

```
import seaborn as sns
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```
!gdown 1VcLR7TKzJlEyNJIztd3LL14JU1SMfL5t
```

Downloading...
 From: <https://drive.google.com/uc?id=1VcLR7TKzJlEyNJIztd3LL14JU1SMfL5t>
 To: /content/mckinsey.csv
 100% 83.8k/83.8k [00:00<00:00, 3.20MB/s]

```
data = pd.read_csv('mckinsey.csv')
data.head(6)
```

	country	year	population	continent	life_exp	gdp_cap
0	Afghanistan	1952	8425333	Asia	28.801	779.445314
1	Afghanistan	1957	9240934	Asia	30.332	820.853030
2	Afghanistan	1962	10267083	Asia	31.997	853.100710
3	Afghanistan	1967	11537966	Asia	34.020	836.197138
4	Afghanistan	1972	13079460	Asia	36.088	739.981106
5	Afghanistan	1977	14880372	Asia	38.438	786.113360

Next steps: [Generate code with data](#) [View recommended plots](#) [New interactive sheet](#)

```
data_df=pd.DataFrame(data)
```

Initial Analysis

```
data_df.columns
```

```
Index(['country', 'year', 'population', 'continent', 'life_exp', 'gdp_cap'], dtype='object')
```

We have the below mentioned column Country Year Population Continent Life Exp Gdp Capita

```
data_df.dtypes
```

	0
country	object
year	int64
population	int64
continent	object
life_exp	float64
gdp_cap	float64

```
dtype: object
```

The Values present in the columns are as of below mentioned types Country => object Year=> Int Population => Int Continent => Object Life_exp => Float GDP_CAP => Float

```
data_df.isna().value_counts()
```

	count
country year population continent life_exp gdp_cap	
False False False False False False	1704

```
dtype: int64
```

There is no null values

```
data_df.duplicated().value_counts()
```

```
count
False    1704
```

```
dtype: int64
```

Since everything is false there are no duplicates present in the data set.

```
data_df['continent'].unique()
```

```
array(['Asia', 'Europe', 'Africa', 'Americas', 'Oceania'], dtype=object)
```

we have 5 different continents in the data

1) Analysis with respect to the Continent

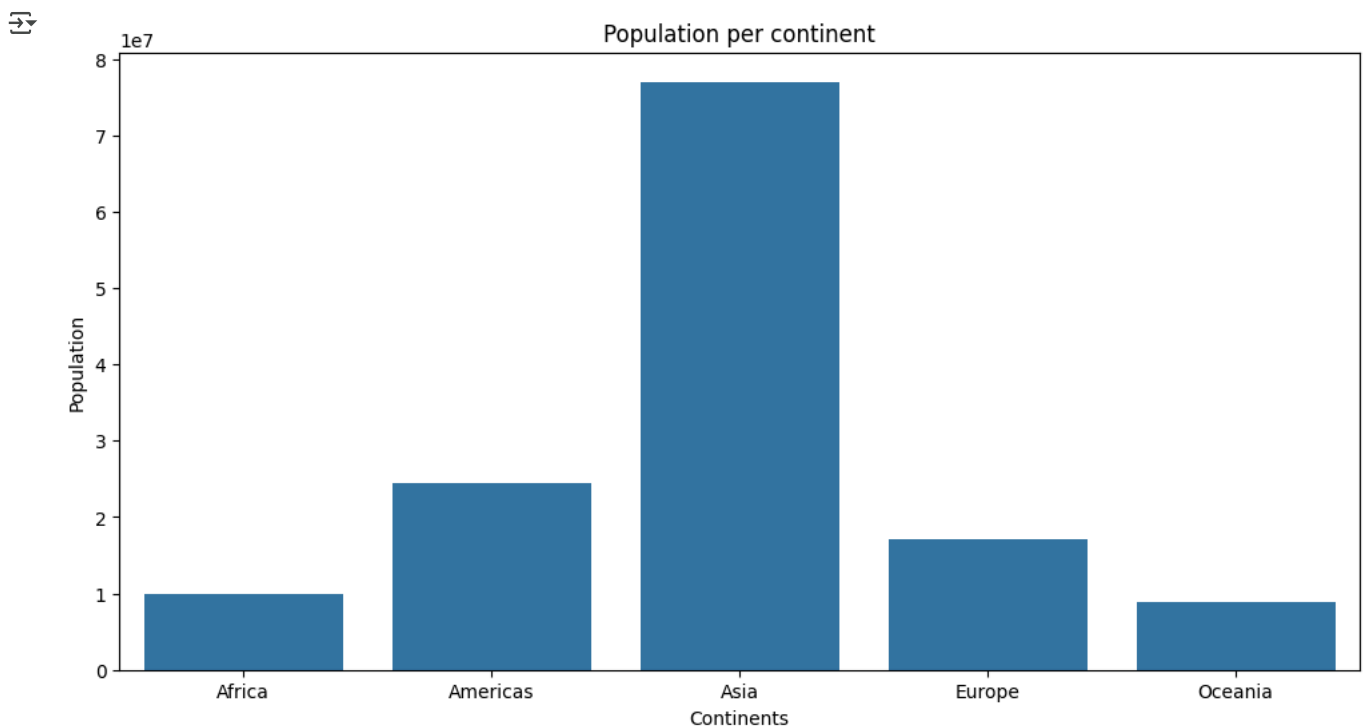
```
continentdata_df = data_df.groupby('continent')[['life_exp', 'gdp_cap', 'population']].agg({'life_exp': 'mean', 'gdp_cap': 'mean', 'popu': 'mean'})
continentdata_df
```

```
continent
Africa    48.865330    2193.754578    9.916003e+06
Americas  64.658737    7136.110356    2.450479e+07
Asia      60.064903    7902.150428    7.703872e+07
Europe    71.903686    14469.475533    1.716976e+07
Oceania   74.326208    18621.609223    8.874672e+06
```

Next steps: [Generate code with continentdata_df](#) [View recommended plots](#) [New interactive sheet](#)

Population in each continent

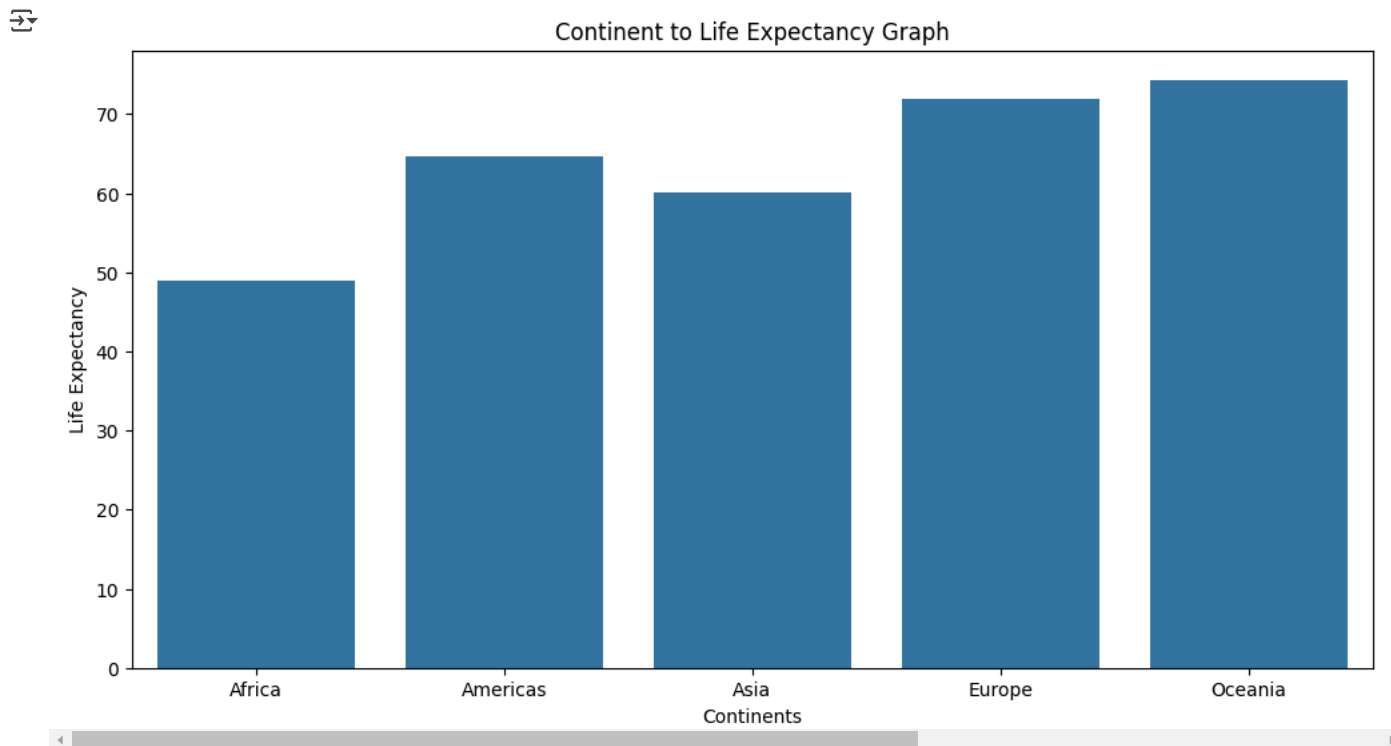
```
plt.figure(figsize=(12,6))
sns.barplot(data=continentdata_df,x='continent', y='population')
plt.xlabel("Continents")
plt.ylabel("Population")
plt.title("Population per continent")
plt.show()
```



Asia has the highest average population which is about 77 million, thirty-eight thousand, seven hundred twenty.

Continent to Life Expectancy analysis

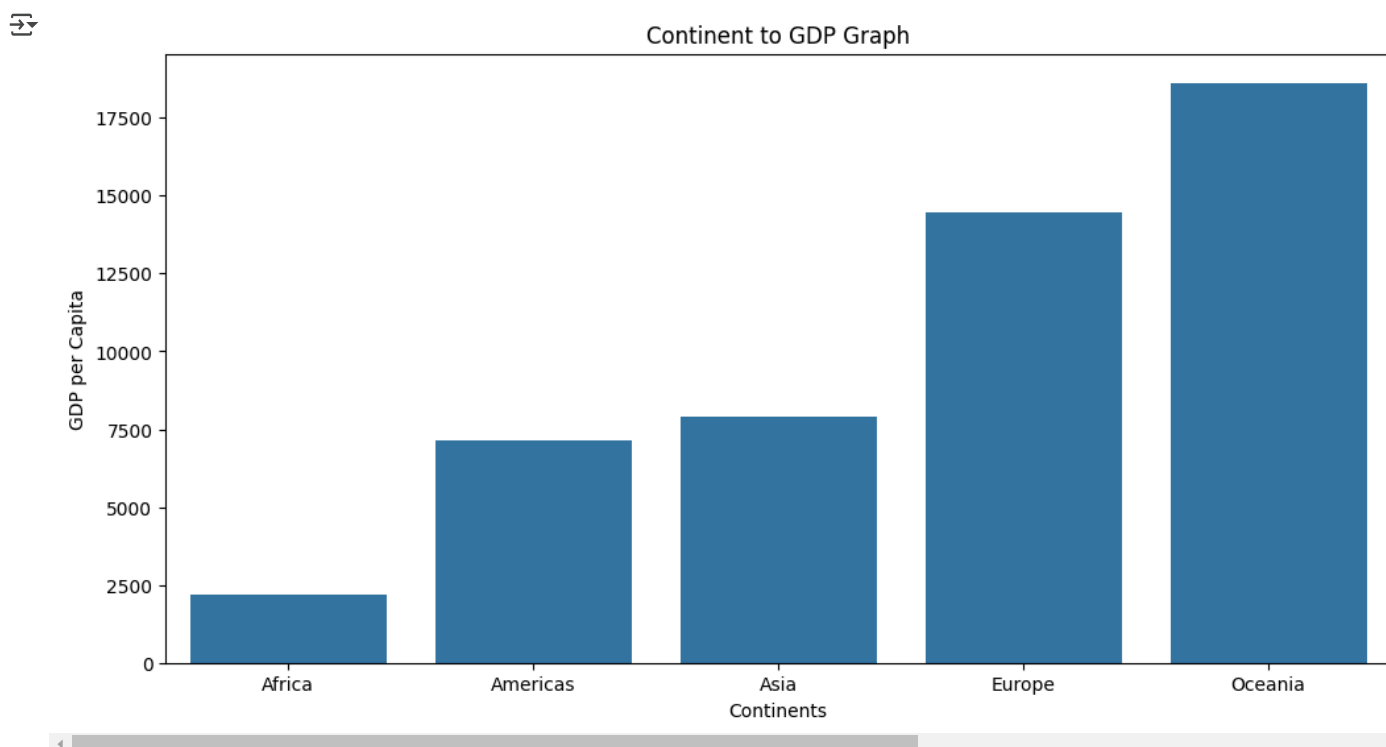
```
plt.figure(figsize=(12,6))
sns.barplot(data=continentdata_df,x='continent', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("Life Expectancy")
plt.title("Continent to Life Expectancy Graph")
plt.show()
```



We can say that the Highest Average Life expectancy is in Oceania which is about 74.326208

Max GDP breakdown in each continent

```
plt.figure(figsize=(12,6))
sns.barplot(data=continentdata_df,x='continent', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Continent to GDP Graph")
plt.show()
```



