32']

plt.figure(figsize=(8, 8))
plt.pie(sizes, labels=medals, colors=colors, autopct='%1.1f%%',
startangle=140)
plt.title('Overall Medal Distribution')
plt.show()
```

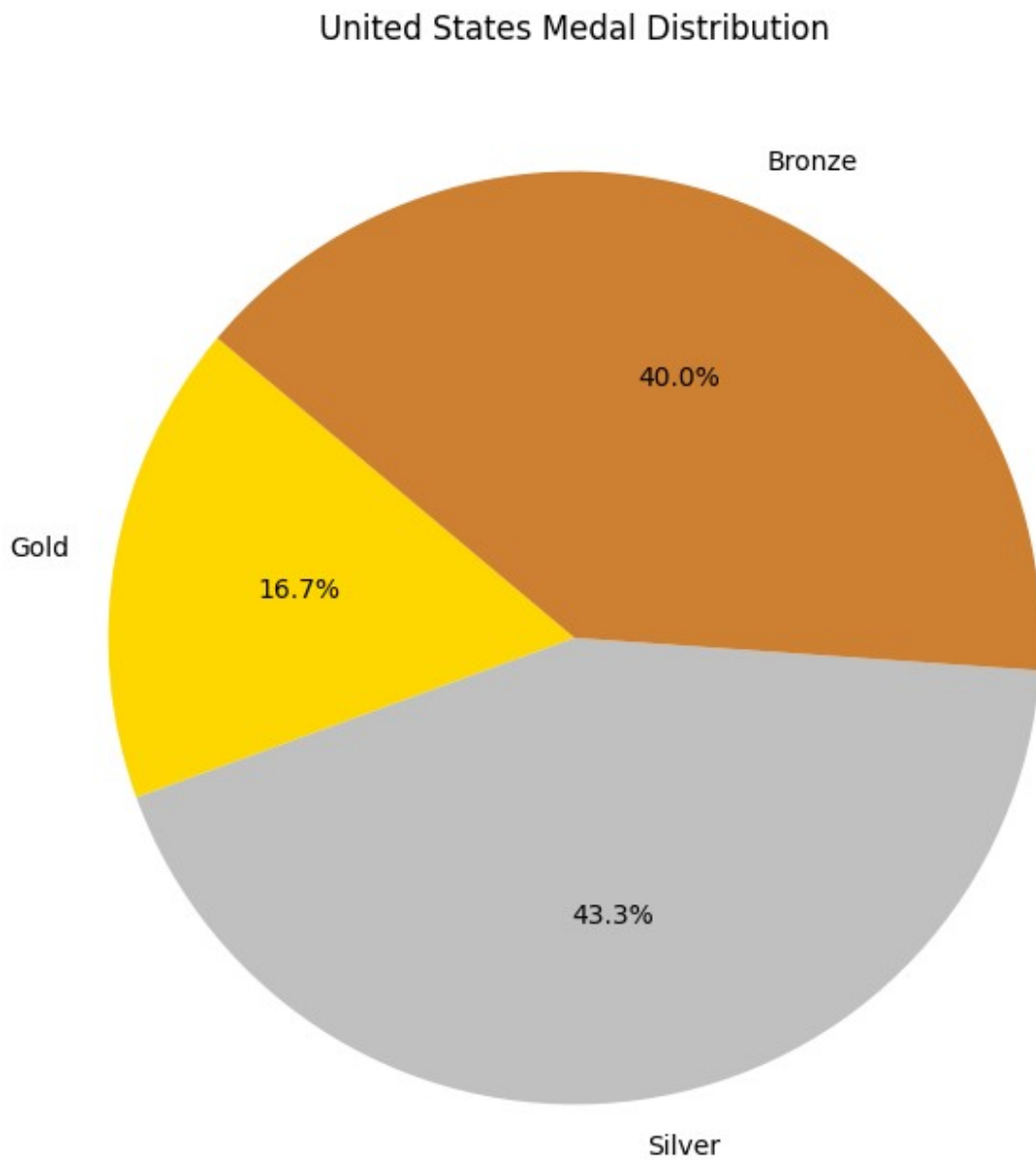## Overall Medal Distribution
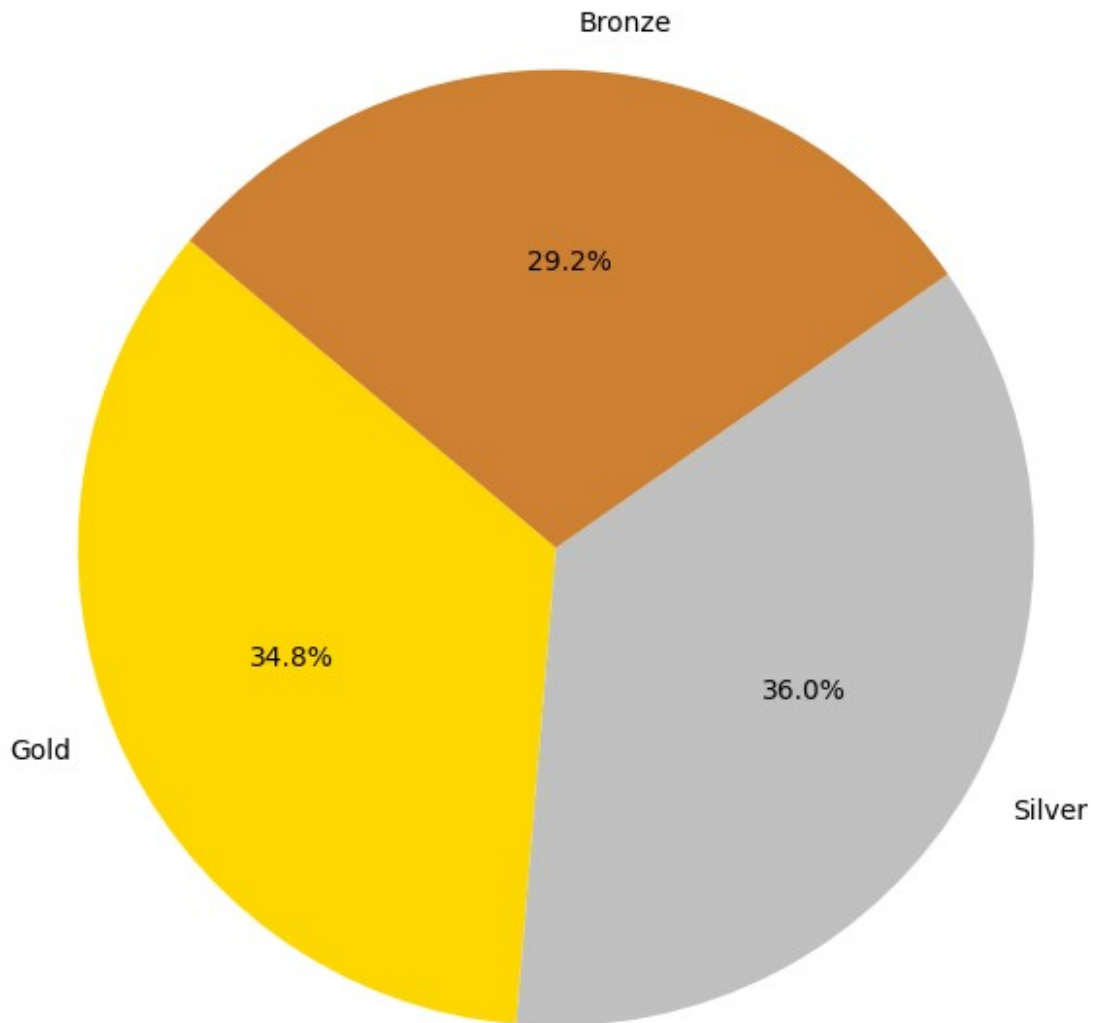

```
country = 'United States'
country_data = df[df['Country'] == country].iloc[0]

labels = ['Gold', 'Silver', 'Bronze']
sizes = [country_data['Gold'], country_data['Silver'],
country_data['Bronze']]
colors = ['#FFD700', '#C0C0C0', '#cd7f32']

plt.figure(figsize=(8, 8))
plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%',
startangle=140)
```

```
plt.title(f'{country} Medal Distribution')
plt.show()
```

United States Medal Distribution

Thanks !!!