

FIFA Analysis with the Help of Seaborn

```
In [2]: ► import numpy as np # linear algebra
    import pandas as pd
    import seaborn as sns
    sns.set(style="whitegrid")
    import matplotlib.pyplot as plt
    from collections import Counter
%matplotlib inline
import os
for dirname, _, filenames in os.walk(r'C:\Users\yogay\OneDrive\Desktop\Yogita_Yadav\Data Science\17th\Seaborn'):
    for filename in filenames:
        print(os.path.join(dirname, filename))
```

```
C:\Users\yogay\OneDrive\Desktop\Yogita_Yadav\Data Science\17th\Seaborn\FIFA.csv
C:\Users\yogay\OneDrive\Desktop\Yogita_Yadav\Data Science\17th\Seaborn\seaborn-tutorial-for-beginners.ipynb
```

```
In [3]: ► import warnings
    warnings.filterwarnings('ignore')
```

```
In [4]: ► fifa19 = pd.read_csv(r'C:\Users\yogay\OneDrive\Desktop\Yogita_Yadav\Data Science\17th\Seaborn\FIFA.csv', index_col=0)
```

In [5]: ⏎ `fifa19.head()`

Out[5]:

	ID	Name	Age	Photo	Nationality	Flag	Overall	Potential	Club	
0	158023	L. Messi	31	https://cdn.sofifa.org/players/4/19/158023.png	Argentina	https://cdn.sofifa.org/flags/52.png	94	94	FC Barcelona	https://cdn.sofifa.org/
1	20801	Cristiano Ronaldo	33	https://cdn.sofifa.org/players/4/19/20801.png	Portugal	https://cdn.sofifa.org/flags/38.png	94	94	Juventus	https://cdn.sofifa.org/
2	190871	Neymar Jr	26	https://cdn.sofifa.org/players/4/19/190871.png	Brazil	https://cdn.sofifa.org/flags/54.png	92	93	Paris Saint-Germain	https://cdn.sofifa.org/
3	193080	De Gea	27	https://cdn.sofifa.org/players/4/19/193080.png	Spain	https://cdn.sofifa.org/flags/45.png	91	93	Manchester United	https://cdn.sofifa.org/
4	192985	K. De Bruyne	27	https://cdn.sofifa.org/players/4/19/192985.png	Belgium	https://cdn.sofifa.org/flags/7.png	91	92	Manchester City	https://cdn.sofifa.org/