Highest Average GDP is in Oceania which is about 18621

2) Analysis done on each continent

Analysis on Asia

```
countryasia_df = data_df.loc[data_df['continent']=='Asia']
countryasia_df.head(5)
```

	country	year	population	continent	life_exp	gdp_cap
0	Afghanistan	1952	8425333	Asia	28.801	779.445314
1	Afghanistan	1957	9240934	Asia	30.332	820.853030
2	Afghanistan	1962	10267083	Asia	31.997	853.100710
3	Afghanistan	1967	11537966	Asia	34.020	836.197138
4	Afghanistan	1972	13079460	Asia	36.088	739.981106

Next steps: [Generate code with countryasia_df](#) [View recommended plots](#) [New interactive sheet](#)

```
countryasia_df['country'].unique()
```

```
array(['Afghanistan', 'Bahrain', 'Bangladesh', 'Cambodia', 'China',
      'Hong Kong, China', 'India', 'Indonesia', 'Iran', 'Iraq', 'Israel',
      'Japan', 'Jordan', 'Korea, Dem. Rep.', 'Korea, Rep.', 'Kuwait',
      'Lebanon', 'Malaysia', 'Mongolia', 'Myanmar', 'Nepal', 'Oman',
      'Pakistan', 'Philippines', 'Saudi Arabia', 'Singapore',
      'Sri Lanka', 'Syria', 'Taiwan', 'Thailand', 'Vietnam',
      'West Bank and Gaza', 'Yemen, Rep.'], dtype=object)
```

We have these many country in Asia

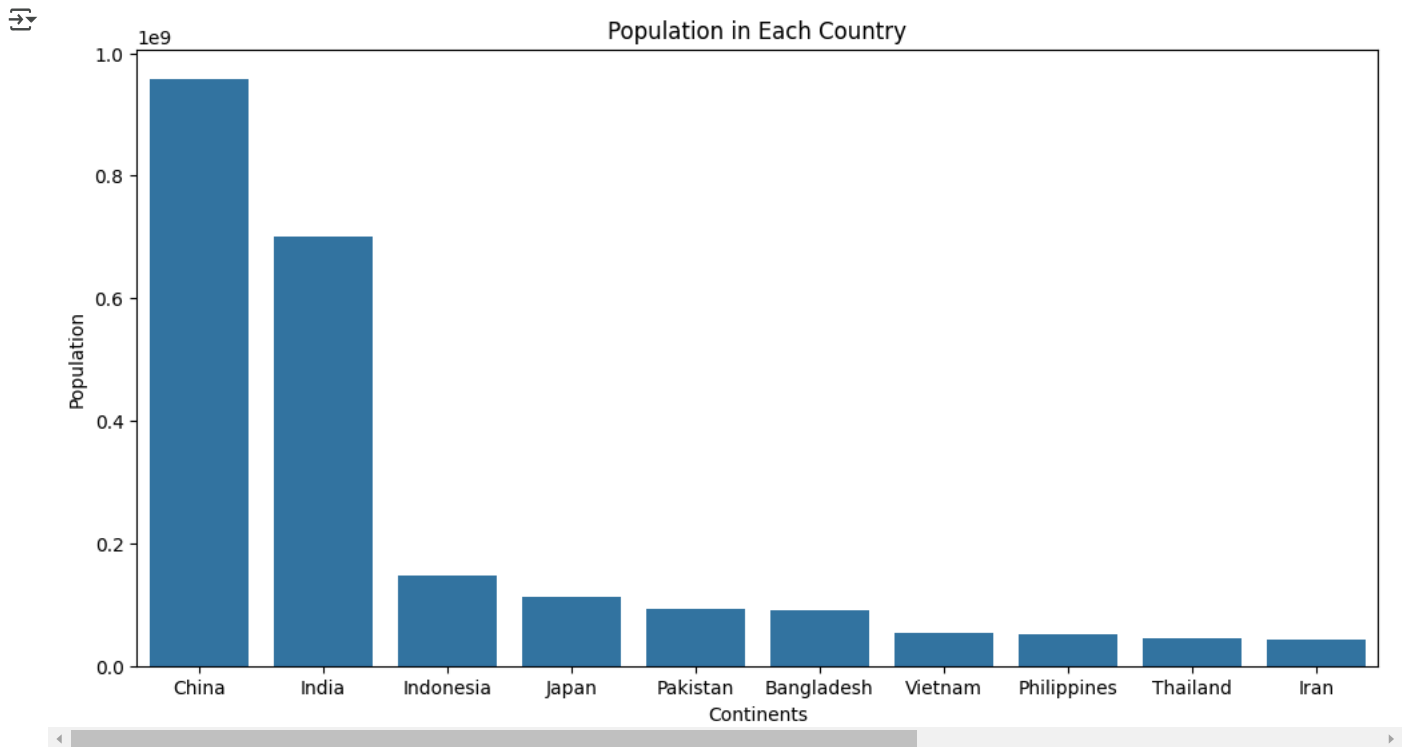
```
countryasiaa_df=countryasia_df.groupby('country')[['life_exp', 'gdp_cap', 'population']].aggregate({'life_exp': 'mean', 'gdp_cap': 'mean'})
countryasiaa_df.head(5)
```

	life_exp	gdp_cap	population
country			
Afghanistan	37.478833	802.674598	1.582372e+07
Bahrain	65.605667	18077.663945	3.739132e+05
Bangladesh	49.834083	817.558818	9.075540e+07
Cambodia	47.902750	675.367824	8.510431e+06
China	61.785140	1488.307694	9.581601e+08

Next steps: [Generate code with countryasiaa_df](#) [View recommended plots](#) [New interactive sheet](#)

Top 10 Highest Populated country in Asia

```
t10pofcasiaa_df = countryasiaa_df.sort_values(by='population', ascending=False).head(10)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcasiaa_df,x='country', y='population')
plt.xlabel("Continents")
plt.ylabel("Population")
plt.title("Population in Each Country")
plt.show()
```



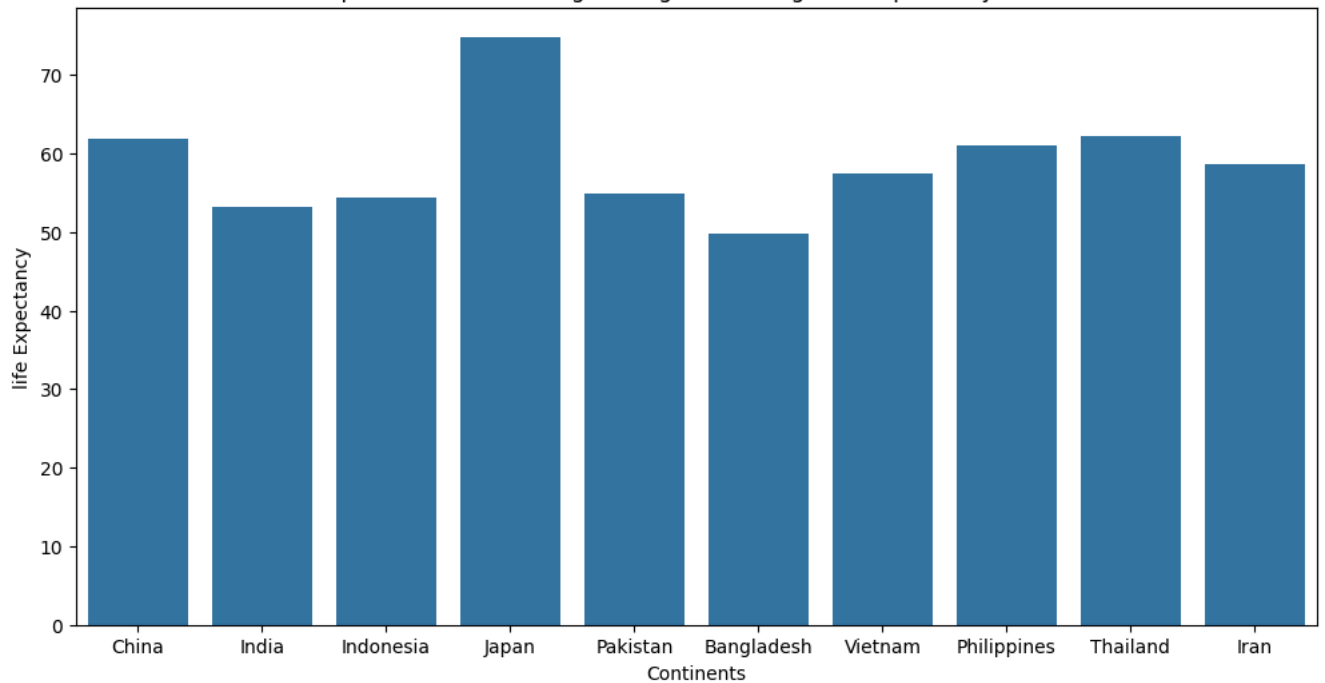
These are the countries with top population.

Highest Life Expectancy in Asia by country wise top 10

```
t10poflifeexpasia_df = countryasiaa_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpasia_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcasiaa_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Top 10 Countries having the Highest Average life expectancy in Asia")
plt.show()
```

country	life_exp	gdp_cap	population
Japan	74.826917	17750.869984	1.117588e+08
Israel	73.645833	14160.936434	3.845611e+06
Hong Kong, China	73.492833	16228.700865	4.792259e+06
Singapore	71.220250	17425.382267	2.667817e+06
Taiwan	70.336667	10224.807181	1.687472e+07
Kuwait	68.922333	65332.910472	1.206496e+06
Sri Lanka	66.526083	1854.731119	1.454583e+07
Lebanon	65.865667	7269.216241	2.781846e+06
Bahrain	65.605667	18077.663945	3.739132e+05
Korea, Rep.	65.001000	8217.318485	3.649939e+07

Top 10 Countries having the Highest Average life expectancy in Asia



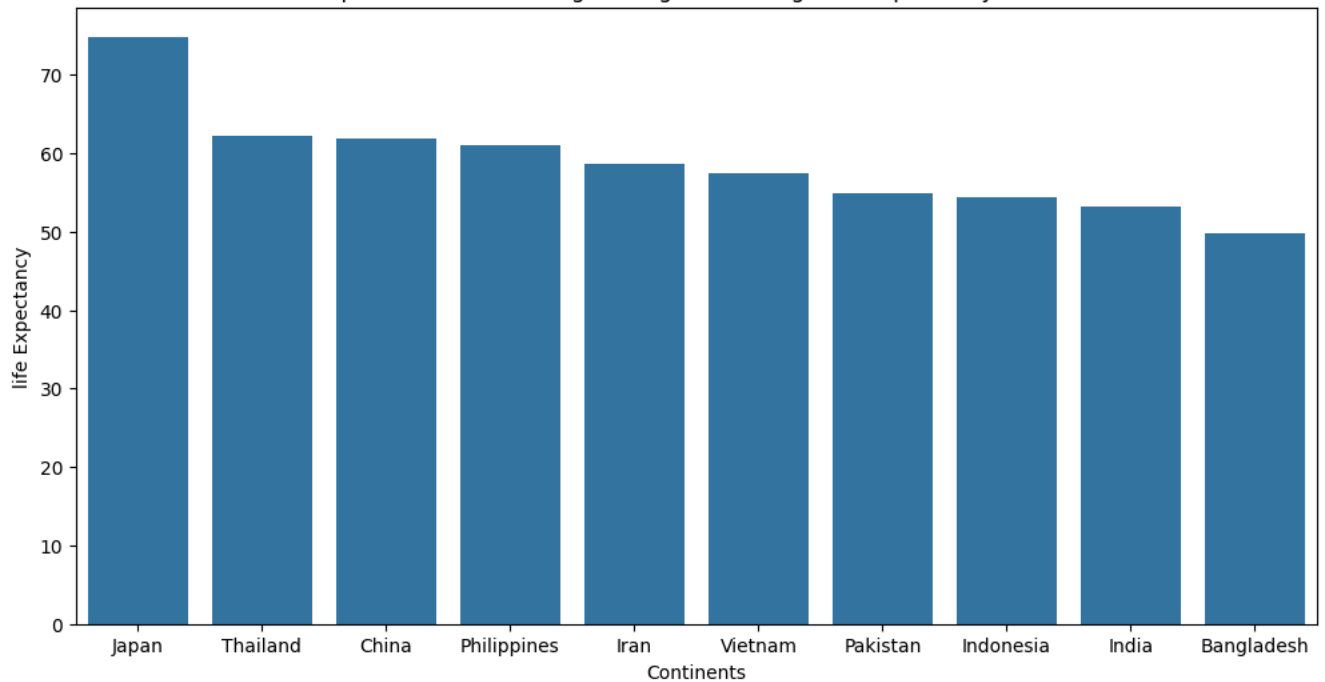
We can see that Japan has the highest life expectancy

Highest life expectancy according the top 10 countries with highest population

```
t10pofclifeexpasia_df = t10pofcasiaa_df.sort_values(by='life_exp', ascending=False).head(10)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofclifeexpasia_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Top 10 Countries having the Highest Average life expectancy in Asia")
plt.show()
```



