World's largest islands

This dataset `largest-islands.csv` contains information about the 100 largest islands in the world. The unit for the `area` column is km2.

Overview of the dataframe

```python
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv('largest-islands.csv')
df
```

0.0s

	region	island	area	countries	climate	rank
0	Africa	Madagascar	591896	Madagascar	tropics	4
1	Antarctic	Kerguelen	6200	Antarctic Lands, France	temperate	91
2	Asia	Sumba	11153	Indonesia	tropics	65
3	Asia	Hainan	34300	China	tropics	37
4	Asia	Taiwan	36198	Taiwan	tropics	36
...	...	...	...	...	...	...
95	Oceania	Guadalcanal	5302	Solomon Islands	tropics	100
96	South America	East Falkland	6605	Argentina	temperate	89
97	South America	Chiloe	8394	Chile	temperate	81
98	South America	Isla Grande de Tierra del Fuego	47992	Chile, Argentina	temperate	28
99	South America	Wellington	5556	Chile	temperate	95

100 rows × 6 columns

Project Ideas

What are the 10 largest islands in the tropics?

What are the largest islands in each `region`?

Create a line graph with `area` on the y-axis and `rank` on the x-axis. The data should be ordered by `rank`, from largest to smallest.

1. **Top 10 largest islands with a tropical climate**

```
# Top 10 largest islands by area by tropics
top_10 = df.query("climate == 'tropics'").sort_values(by='area' , ascending=False).head(10)
top_10
```

✓ 0.0s

	region	island	area	countries	climate	rank
86	Oceania	New Guinea	821400	Papua New Guinea, Indonesia	tropics	2
23	Asia	Borneo	755000	Indonesia, Malaysia, Brunei	tropics	3
0	Africa	Madagascar	591896	Madagascar	tropics	4
28	Asia	Sumatra	480793	Indonesia	tropics	6
22	Asia	Sulawesi	188522	Indonesia	tropics	11
21	Asia	Java	129438	Indonesia	tropics	13
80	North America	Cuba	109884	Cuba	tropics	16
26	Asia	Luzon	104688	Philippines	tropics	17
14	Asia	Mindanao	94630	Philippines	tropics	19
73	North America	Hispaniola	76192	Dominican Republic, Haiti	tropics	23

2. **Largest Islands in per region**

```
# Largest Islands in per region
region_largest = df.groupby('region').max('area')
region_largest
```

✓ 0.0s

region	area	rank
Africa	591896	4
Antarctic	6200	91
Asia	755000	98
Eurasia	76400	91
Europe	2166086	86
North America	507451	99
Oceania	821400	100
South America	47992	95

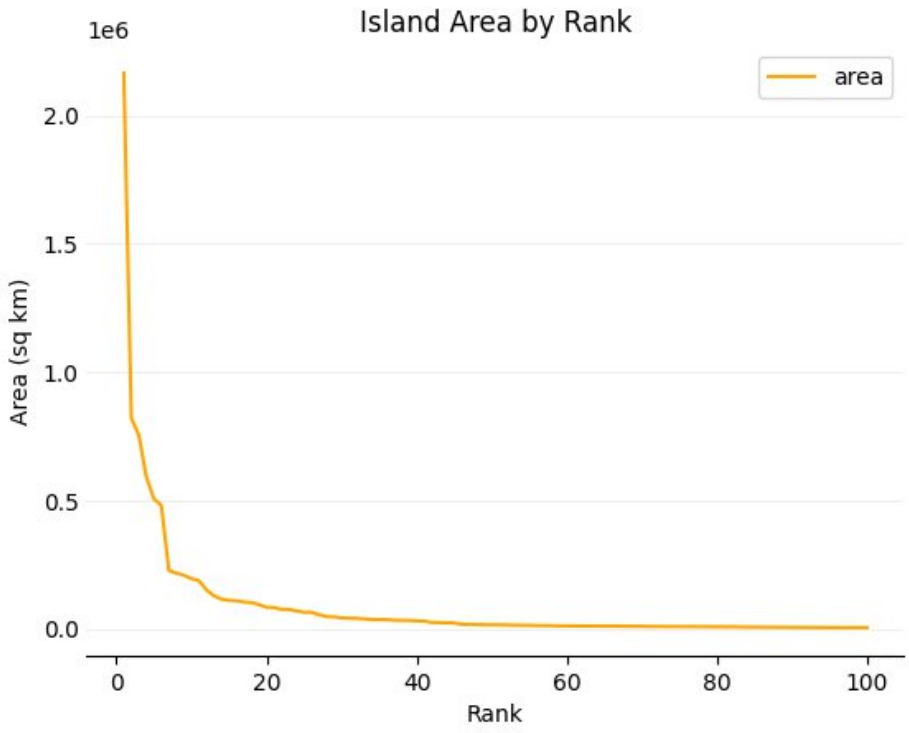
3. **Create a line graph with `area` on the y-axis and `rank` on the x-axis. The data should be ordered by `rank`, from largest to smallest.**

We will be using the function clean_axes(), to make the graph much readable.

```
def clean_axes( ):
    ax = plt.gca()
    ax.spines[['top', 'left', 'right']].set_visible(False)
    ax.grid(axis='y', alpha=0.2)
    ax.tick_params(axis='y', length=0)

df = df.sort_values(by='rank', ascending=True)
df.plot(x='rank', y='area', color = 'orange')
plt.xlabel('Rank')
plt.ylabel('Area (sq km)')
plt.title('Island Area by Rank')
clean_axes( )
```

✓ 0.0s



In this graph, we used the "Rank" and "Area" columns to form the line graph. There's only one inference that we can get from this; the ranking system from the data is reliable when it comes to measurement of the islands.