5 rows × 88 columns



In [6]: ➜ `fifa19.info()`

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 18207 entries, 0 to 18206
Data columns (total 88 columns):
 #   Column           Non-Null Count Dtype  
 --- 
 0   ID               18207 non-null  int64   
 1   Name              18207 non-null  object  
 2   Age               18207 non-null  int64   
 3   Photo              18207 non-null  object  
 4   Nationality        18207 non-null  object  
 5   Flag              18207 non-null  object  
 6   Overall            18207 non-null  int64   
 7   Potential          18207 non-null  int64   
 8   Club               17966 non-null  object  
 9   Club Logo           18207 non-null  object  
 10  Value              18207 non-null  object  
 11  Wage               18207 non-null  object  
 12  Special             18207 non-null  int64   
 13  Preferred Foot      18159 non-null  object  
 14  International Reputation  18159 non-null  float64 
 15  Weak Foot           18159 non-null  float64 
 16  Skill Moves          18159 non-null  float64 
 17  Work Rate            18159 non-null  object  
 18  Body Type            18159 non-null  object  
 19  Real Face            18159 non-null  object  
 20  Position              18147 non-null  object  
 21  Jersey Number         18147 non-null  float64 
 22  Joined              16654 non-null  object  
 23  Loaned From          1264 non-null   object  
 24  Contract Valid Until 17918 non-null  object  
 25  Height              18159 non-null  object  
 26  Weight               18159 non-null  object  
 27  LS                  16122 non-null  object  
 28  ST                  16122 non-null  object  
 29  RS                  16122 non-null  object  
 30  LW                  16122 non-null  object  
 31  LF                  16122 non-null  object  
 32  CF                  16122 non-null  object  
 33  RF                  16122 non-null  object  
 34  RW                  16122 non-null  object  
 35  LAM                 16122 non-null  object  
 36  CAM                 16122 non-null  object  
 37  RAM                 16122 non-null  object  
 38  LM                  16122 non-null  object
```

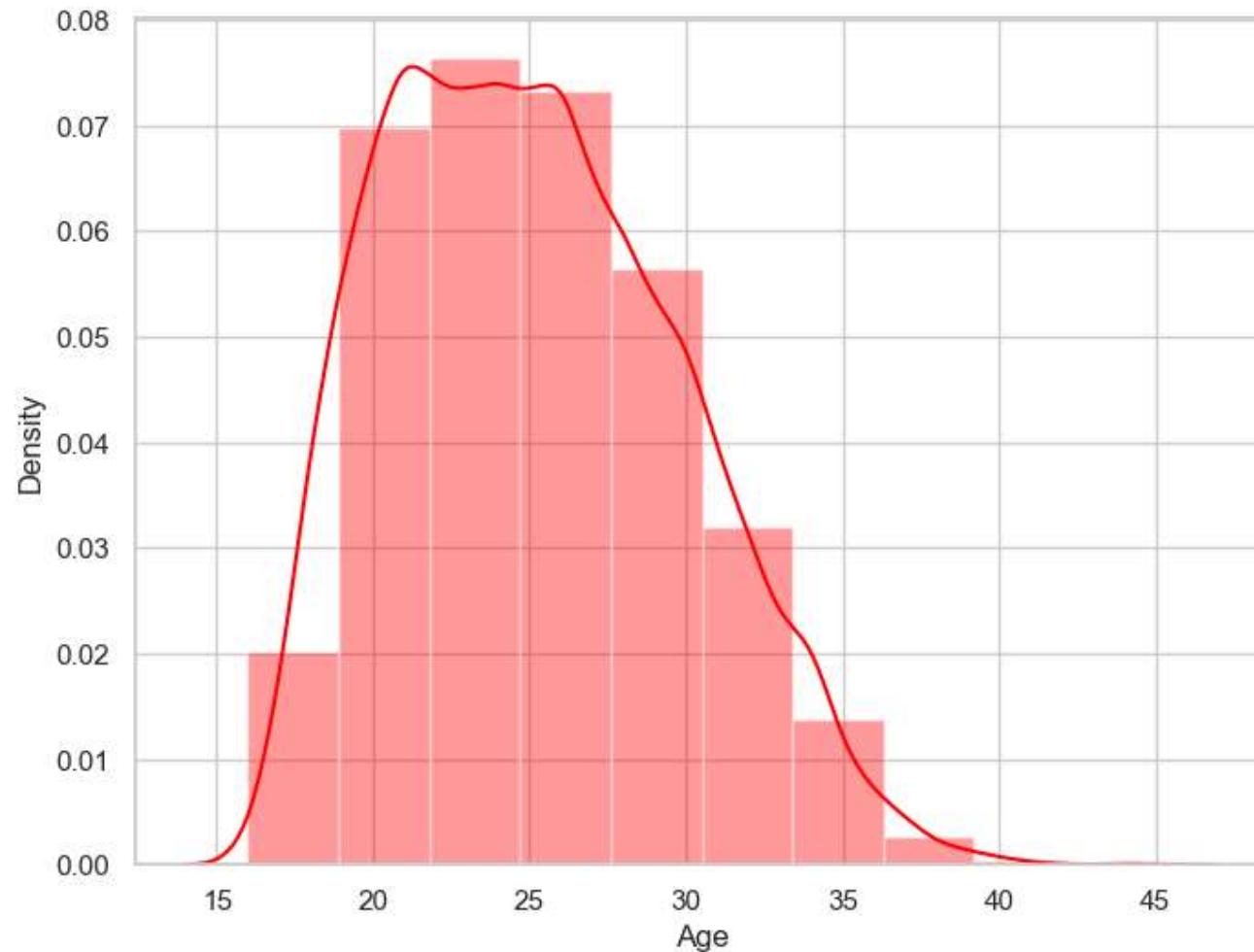
39	LCM	16122	non-null	object
40	CM	16122	non-null	object
41	RCM	16122	non-null	object
42	RM	16122	non-null	object
43	LWB	16122	non-null	object
44	LDM	16122	non-null	object
45	CDM	16122	non-null	object
46	RDM	16122	non-null	object
47	RWB	16122	non-null	object
48	LB	16122	non-null	object
49	LCB	16122	non-null	object
50	CB	16122	non-null	object
51	RCB	16122	non-null	object
52	RB	16122	non-null	object
53	Crossing	18159	non-null	float64
54	Finishing	18159	non-null	float64
55	HeadingAccuracy	18159	non-null	float64
56	ShortPassing	18159	non-null	float64
57	Volleys	18159	non-null	float64
58	Dribbling	18159	non-null	float64
59	Curve	18159	non-null	float64
60	FKAccuracy	18159	non-null	float64
61	LongPassing	18159	non-null	float64
62	BallControl	18159	non-null	float64
63	Acceleration	18159	non-null	float64
64	SprintSpeed	18159	non-null	float64
65	Agility	18159	non-null	float64
66	Reactions	18159	non-null	float64
67	Balance	18159	non-null	float64
68	ShotPower	18159	non-null	float64
69	Jumping	18159	non-null	float64
70	Stamina	18159	non-null	float64
71	Strength	18159	non-null	float64
72	LongShots	18159	non-null	float64
73	Aggression	18159	non-null	float64
74	Interceptions	18159	non-null	float64
75	Positioning	18159	non-null	float64
76	Vision	18159	non-null	float64
77	Penalties	18159	non-null	float64
78	Composure	18159	non-null	float64
79	Marking	18159	non-null	float64
80	StandingTackle	18159	non-null	float64
81	SlidingTackle	18159	non-null	float64
82	GKDiving	18159	non-null	float64