Top 10 Countries having the Highest Average life expectancy in Asia



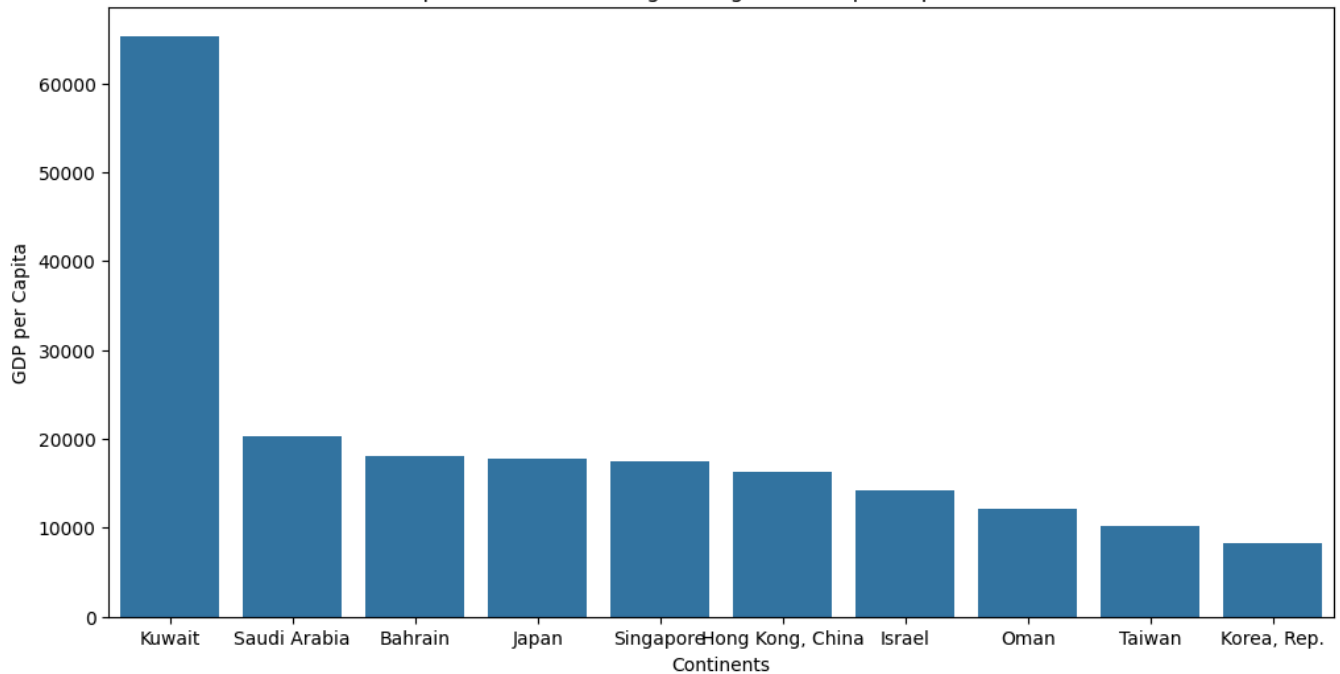
We can say that japan has the highest life expectancy even though the population is very less where as china stands at third position in terms of life expectancy eventhough it has the highest no of population

Highest GDP in Asia by country wise top 10

```
t10pofgdpofasia_df = countryasiaa_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofgdpofasia_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofgdpofasia_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 countires having the highest GDP per capita in Asia")
plt.show()
```

country	life_exp	gdp_cap	population
Kuwait	68.922333	65332.910472	1.206496e+06
Saudi Arabia	58.678750	20261.743635	1.247837e+07
Bahrain	65.605667	18077.663945	3.739132e+05
Japan	74.826917	17750.869984	1.117588e+08
Singapore	71.220250	17425.382267	2.667817e+06
Hong Kong, China	73.492833	16228.700865	4.792259e+06
Israel	73.645833	14160.936434	3.845611e+06
Oman	58.442667	12138.562227	1.438205e+06
Taiwan	70.336667	10224.807181	1.687472e+07
Korea, Rep.	65.001000	8217.318485	3.649939e+07

Top 10 countires having the highest GDP per capita in Asia



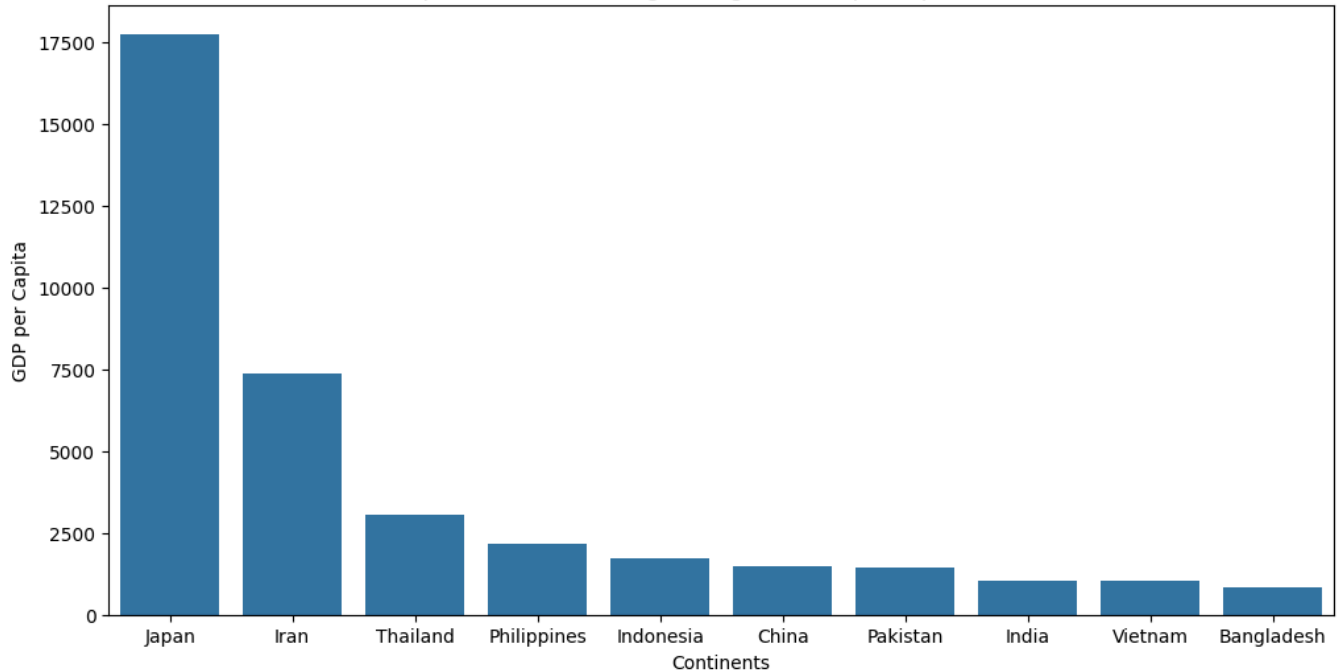
Kuwait has the highest GDP which is about 113523

Highest Average GDP according the top 10 countries with highest population

```
t10pofcgdpofasia_df = t10pofcasiaa_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofcgdpofasia_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcgdpofasia_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 countires having the highest GDP per capita in Asia")
plt.show()
```


country	life_exp	gdp_cap	population
Japan	74.826917	17750.869984	1.117588e+08
Iran	58.636583	7376.582905	4.230171e+07
Thailand	62.200250	3045.966474	4.496163e+07
Philippines	60.967250	2174.771130	5.263663e+07
Indonesia	54.335750	1741.365360	1.483228e+08
China	61.785140	1488.307694	9.581601e+08
Pakistan	54.882250	1439.270689	9.368339e+07
India	53.166083	1057.296307	7.011307e+08
Vietnam	57.479500	1017.712615	5.456857e+07
Bangladesh	49.834083	817.558818	9.075540e+07

Top 10 countires having the highest GDP per capita in Asia



In the countries with highest population we can see that japan has the highest GDP that is about 31656

Analysis on America

```
countryamerica_df = data_df.loc[data_df['continent']=='Americas']
countryamerica_df.head(5)
```

	country	year	population	continent	life_exp	gdp_cap
48	Argentina	1952	17876956	Americas	62.485	5911.315053
49	Argentina	1957	19610538	Americas	64.399	6856.856212
50	Argentina	1962	21283783	Americas	65.142	7133.166023
51	Argentina	1967	22934225	Americas	65.634	8052.953021
52	Argentina	1972	24779799	Americas	67.065	9443.038526

Next steps: [Generate code with countryamerica_df](#) [View recommended plots](#) [New interactive sheet](#)

```
countryamerica_df['country'].unique()
```

```
array(['Argentina', 'Bolivia', 'Brazil', 'Canada', 'Chile', 'Colombia',
      'Costa Rica', 'Cuba', 'Dominican Republic', 'Ecuador',
      'El Salvador', 'Guatemala', 'Haiti', 'Honduras', 'Jamaica',
      'Mexico', 'Nicaragua', 'Panama', 'Paraguay', 'Peru', 'Puerto Rico',
      'Trinidad and Tobago', 'United States', 'Uruguay', 'Venezuela'],
      dtype=object)
```

we have these many countries in America

```
countryamericaa_df=countryamerica_df.groupby('country')[['life_exp', 'gdp_cap', 'population']].aggregate({'life_exp': 'mean', 'gdp_cap': 'mean'})
countryamericaa_df.head(5)
```

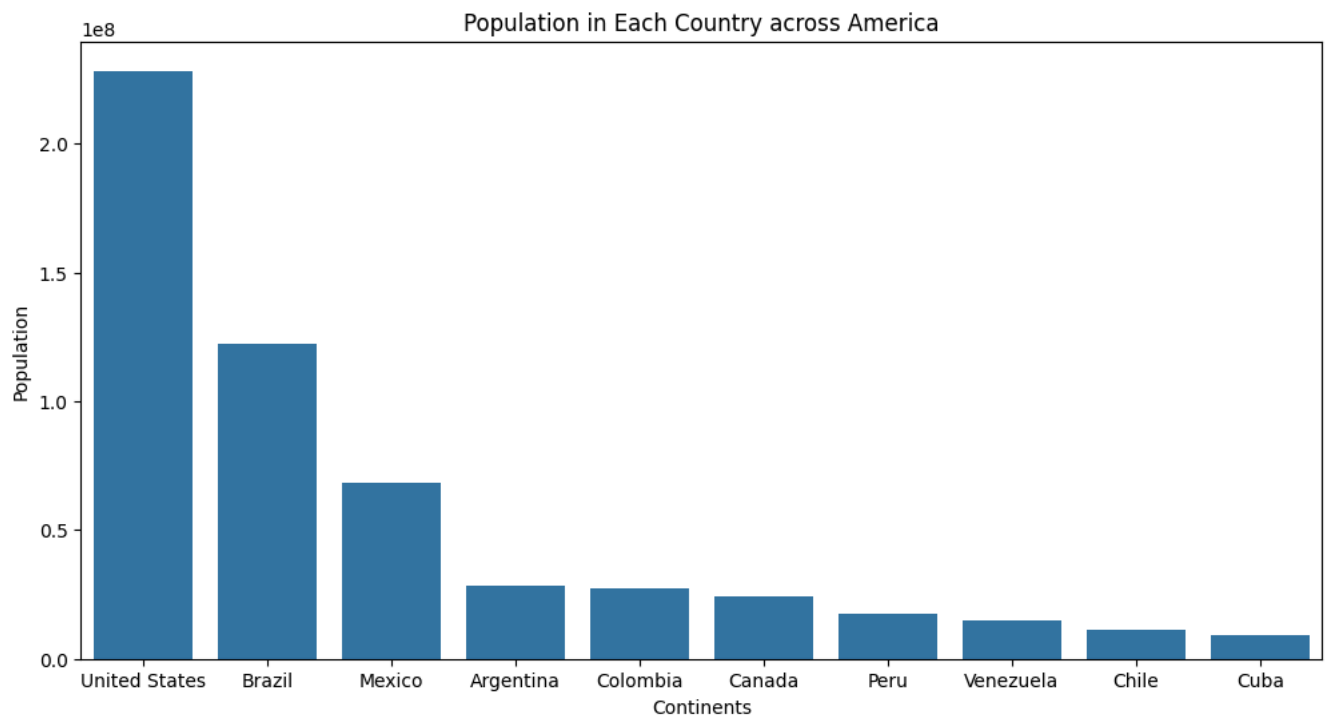
	life_exp	gdp_cap	population
country			
Argentina	69.060417	8955.553783	2.860224e+07
Bolivia	52.504583	2961.228754	5.610395e+06
Brazil	62.239500	5829.316653	1.223121e+08
Canada	74.902750	22410.746340	2.446297e+07
Chile	67.430917	6703.289147	1.120573e+07

Next steps: [Generate code with countryamericaa_df](#) [View recommended plots](#) [New interactive sheet](#)

Top 10 Highest Populated country in America

```
t10pofcamerica_df = countryamericaa_df.sort_values(by='population', ascending=False).head(10)
print(t10pofcamerica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcamerica_df,x='country', y='population')
plt.xlabel("Continents")
plt.ylabel("Population")
plt.title("Population in Each Country across America")
plt.show()
```

	life_exp	gdp_cap	population
country			
United States	73.478500	26261.151347	2.282112e+08
Brazil	62.239500	5829.316653	1.223121e+08
Mexico	65.408833	7724.112675	6.841430e+07
Argentina	69.060417	8955.553783	2.860224e+07
Colombia	63.897750	4195.342920	2.725610e+07
Canada	74.902750	22410.746340	2.446297e+07
Peru	58.859333	5613.844087	1.755909e+07
Venezuela	66.580667	10088.516252	1.512980e+07
Chile	67.430917	6703.289147	1.120573e+07
Cuba	71.045083	6283.258678	9.232576e+06



