Experiment II [4]

August 17, 2025

[2]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

data = pd.read_csv("kl.csv", encoding='latin1')
# These columns are links and will not be used in this notebook
```

[3]:
```
data = data.drop(axis = 1, columns=['Photo','Flag', 'Club Logo'])
data.head()
```

[3]:

	Unnamed: 0	ID	Name	Age	Nationality	Overall	Potential	Club	Value	Wage	…	Composure	Marking	StandingTackle	SlidingTackle	GKDiving	GKHandling	GKKicking	GKPositioning	GKReflexes	Release Clause
0	0	158023	L. Messi	31.0	Argentina	94.0	94	FC Barcelona	110.5M	565K	…	96.0	33.0	28.0	26.0	6.0	11.0	15.0	14.0	8.0	226.5M
1	1	20801	Cristiano Ronaldo	33.0	Portugal	94.0	94	Juventus	77M	405K	…	95.0	28.0	31.0	23.0	7.0	11.0	15.0	14.0	11.0	127.1M
2	2	190871	Neymar Jr	26.0	Brazil	92.0	93	Paris Saint-Germain	118.5M	290K	…	94.0	27.0	24.0	33.0	9.0	9.0	15.0	15.0	11.0	228.1M
3	3	193080	De Gea	27.0	Spain	91.0	93	Manchester United	72M	260K	…	68.0	15.0	21.0	13.0	90.0	85.0	87.0	88.0	94.0	138.6M
4	4	192985	K. De Bruyne	27.0	Belgium	91.0	92	Manchester City	102M	355K	…	88.0	68.0	58.0	51.0	15.0	13.0	5.0	10.0		