```
83 GKHandling           18159 non-null float64
84 GKKicking            18159 non-null float64
85 GKPositioning        18159 non-null float64
86 GKReflexes           18159 non-null float64
87 Release Clause      16643 non-null object
dtypes: float64(38), int64(5), object(45)
memory usage: 12.4+ MB
```

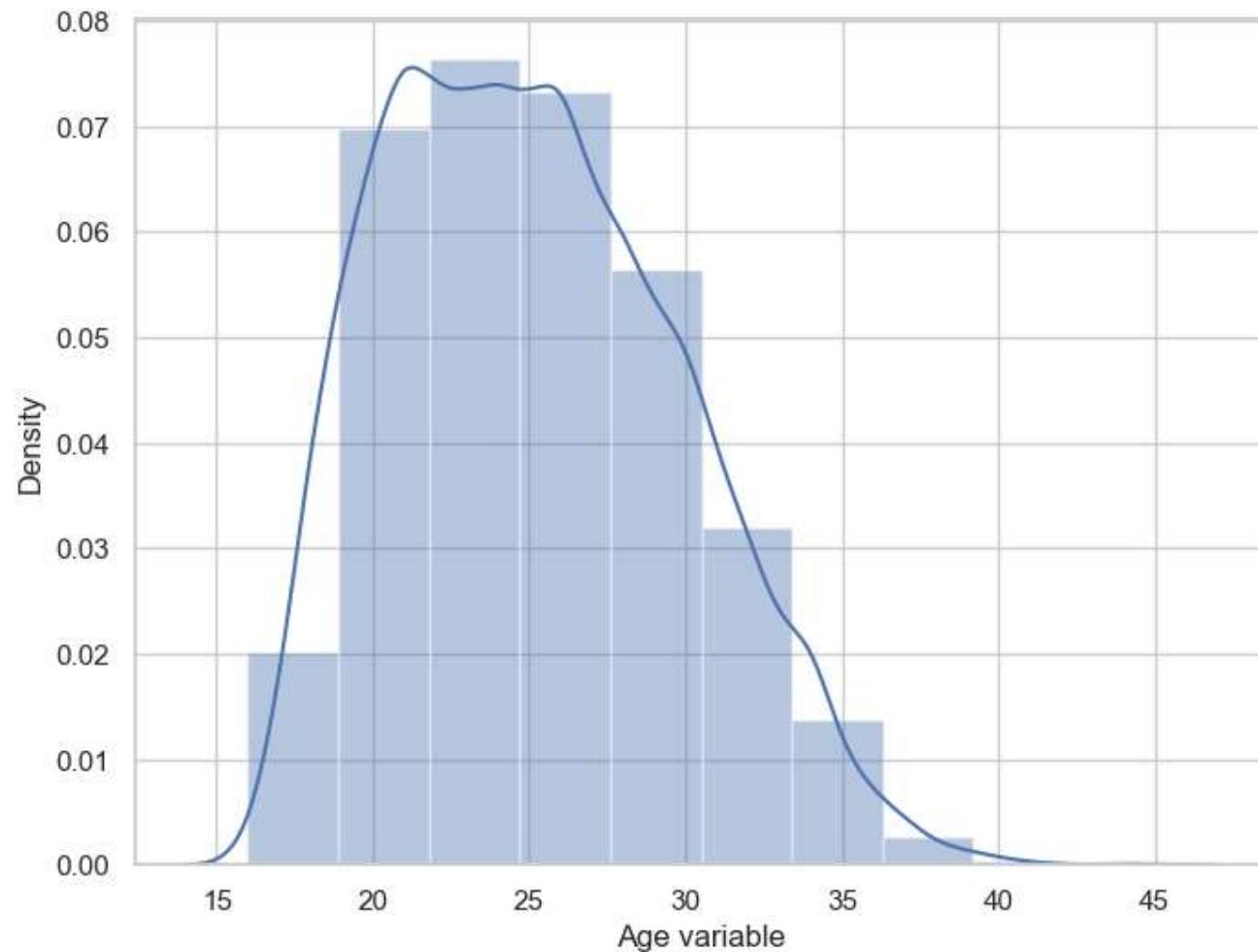
In [7]: `fifa19['Body Type'].value_counts()`