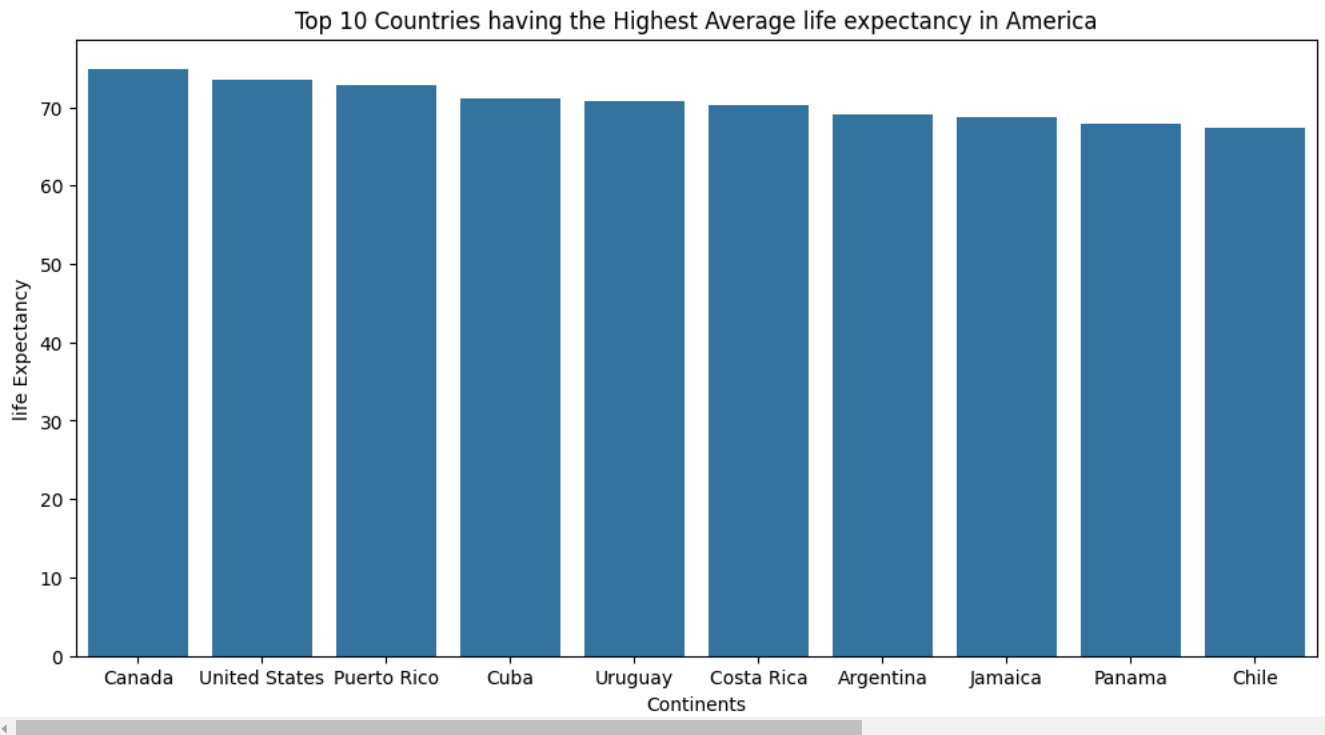
United states has the highest population which is about 228 million, two hundred eleven thousand, two hundred.

Highest Average life expectancy in America Top 10

```
t10poflifeexpamerica_df = countryamericaa_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpamerica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpamerica_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
```

```
plt.title("Top 10 Countries having the Highest Average life expectancy in America")
plt.show()
```

country	life_exp	gdp_cap	population
Canada	74.902750	22410.746340	2.446297e+07
United States	73.478500	26261.151347	2.282112e+08
Puerto Rico	72.739333	10863.164303	3.115178e+06
Cuba	71.045083	6283.258678	9.232576e+06
Uruguay	70.781583	7100.133176	2.912487e+06
Costa Rica	70.181417	5448.610779	2.400008e+06
Argentina	69.060417	8955.553783	2.860224e+07
Jamaica	68.749333	6197.645405	2.135123e+06
Panama	67.801750	5754.827172	1.985290e+06
Chile	67.430917	6703.289147	1.120573e+07



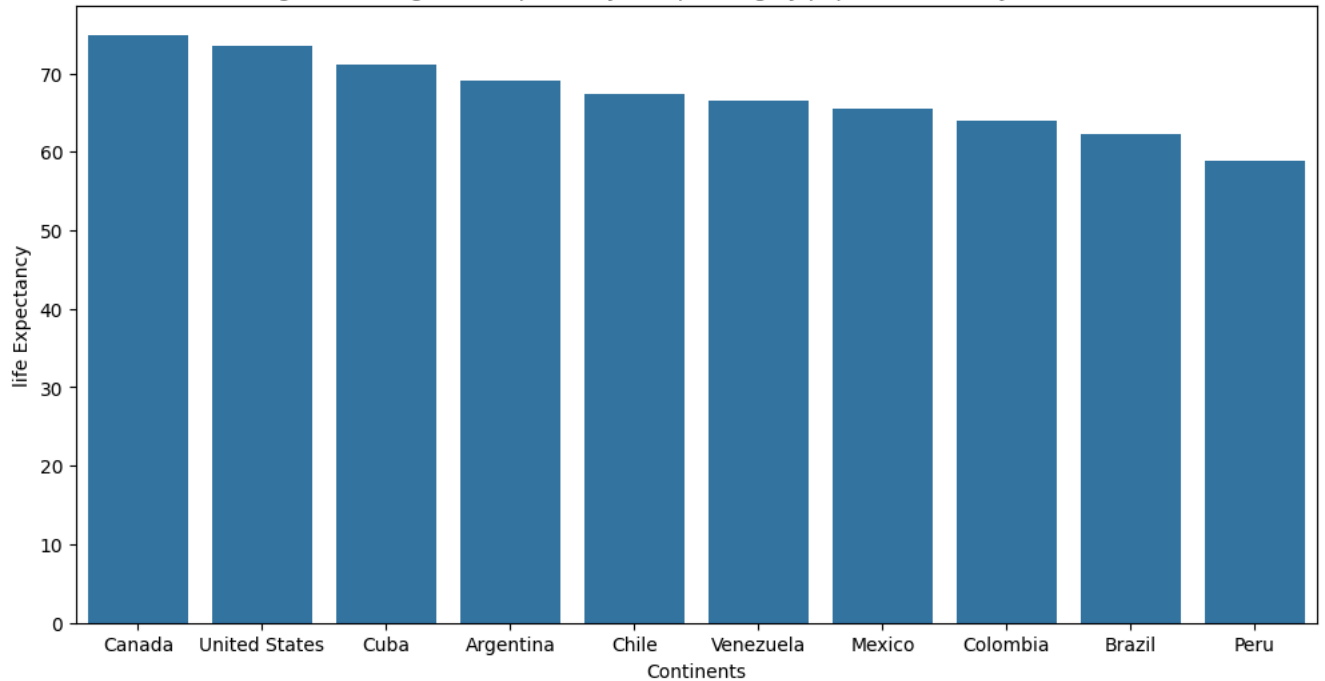
We can see that Canada has the highest life expectancy which is about 74.90

Highest Average life expectancy in Top 10 Highest populated country in America

```
t10poflifeexpamerica_df = t10pofcamerica_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpamerica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpamerica_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Highest Average Life expectancy in Top 10 highly populated country in America")
plt.show()
```

country	life_exp	gdp_cap	population
Canada	74.902750	22410.746340	2.446297e+07
United States	73.478500	26261.151347	2.282112e+08
Cuba	71.045083	6283.258678	9.232576e+06
Argentina	69.060417	8955.553783	2.860224e+07
Chile	67.430917	6703.289147	1.120573e+07
Venezuela	66.580667	10088.516252	1.512980e+07
Mexico	65.408833	7724.112675	6.841430e+07
Colombia	63.897750	4195.342920	2.725610e+07
Brazil	62.239500	5829.316653	1.223121e+08
Peru	58.859333	5613.844087	1.755909e+07

Highest Average Life expectancy in Top 10 highly populated country in America



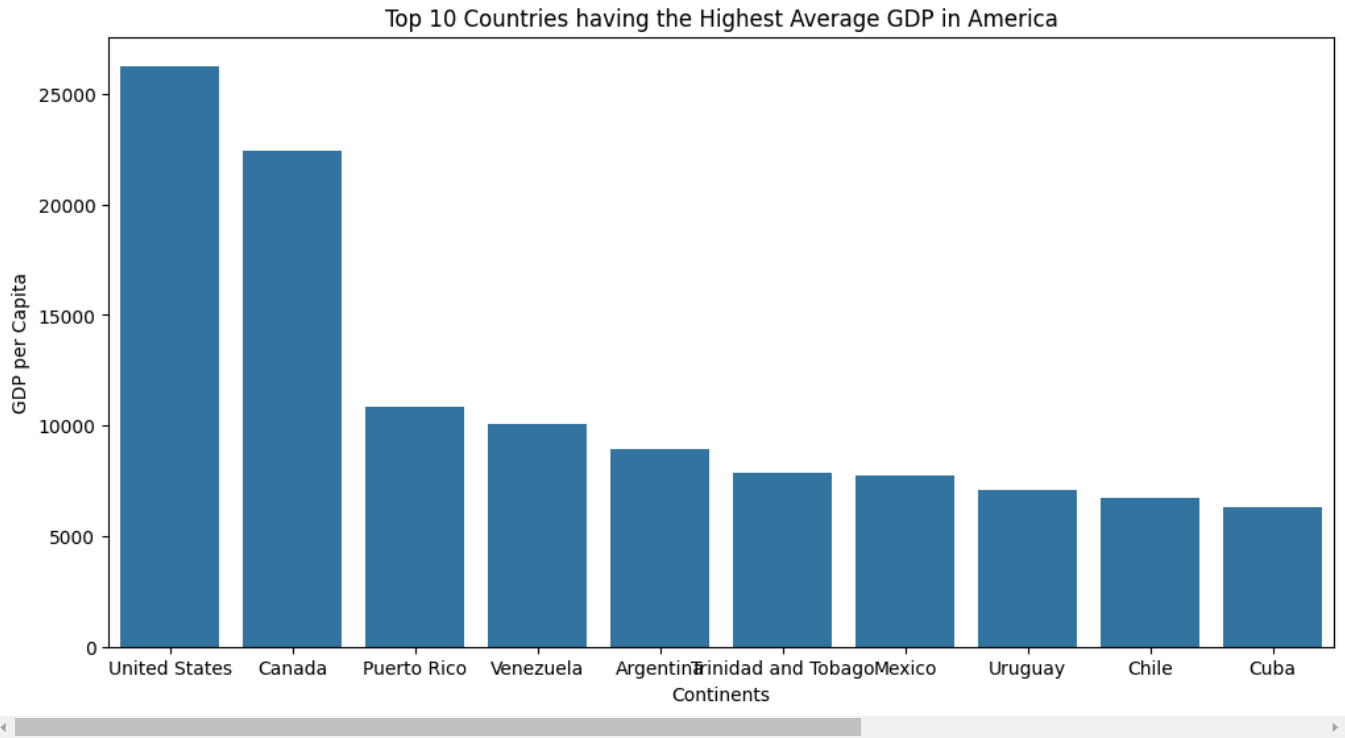
Highest GDP in America Top 10

```

t10pofgdpamerica_df = countryamericaa_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofgdpamerica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofgdpamerica_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in America")
plt.show()

```

country	life_exp	gdp_cap	population
United States	73.478500	26261.151347	2.282112e+08
Canada	74.902750	22410.746340	2.446297e+07
Puerto Rico	72.739333	10863.164303	3.115178e+06
Venezuela	66.580667	10088.516252	1.512980e+07
Argentina	69.060417	8955.553783	2.860224e+07
Trinidad and Tobago	66.828000	7866.871946	1.006470e+06
Mexico	65.408833	7724.112675	6.841430e+07
Uruguay	70.781583	7100.133176	2.912487e+06
Chile	67.430917	6703.289147	1.120573e+07
Cuba	71.045083	6283.258678	9.232576e+06



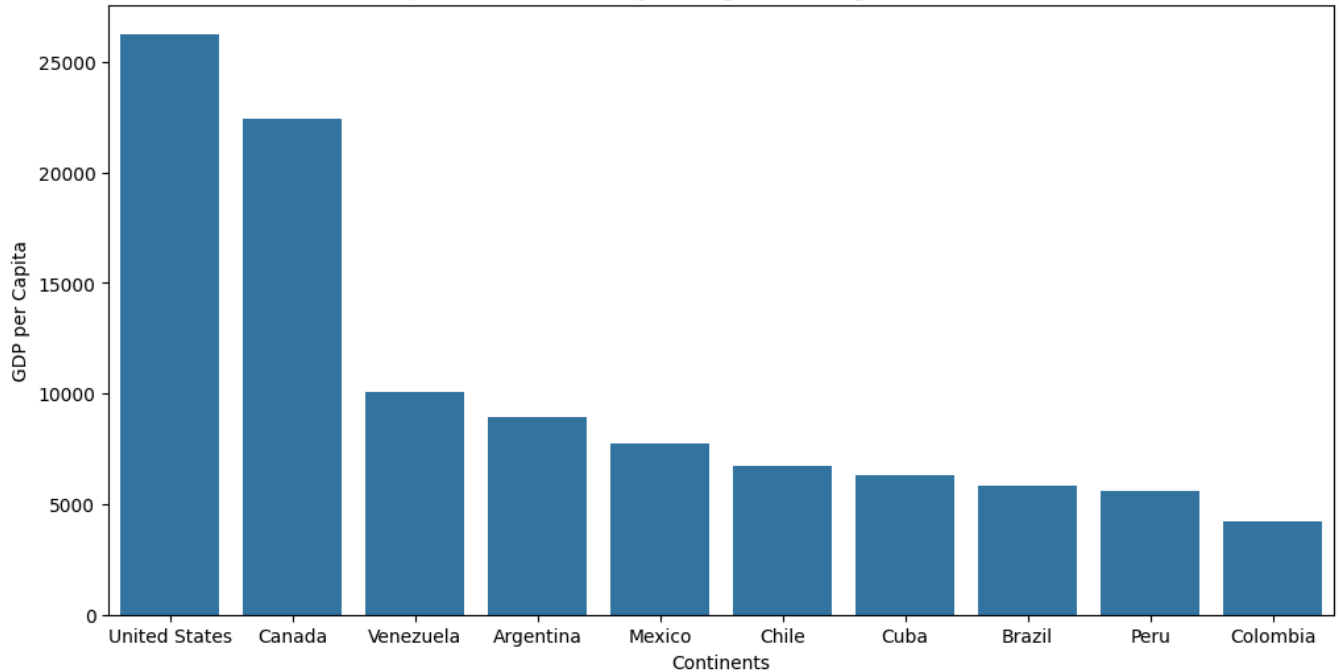
United States has the highest average GDP per capita that is 26261.1