Now, we would like to create another graph that will show the average area of islands per region and make some other inferences.

Count of countries per region

```
# Count of countries per region
region_count = df['region'].value_counts().reset_index()
region_count.columns = ['region', 'count']
region_count
```

✓ 0.0s

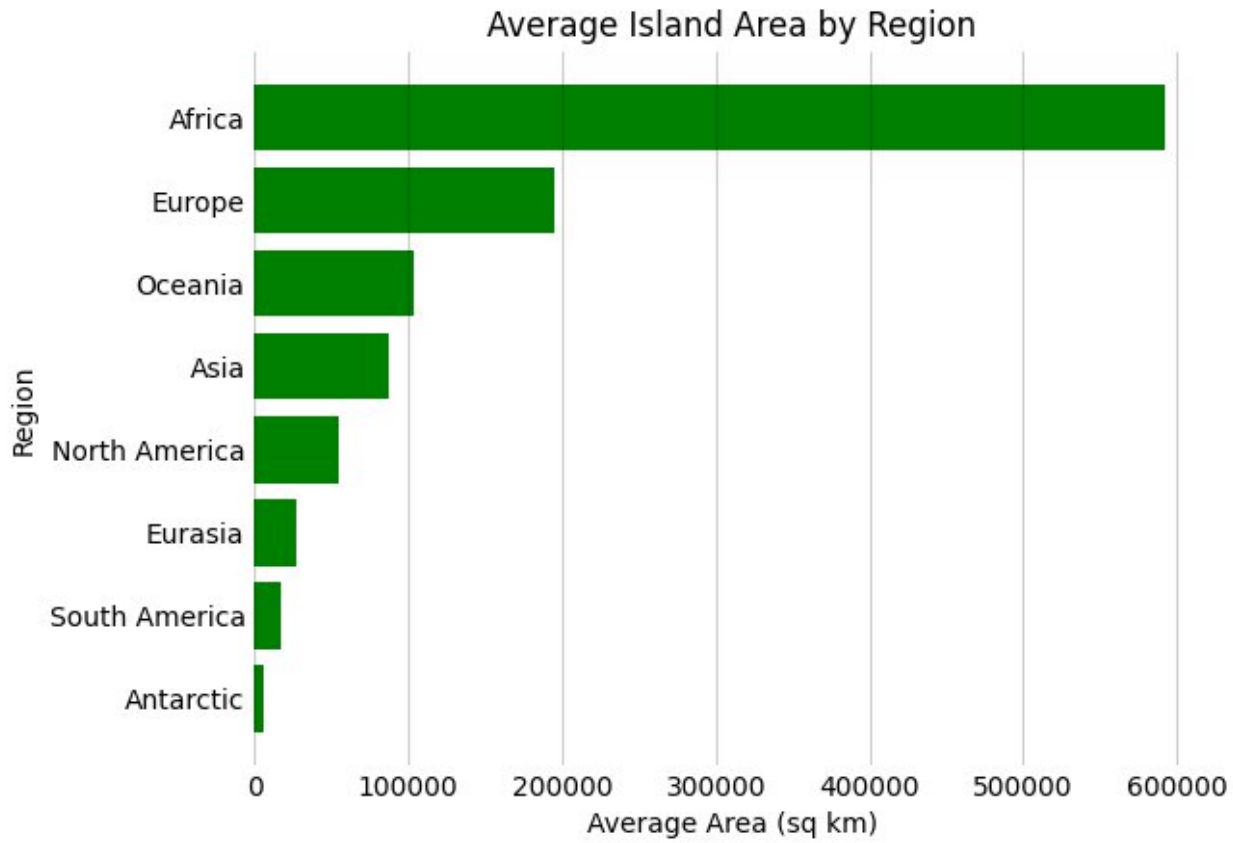
	region	count
0	North America	32
1	Asia	28
2	Europe	14
3	Oceania	12
4	Eurasia	8
5	South America	4
6	Africa	1
7	Antarctic	1

Now, we would like to create another graph that will show the average area of islands per region and make some other inferences.

```
def clean_bar_axes( ):
    ax = plt.gca()
    ax.spines[['top', 'bottom', 'right' , 'left']].set_visible(False)
    ax.grid(axis='x', color='black', alpha=0.2)
    ax.tick_params(axis='both', length=0)

average_area = df.groupby('region')['area'].mean().reset_index().sort_values(by='area')
plt.barh(average_area['region'], average_area['area'], color='green')
plt.xlabel('Average Area (sq km)')
plt.ylabel('Region')
plt.title('Average Island Area by Region')
clean_bar_axes( )
```

✓ 0.1s



Africa is ahead as the one with the most average island area in the world. However, this data could be incomplete. Upon looking the overview of the dataframe, Madagascar is the only country that is in the Africa region. That is why when we tried to calculate the average island area, it only divides to only one country. While others have more than 30, their average amounts are much more credible.

Since the data is incomplete, it is not advisable to make an inference for they are not 100% reliable.