```
4       13.0          196.4M

[5 rows x 86 columns]
```

[4]:
```python
def get_value(value):
    try:
        if isinstance(value, str):
            value = value.replace('€', '')
            if 'M' in value:
                return float(value.replace('M', '')) * 1_000_000
            elif 'K' in value:
                return float(value.replace('K', '')) * 1_000
            else:
                return float(value)  # in case it's just a raw number like €100
        return 0.0  # for NaN or unexpected types
    except:
        return 0.0
```

[5]:
```python
data['Value'] = data['Value'].apply(get_value)
data['Wage'] = data['Wage'].apply(get_value)
```

[6]:
```python
print(data[['Value', 'Wage']].describe())
```

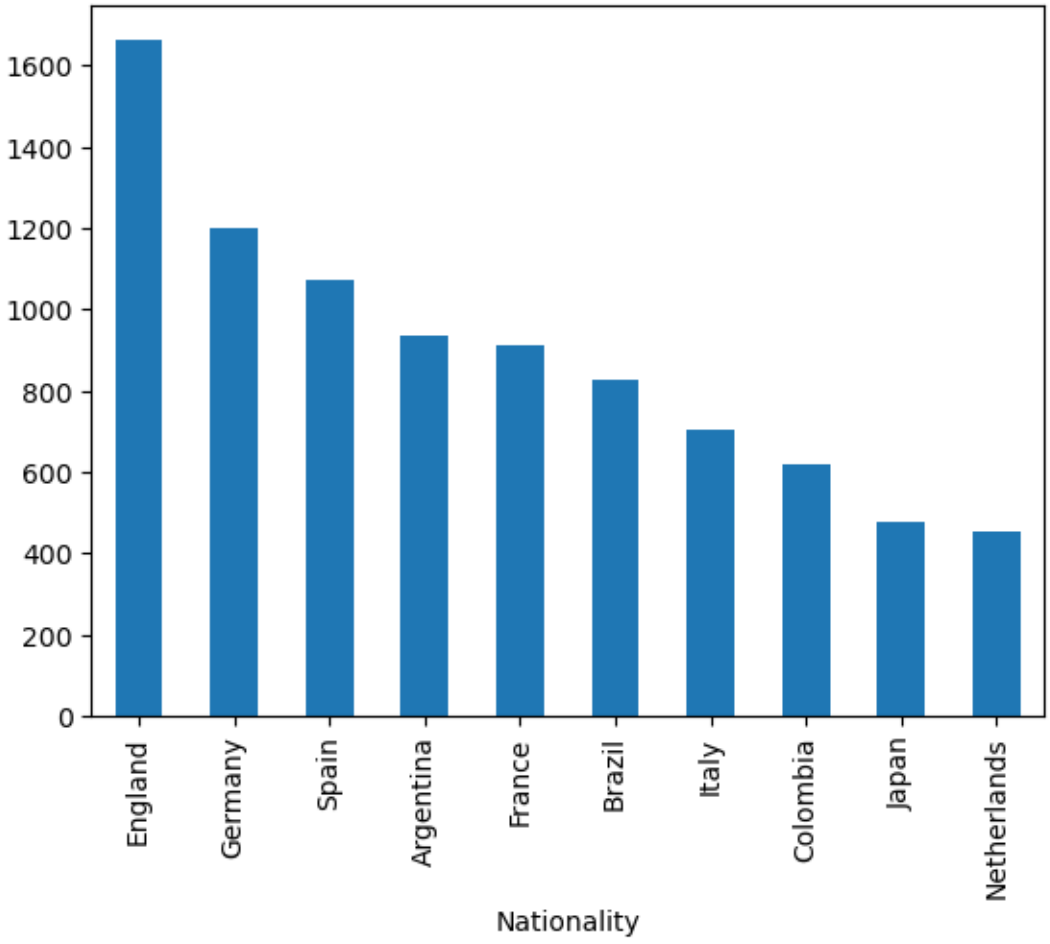
```
              Value      Wage
count  18207.000000  18207.0
mean       0.000000      0.0
std        0.000000      0.0
min        0.000000      0.0
25%        0.000000      0.0
50%        0.000000      0.0
75%        0.000000      0.0
max        0.000000      0.0
```

[7]:
```python
by_nation = data.Nationality.value_counts()
top_10_nation = by_nation[:10]
top_10_nation
```

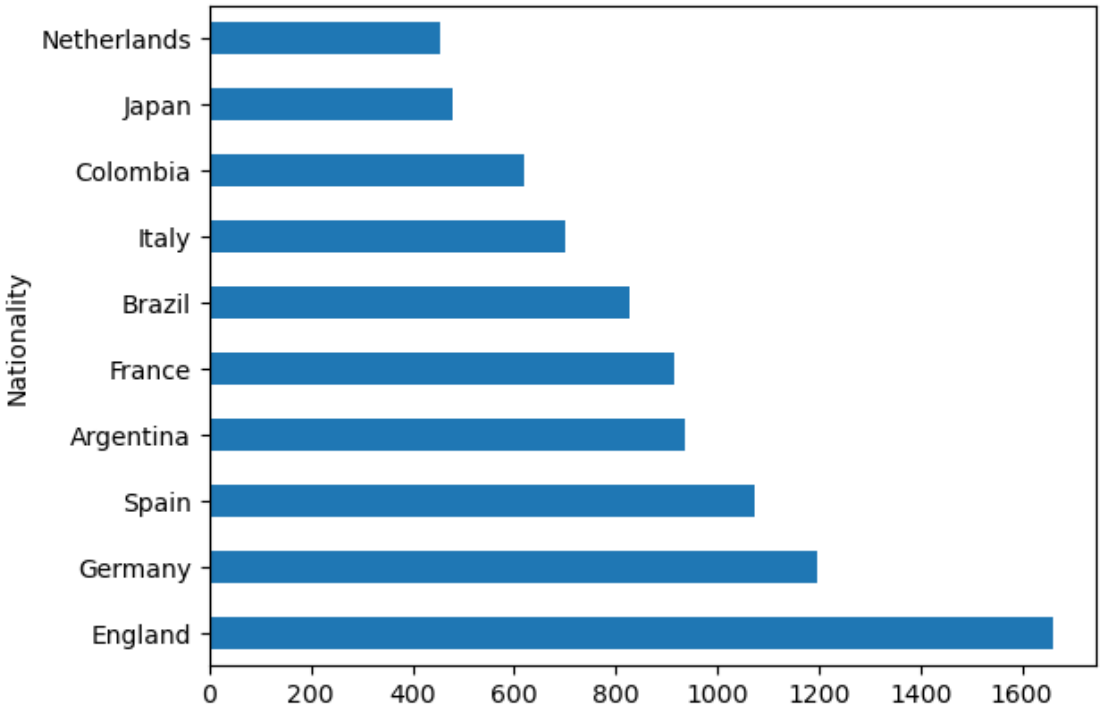
[7]:
```
Nationality
England        1662
Germany        1198
Spain          1072
Argentina       937
France          914
Brazil          827
Italy           702
Colombia        618
Japan           478
Netherlands     453
```