Highest Average GDP in Highly populated Country in America

```
t10pofcgdpamerica_df = t10pofcamerica_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofcgdpamerica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcgdpamerica_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in America")
plt.show()
```

country	life_exp	gdp_cap	population
United States	73.478500	26261.151347	2.282112e+08
Canada	74.902750	22410.746340	2.446297e+07
Venezuela	66.580667	10088.516252	1.512980e+07
Argentina	69.060417	8955.553783	2.860224e+07
Mexico	65.408833	7724.112675	6.841430e+07
Chile	67.430917	6703.289147	1.120573e+07
Cuba	71.045083	6283.258678	9.232576e+06
Brazil	62.239500	5829.316653	1.223121e+08
Peru	58.859333	5613.844087	1.755909e+07
Colombia	63.897750	4195.342920	2.725610e+07

Top 10 Countries having the Highest Average GDP in America



Analysis on Europe

```
countryeurope_df = data_df.loc[data_df['continent']=='Europe']
countryeurope_df.head(5)
```

	country	year	population	continent	life_exp	gdp_cap
12	Albania	1952	1282697	Europe	55.23	1601.056136
13	Albania	1957	1476505	Europe	59.28	1942.284244
14	Albania	1962	1728137	Europe	64.82	2312.888958
15	Albania	1967	1984060	Europe	66.22	2760.196931
16	Albania	1972	2263554	Europe	67.69	3313.422188

Next steps:

[Generate code with countryeurope_df](#)[View recommended plots](#)[New interactive sheet](#)

```
countryeurope_df['country'].unique()
```

```
array(['Albania', 'Austria', 'Belgium', 'Bosnia and Herzegovina',
      'Bulgaria', 'Croatia', 'Czech Republic', 'Denmark', 'Finland',
      'France', 'Germany', 'Greece', 'Hungary', 'Iceland', 'Ireland',
      'Italy', 'Montenegro', 'Netherlands', 'Norway', 'Poland',
      'Portugal', 'Romania', 'Serbia', 'Slovak Republic', 'Slovenia',
      'Spain', 'Sweden', 'Switzerland', 'Turkey', 'United Kingdom'],
      dtype=object)
```

We have these many countries in Europe

```
countryeuropee_df=countryeurope_df.groupby('country')[['life_exp', 'gdp_cap', 'population']].aggregate({'life_exp': 'mean', 'gdp_cap':
countryeuropee_df.head(5)
```

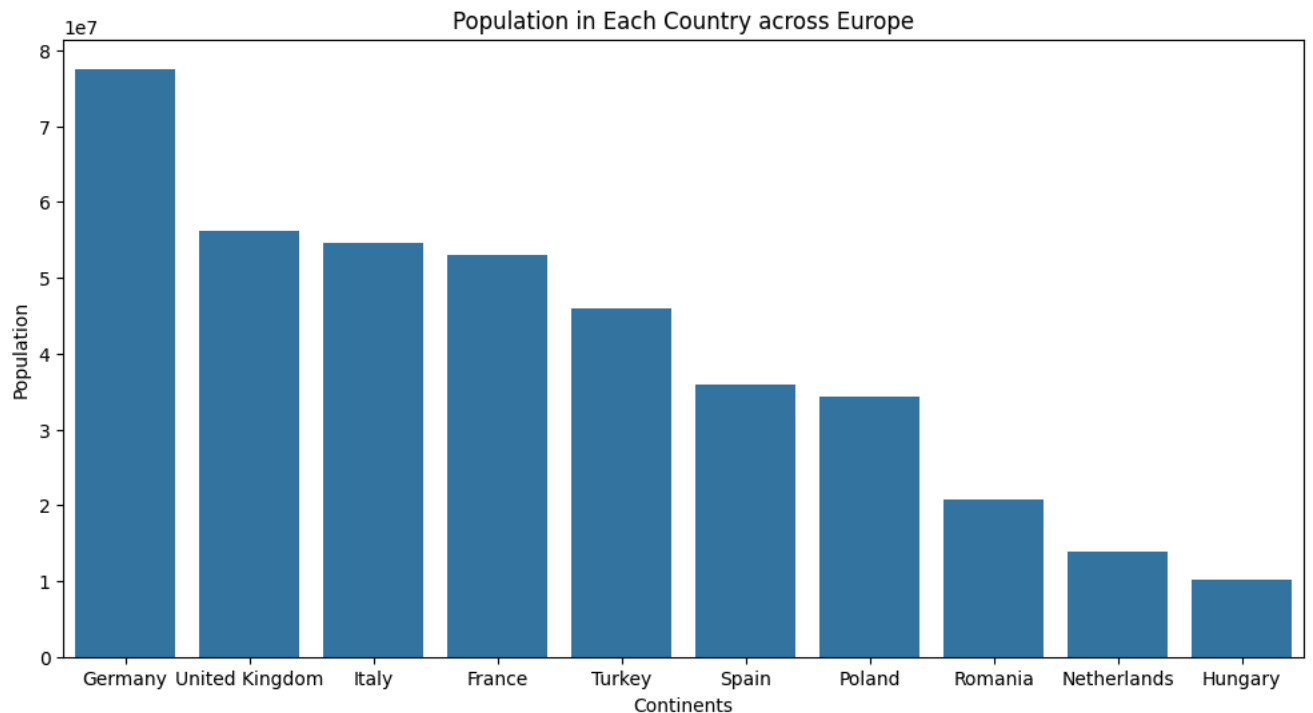
	life_exp	gdp_cap	population
country			
Albania	68.432917	3255.366633	2.580249e+06
Austria	73.103250	20411.916279	7.583298e+06
Belgium	73.641750	19900.758072	9.725119e+06
Bosnia and Herzegovina	67.707833	3484.779069	3.816525e+06
Bulgaria	69.743750	6384.055172	8.182985e+06

Next steps: [Generate code with countryeurope_df](#) [View recommended plots](#) [New interactive sheet](#)

Top 10 Highly Populated country in Europe

```
t10pofceurope_df = countryeurope_df.sort_values(by='population', ascending=False).head(10)
print(t10pofceurope_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofceurope_df,x='country', y='population')
plt.xlabel("Continents")
plt.ylabel("Population")
plt.title("Population in Each Country across Europe")
plt.show()
```

country	life_exp	gdp_cap	population
Germany	73.444417	20556.684433	7.754704e+07
United Kingdom	73.922583	19380.472986	5.608780e+07
Italy	74.013833	16245.209006	5.453696e+07
France	74.348917	18833.570327	5.295256e+07
Turkey	59.696417	4469.453380	4.590901e+07
Spain	74.203417	14029.826479	3.585180e+07
Poland	70.176917	8416.553912	3.432330e+07
Romania	68.290667	7300.169974	2.081909e+07
Netherlands	75.648500	21748.852208	1.378680e+07
Hungary	69.393167	10888.175654	1.021765e+07

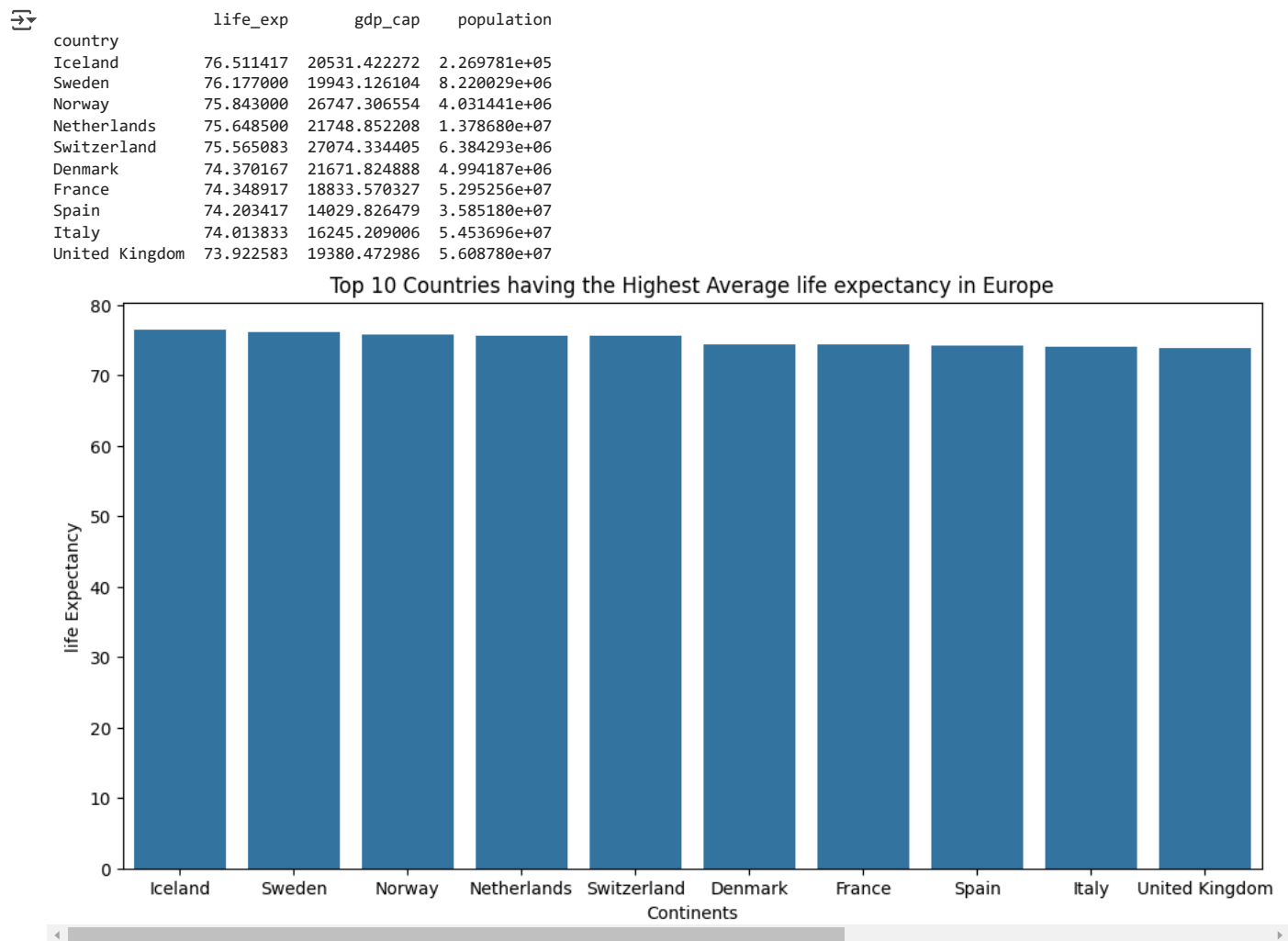


We can Say that Germany is the most highly populated Country in Europe

Highest Average Life Expectancy in Europe

```
t10poflifeexpeurope_df = countryeurope_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpeurope_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpeurope_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
```

```
plt.title("Top 10 Countries having the Highest Average life expectancy in Europe")
plt.show()
```

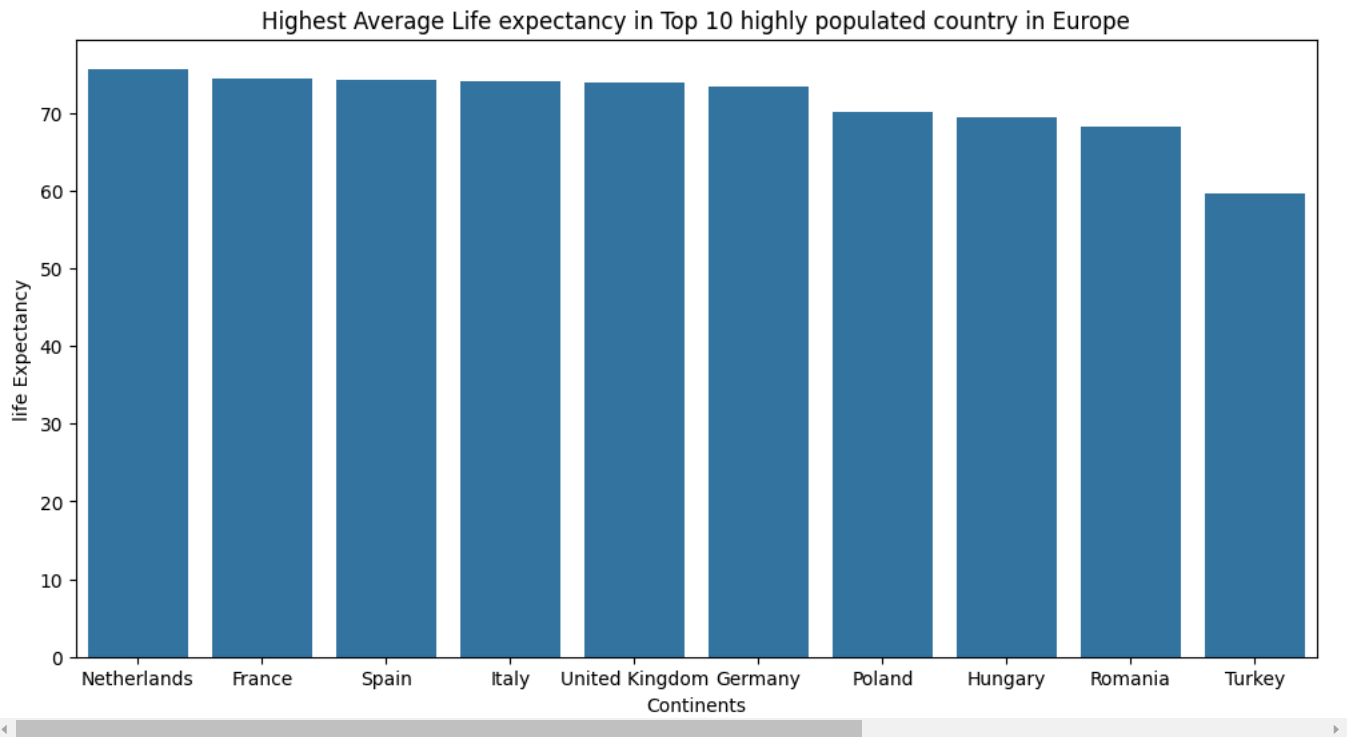


Iceland has the highest average life expectancy of about 76.511417

Average life Expectancy of highly populated countries in Europe

```
t10poflifeexpeurope_df = t10pofceurope_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpeurope_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpeurope_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Highest Average Life expectancy in Top 10 highly populated country in Europe")
plt.show()
```


country	life_exp	gdp_cap	population
Netherlands	75.648500	21748.852208	1.378680e+07
France	74.348917	18833.570327	5.295256e+07
Spain	74.203417	14029.826479	3.585180e+07
Italy	74.013833	16245.209006	5.453696e+07
United Kingdom	73.922583	19380.472986	5.608780e+07
Germany	73.444417	20556.684433	7.754704e+07
Poland	70.176917	8416.553912	3.432330e+07
Hungary	69.393167	10888.175654	1.021765e+07
Romania	68.290667	7300.169974	2.081909e+07
Turkey	59.696417	4469.453380	4.590901e+07

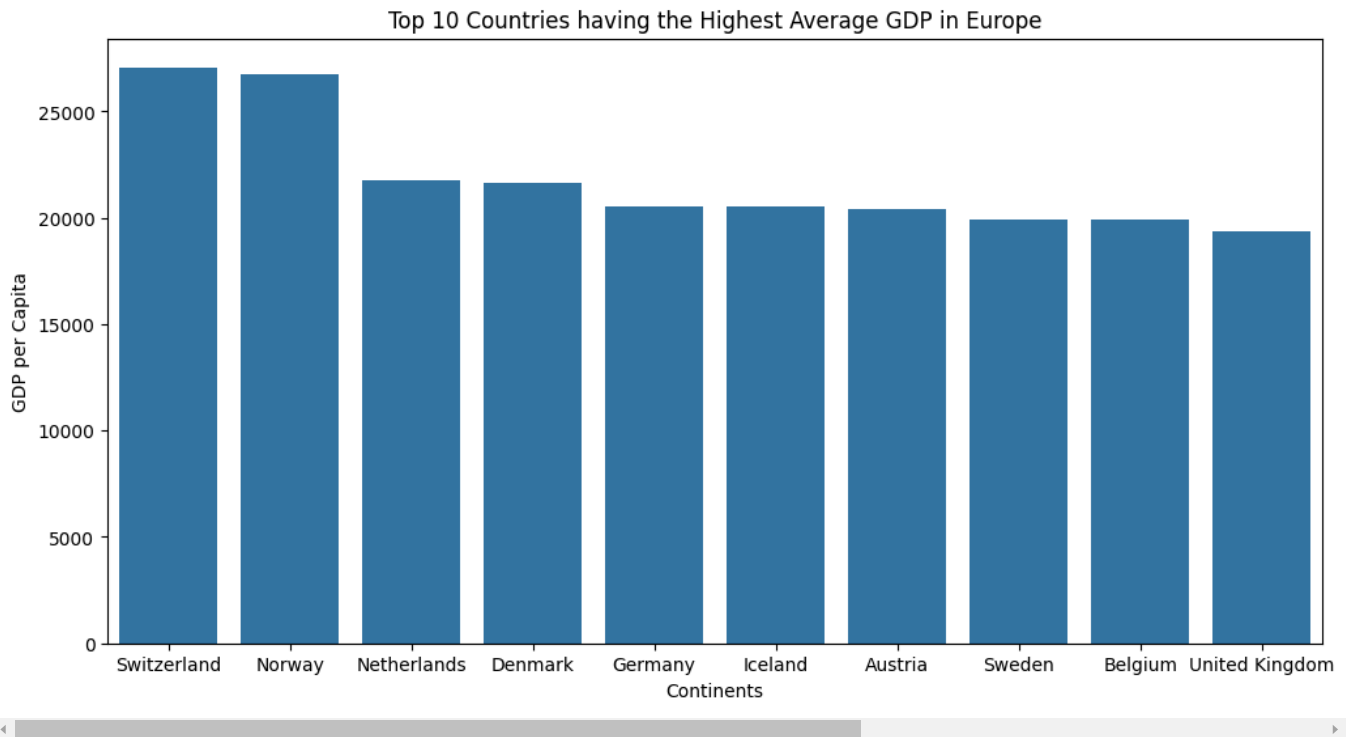


Among the highest populated country netherland has the highest average life expectancy that is about 75.6

Top 10 Highest GDP in Europe

```
t10pofgdpeurope_df = countryeurope_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofgdpeurope_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofgdpeurope_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in Europe")
plt.show()
```

country	life_exp	gdp_cap	population
Switzerland	75.565083	27074.334405	6.384293e+06
Norway	75.843000	26747.306554	4.031441e+06
Netherlands	75.648500	21748.852208	1.378680e+07
Denmark	74.370167	21671.824888	4.994187e+06
Germany	73.444417	20556.684433	7.754704e+07
Iceland	76.511417	20531.422272	2.269781e+05
Austria	73.103250	20411.916279	7.583298e+06
Sweden	76.177000	19943.126104	8.220029e+06
Belgium	73.641750	19900.758072	9.725119e+06
United Kingdom	73.922583	19380.472986	5.608780e+07



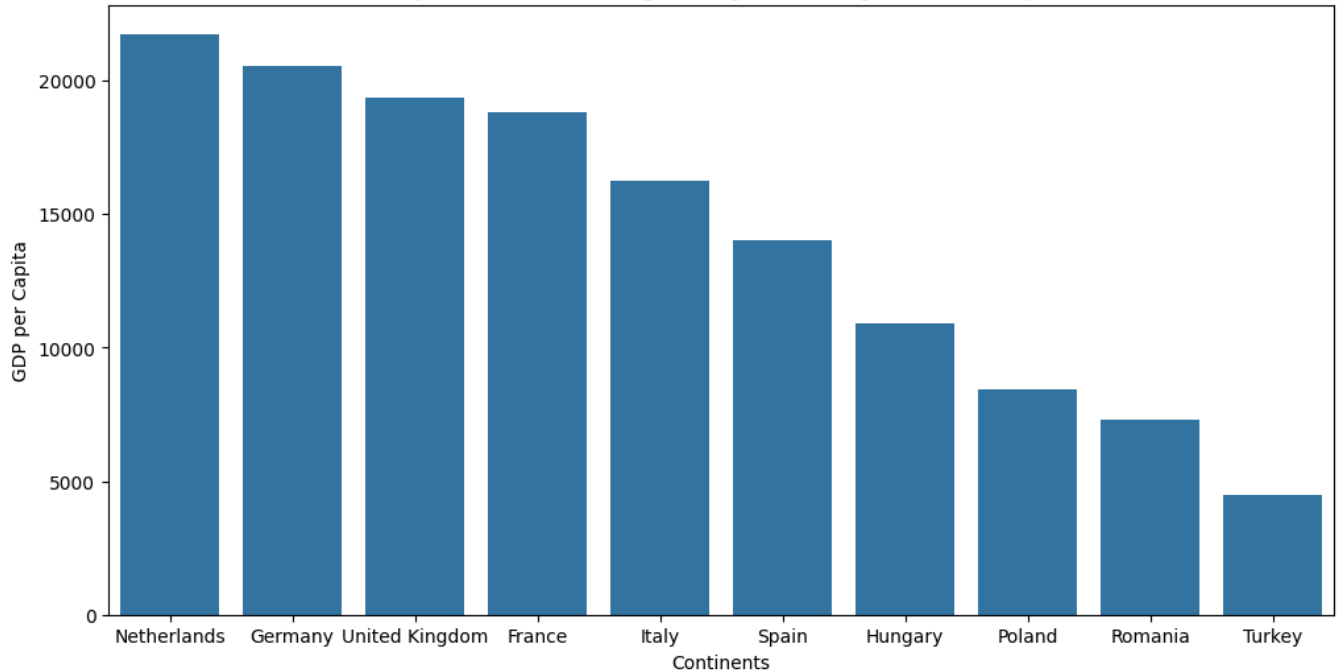
We can see that Switzerland has the highest average GDP per capita of about 27074.334405

Highest GDP in highly populated countries of Europe

```
t10pofcgdpeurope_df = t10pofceurope_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofcgdpeurope_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcgdpeurope_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in Europe")
plt.show()
```

country	life_exp	gdp_cap	population
Netherlands	75.648500	21748.852208	1.378680e+07
Germany	73.444417	20556.684433	7.754704e+07
United Kingdom	73.922583	19380.472986	5.608780e+07
France	74.348917	18833.570327	5.295256e+07
Italy	74.013833	16245.209006	5.453696e+07
Spain	74.203417	14029.826479	3.585180e+07
Hungary	69.393167	10888.175654	1.021765e+07
Poland	70.176917	8416.553912	3.432330e+07
Romania	68.290667	7300.169974	2.081909e+07
Turkey	59.696417	4469.453380	4.590901e+07

Top 10 Countries having the Highest Average GDP in Europe



We can see among the highest populated areas Netherland has the highest GDP which is about 21748

Analysis on Africa

```
countryafrica_df = data_df.loc[data_df['continent']=='Africa']
countryafrica_df.head(5)
```

	country	year	population	continent	life_exp	gdp_cap
24	Algeria	1952	9279525	Africa	43.077	2449.008185
25	Algeria	1957	10270856	Africa	45.685	3013.976023
26	Algeria	1962	11000948	Africa	48.303	2550.816880
27	Algeria	1967	12760499	Africa	51.407	3246.991771
28	Algeria	1972	14760787	Africa	54.518	4182.663766

Next steps: [Generate code with countryafrica_df](#) [View recommended plots](#) [New interactive sheet](#)

```
countryafrica_df['country'].unique()
```

```
array(['Algeria', 'Angola', 'Benin', 'Botswana', 'Burkina Faso',
      'Burundi', 'Cameroon', 'Central African Republic', 'Chad',
      'Comoros', 'Congo, Dem. Rep.', 'Congo, Rep.', 'Cote d'Ivoire',
      'Djibouti', 'Egypt', 'Equatorial Guinea', 'Eritrea', 'Ethiopia',
      'Gabon', 'Gambia', 'Ghana', 'Guinea', 'Guinea-Bissau', 'Kenya',
      'Lesotho', 'Liberia', 'Libya', 'Madagascar', 'Malawi', 'Mali',
      'Mauritania', 'Mauritius', 'Morocco', 'Mozambique', 'Namibia',
      'Niger', 'Nigeria', 'Reunion', 'Rwanda', 'Sao Tome and Principe',
      'Senegal', 'Sierra Leone', 'Somalia', 'South Africa', 'Sudan',
      'Swaziland', 'Tanzania', 'Togo', 'Tunisia', 'Uganda', 'Zambia',
      'Zimbabwe'], dtype=object)
```

These are the countries in Africa

```
countryafricaa_df=countryafricaa_df.groupby('country')[['life_exp', 'gdp_cap', 'population']].aggregate({'life_exp': 'mean', 'gdp_cap': 'mean', 'population': 'sum'})
countryafricaa_df.head(5)
```

	life_exp	gdp_cap	population
country			
Algeria	59.030167	4426.025973	1.987541e+07
Angola	37.883500	3607.100529	7.309390e+06
Benin	48.779917	1155.395107	4.017497e+06
Botswana	54.597500	5031.503557	9.711862e+05
Burkina Faso	44.694000	843.990665	7.548677e+06