```
Name: count, dtype: int64
```

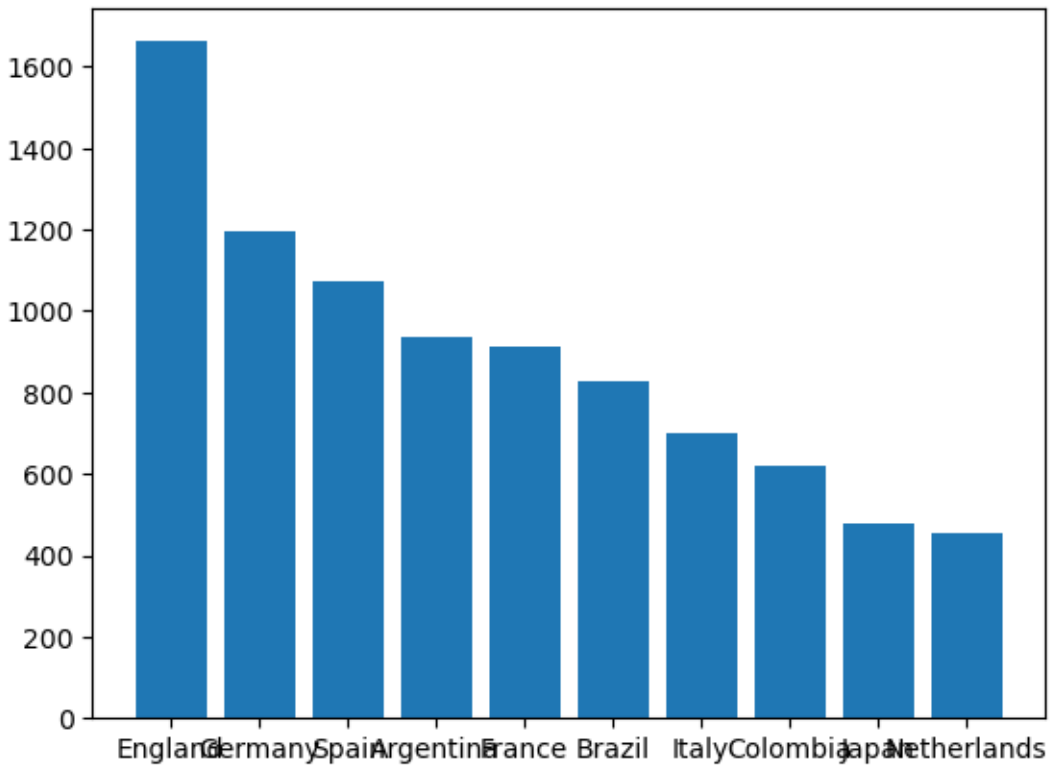
[8]:
```
top_10_nation.plot(kind='bar'); # The ';' is to avoid showing a message before␣
↪the chart
```



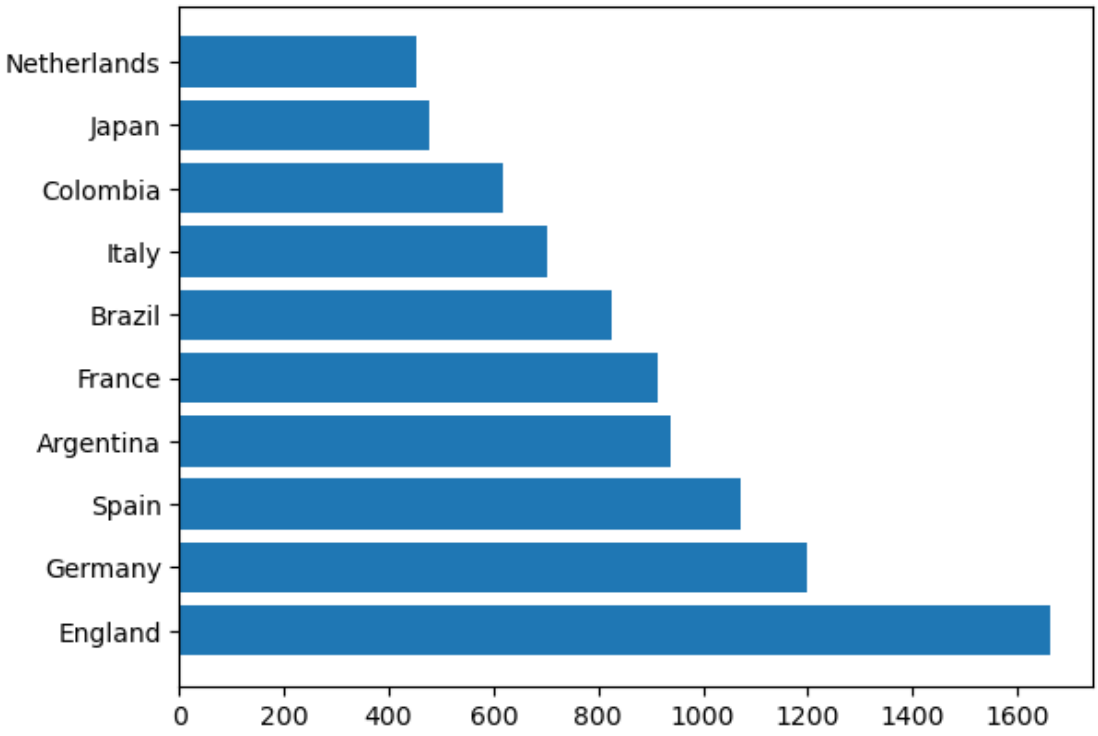
[9]:
```
# We can also plot horizontally by using 'barh' in 'kind' argument
top_10_nation.plot(kind='barh');
```



[10]:
```
# Method 2: plt.bar() in matplotlib - we input x and y arguments
plt.bar(top_10_nation.index, top_10_nation);
```



[11]:
```
# Horizontally
plt.barh(top_10_nation.index, top_10_nation);
```



[12]:
```
top_10_nation_r = top_10_nation.sort_values(ascending=True)
top_10_nation_r.plot(kind='barh');
```