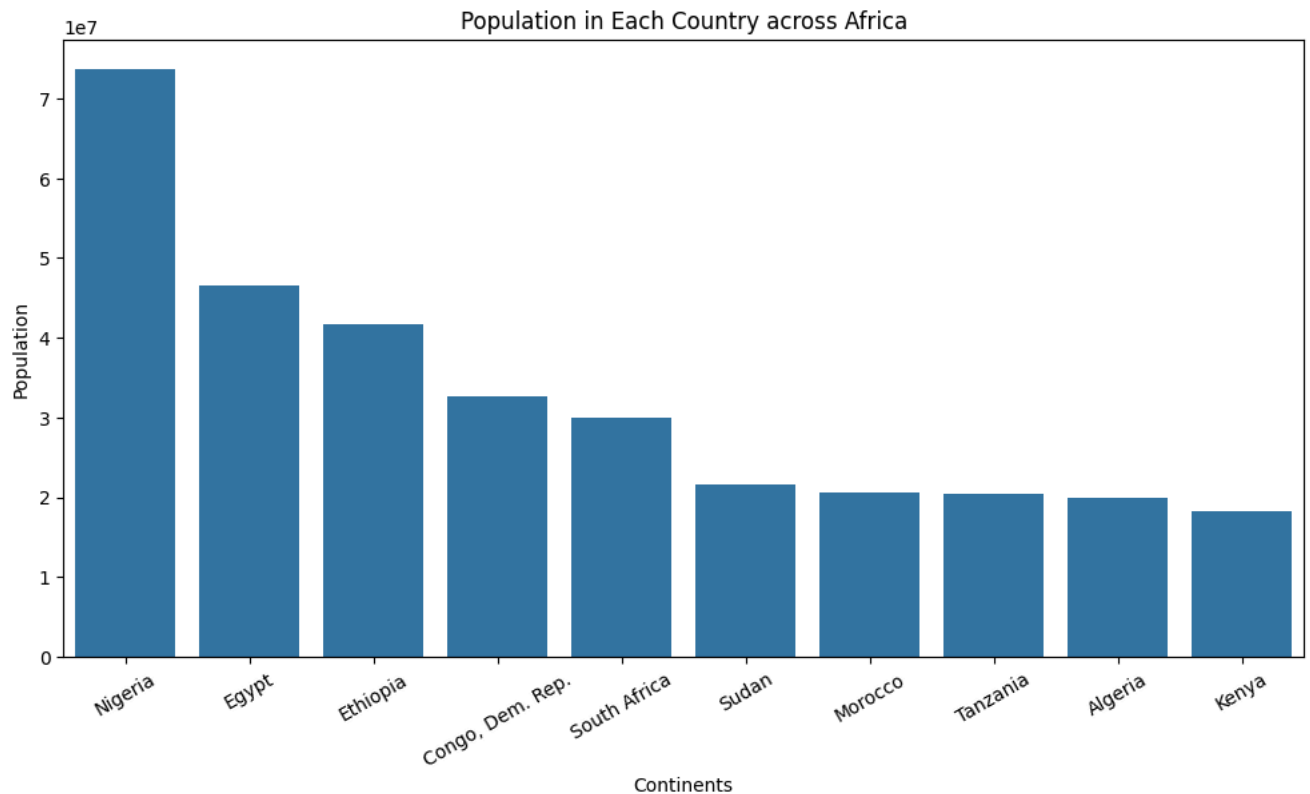
Next steps:

[Generate code with countryafricaa_df](#)[View recommended plots](#)[New interactive sheet](#)

Top 10 highly populated country in Africa

```
t10pofcafrica_df = countryafricaa_df.sort_values(by='population', ascending=False).head(10)
print(t10pofcafrica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcafrica_df,x='country', y='population')
plt.xlabel("Continents")
plt.ylabel("Population")
plt.xticks(rotation=30)
plt.title("Population in Each Country across Africa")
plt.show()
```

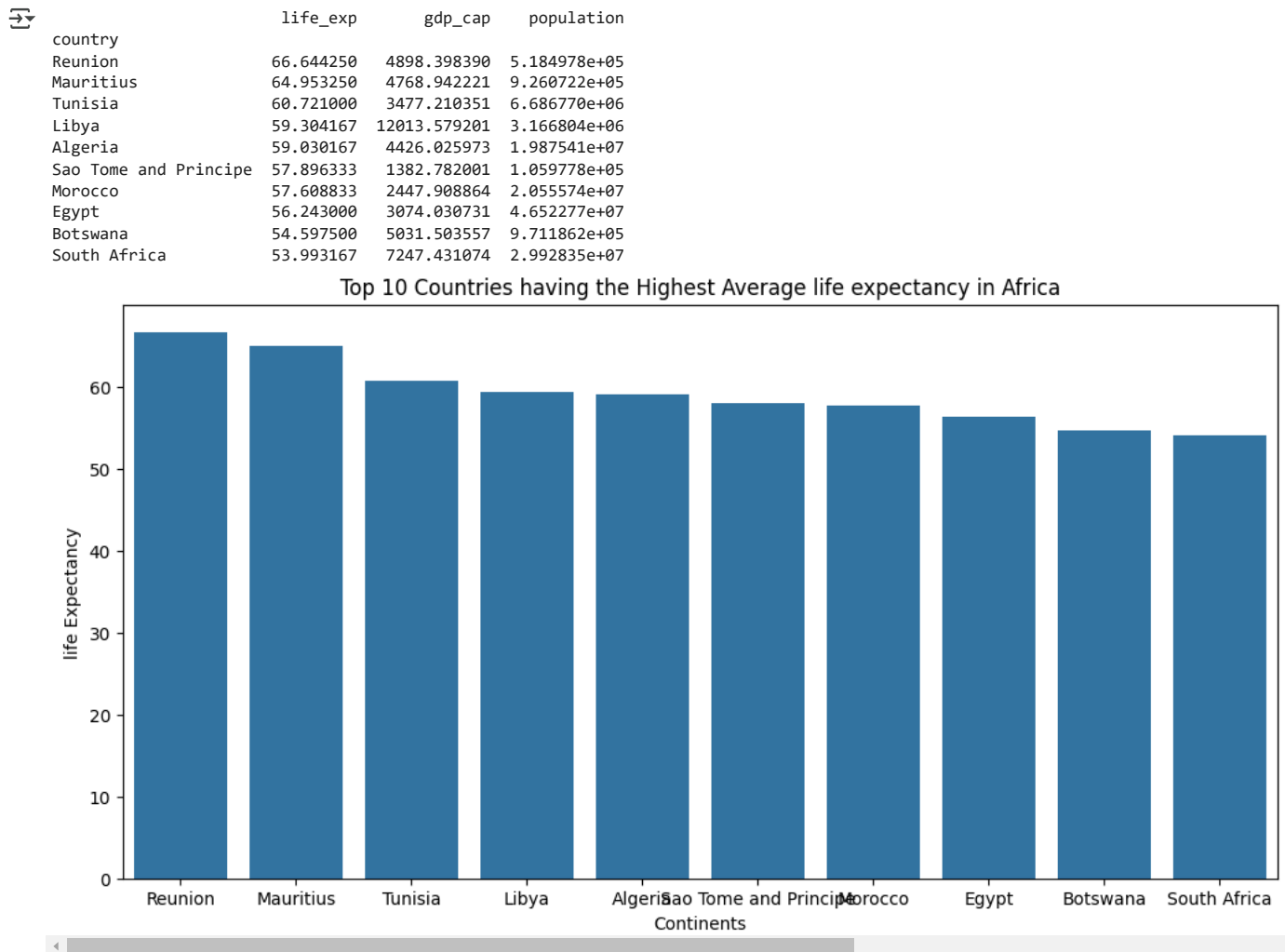
	life_exp	gdp_cap	population
country			
Nigeria	43.581333	1488.309429	7.370802e+07
Egypt	56.243000	3074.030731	4.652277e+07
Ethiopia	44.475750	509.115155	4.163252e+07
Congo, Dem. Rep.	44.543750	648.342646	3.268166e+07
South Africa	53.993167	7247.431074	2.992835e+07
Sudan	48.400500	1835.010430	2.156033e+07
Morocco	57.608833	2447.908864	2.055574e+07
Tanzania	47.912333	849.281271	2.049950e+07
Algeria	59.030167	4426.025973	1.987541e+07
Kenya	52.681000	1200.415720	1.820625e+07



We can see that Nigeria has the highest average population about Seventy-three million, seven hundred eight thousand, twenty.

Highest Average Life expectancy

```
t10poflifeexpafrica_df = countryafrica_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpafrica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpafrica_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Top 10 Countries having the Highest Average life expectancy in Africa")
plt.show()
```



Highest life expectancy is in the Reunion country of africa which is about 66.644250

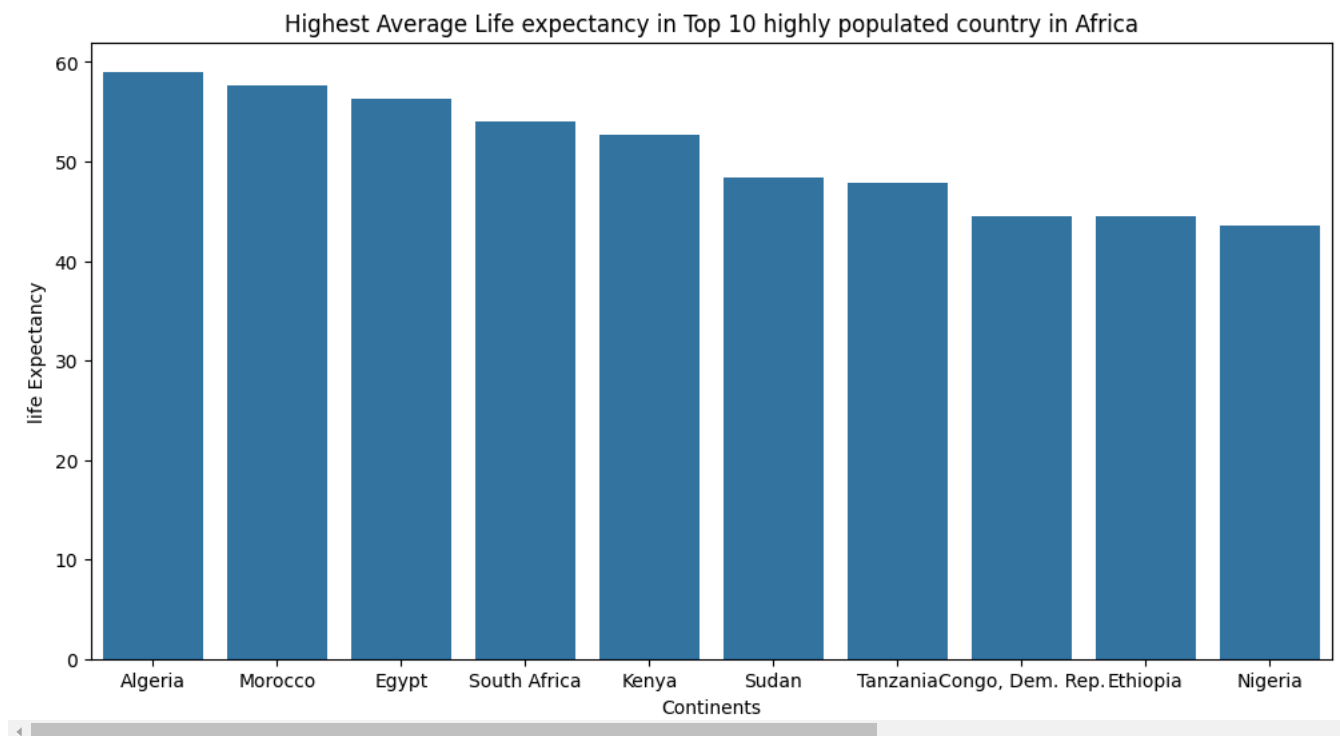
Average life expectancy of highly Populated country in Africa

```
t10poflifeexpafrica_df = t10pofcafrica_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpafrica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpafrica_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Highest Average Life expectancy in Top 10 highly populated country in Africa")
plt.show()
```

Average life expectancy of highly Populated country in Africa

```
t10poflifeexpafrica_df = t10pofcafrica_df.sort_values(by='life_exp', ascending=False).head(10)
print(t10poflifeexpafrica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpafrica_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Highest Average Life expectancy in Top 10 highly populated country in Africa")
plt.show()
```

country	life_exp	gdp_cap	population
Algeria	59.030167	4426.025973	1.987541e+07
Morocco	57.608833	2447.908864	2.055574e+07
Egypt	56.243000	3074.030731	4.652277e+07
South Africa	53.993167	7247.431074	2.992835e+07
Kenya	52.681000	1200.415720	1.820625e+07
Sudan	48.400500	1835.010430	2.156033e+07
Tanzania	47.912333	849.281271	2.049950e+07
Congo, Dem. Rep.	44.543750	648.342646	3.268166e+07
Ethiopia	44.475750	509.115155	4.163252e+07
Nigeria	43.581333	1488.309429	7.370802e+07



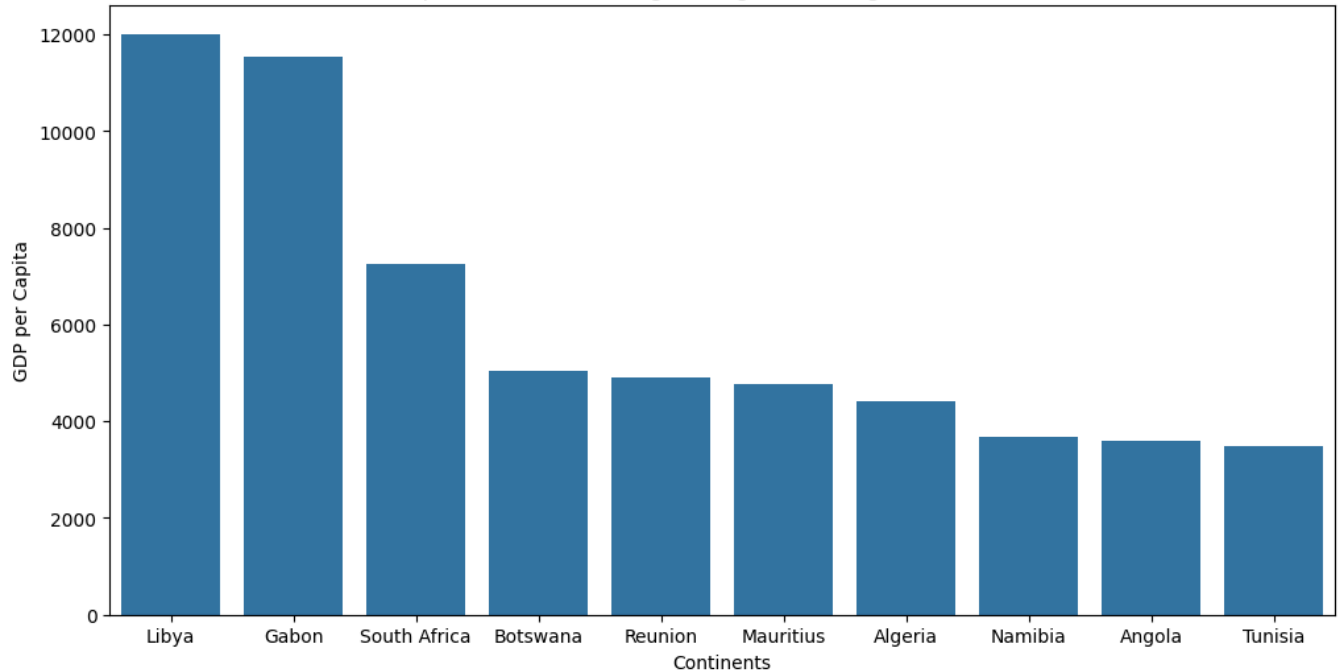
Amongst the top highly populated countries in Africa we can say that Algeria is the one which has the highest Life Expectancy

Top 10 Highest GDP in Africa

```
t10pofgdpafrica_df = countryafricaa_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofgdpafrica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofgdpafrica_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in Africa")
plt.show()
```

country	life_exp	gdp_cap	population
Libya	59.304167	12013.579201	3.166804e+06
Gabon	51.220500	11529.865474	7.954154e+05
South Africa	53.993167	7247.431074	2.992835e+07
Botswana	54.597500	5031.503557	9.711862e+05
Reunion	66.644250	4898.398390	5.184978e+05
Mauritius	64.953250	4768.942221	9.260722e+05
Algeria	59.030167	4426.025973	1.987541e+07
Namibia	53.491333	3675.582087	1.157850e+06
Angola	37.883500	3607.100529	7.309390e+06
Tunisia	60.721000	3477.210351	6.686770e+06

Top 10 Countries having the Highest Average GDP in Africa



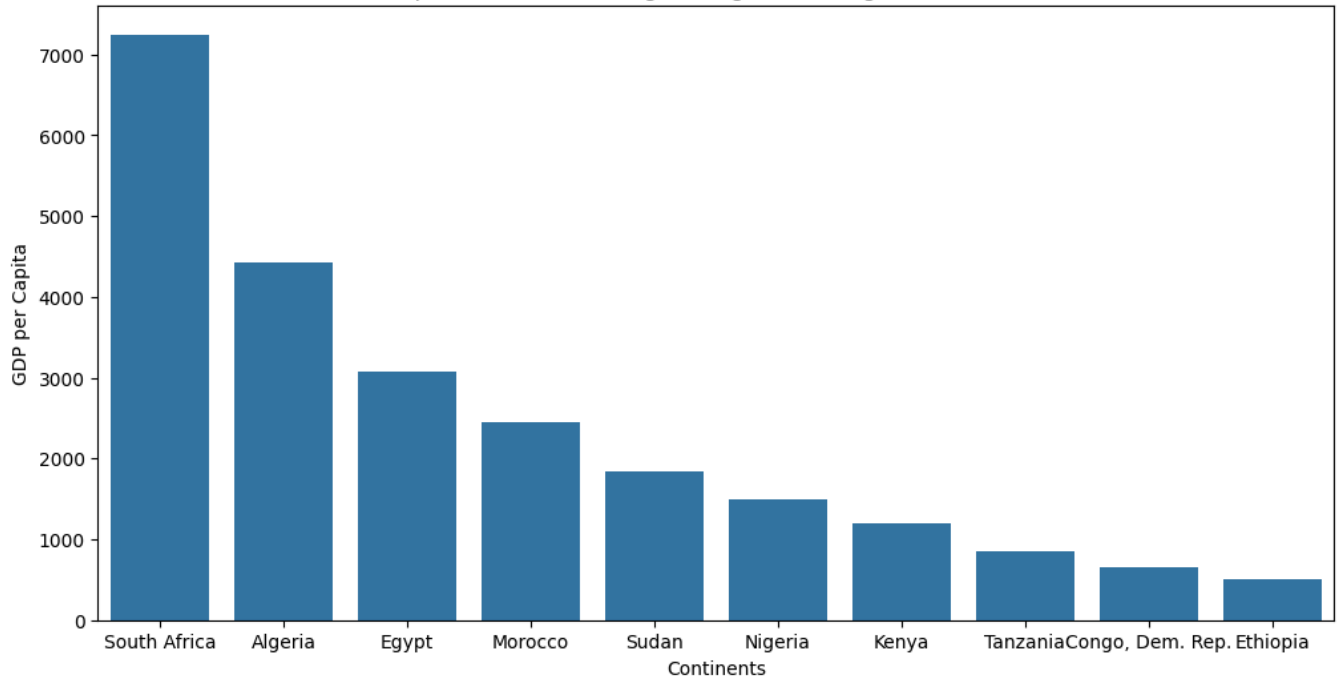
Libya has the highest GDP in Africa which is about 12013

Highest Average GDP in highly populated countries of Africa

```
t10pofcgdpcafrica_df = t10pofcafrica_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofcgdpcafrica_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcgdpcafrica_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in Africa")
plt.show()
```

country	life_exp	gdp_cap	population
South Africa	53.993167	7247.431074	2.992835e+07
Algeria	59.030167	4426.025973	1.987541e+07
Egypt	56.243000	3074.030731	4.652277e+07
Morocco	57.608833	2447.908864	2.055574e+07
Sudan	48.400500	1835.010430	2.156033e+07
Nigeria	43.581333	1488.309429	7.370802e+07
Kenya	52.681000	1200.415720	1.820625e+07
Tanzania	47.912333	849.281271	2.049950e+07
Congo, Dem. Rep.	44.543750	648.342646	3.268166e+07
Ethiopia	44.475750	509.115155	4.163252e+07

Top 10 Countries having the Highest Average GDP in Africa



South africa has the highest GDP amongst the highly populated countries of Africa

Analysis on Oceania Region

```
countryoceania_df = data_df.loc[data_df['continent']=='Oceania']
countryoceania_df.head(5)
```

	country	year	population	continent	life_exp	gdp_cap
60	Australia	1952	8691212	Oceania	69.12	10039.59564
61	Australia	1957	9712569	Oceania	70.33	10949.64959
62	Australia	1962	10794968	Oceania	70.93	12217.22686
63	Australia	1967	11872264	Oceania	71.10	14526.12465
64	Australia	1972	13177000	Oceania	71.93	16788.62948

```
countryoceania_df['country'].unique()
```

```
array(['Australia', 'New Zealand'], dtype=object)
```

We have two countries that is Australia and New Zealand

```
countryoceaniaa_df=countryoceania_df.groupby('country')[['life_exp', 'gdp_cap', 'population']].aggregate({'life_exp': 'mean', 'gdp_cap': 'mean', 'population': 'mean'})
countryoceaniaa_df.head(5)
```

	life_exp	gdp_cap	population
country			
Australia	74.662917	19980.595634	1.464931e+07
New Zealand	73.989500	17262.622813	3.100032e+06

Highly populated country in Oceania


```

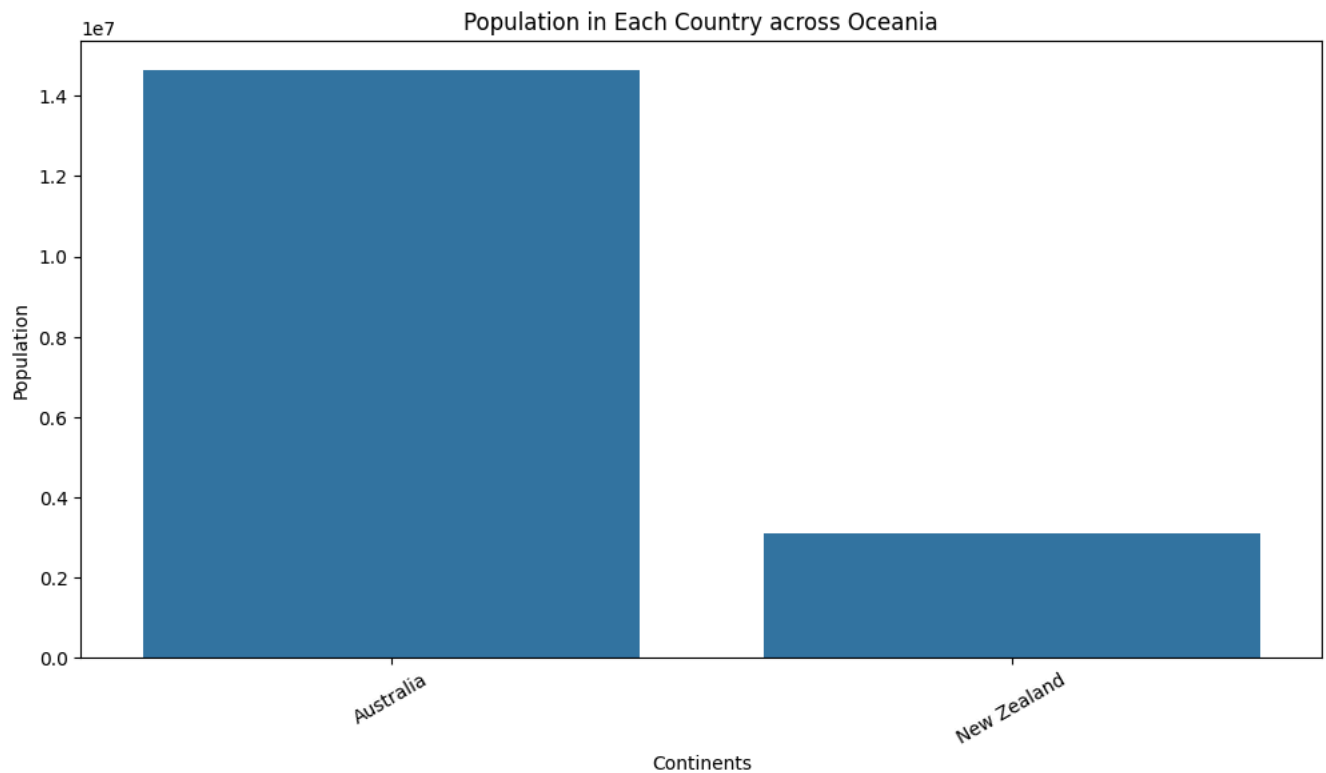
t10pofcoceania_df = countryoceaniaa_df.sort_values(by='population', ascending=False)
print(t10pofcoceania_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofcoceania_df,x='country', y='population')
plt.xlabel("Continents")
plt.ylabel("Population")
plt.xticks(rotation=30)
plt.title("Population in Each Country across Oceania")
plt.show()

```

```

country      life_exp      gdp_cap      population
Australia    74.662917  19980.595634  1.464931e+07
New Zealand  73.989500  17262.622813  3.100032e+06

```



We can see that Australia has the highest population Fourteen million, six hundred forty-nine thousand, three hundred ten.

Highest Average Life expectancy

```

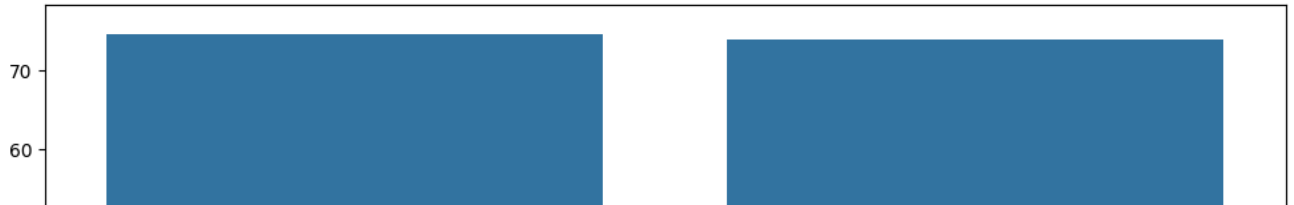
t10poflifeexpoceania_df = countryoceaniaa_df.sort_values(by='life_exp', ascending=False)
print(t10poflifeexpoceania_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10poflifeexpoceania_df,x='country', y='life_exp')
plt.xlabel("Continents")
plt.ylabel("life Expectancy")
plt.title("Top 10 Countries having the Highest Average life expectancy in Oceania")
plt.show()

```



country	life_exp	gdp_cap	population
Australia	74.662917	19980.595634	1.464931e+07
New Zealand	73.989500	17262.622813	3.100032e+06

Top 10 Countries having the Highest Average life expectancy in Oceania



Average life expectancy is almost similar but australia has the upper hand of 74.662917



Highest GDP in Oceania



```
t10pofgdpoceania_df = countryoceaniaa_df.sort_values(by='gdp_cap', ascending=False).head(10)
print(t10pofgdpoceania_df)
plt.figure(figsize=(12,6))
sns.barplot(data=t10pofgdpoceania_df,x='country', y='gdp_cap')
plt.xlabel("Continents")
plt.ylabel("GDP per Capita")
plt.title("Top 10 Countries having the Highest Average GDP in Oceania")
plt.show()
```



country	life_exp	gdp_cap	population
Australia	74.662917	19980.595634	1.464931e+07
New Zealand	73.989500	17262.622813	3.100032e+06

Top 10 Countries having the Highest Average GDP in Oceania