```
Out[7]: Normal          10595
Lean              6417
Stocky            1140
Messi             1
C. Ronaldo       1
Neymar            1
Courtois          1
PLAYER_BODY_TYPE_25 1
Shaqiri           1
Akinfenwa         1
Name: Body Type, dtype: int64
```

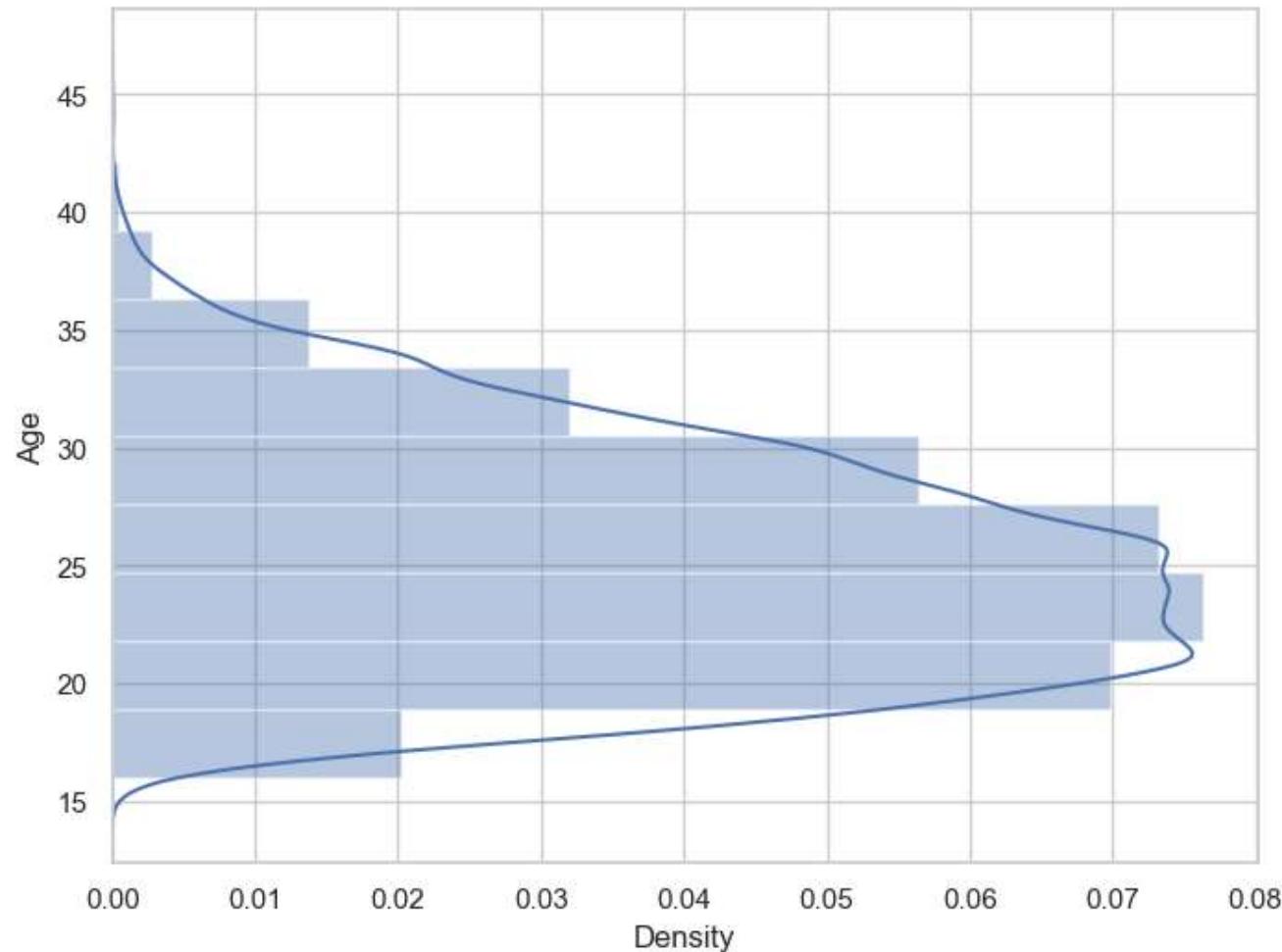
```
In [8]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
ax = sns.distplot(x, bins=10,color='red')
plt.show()
```



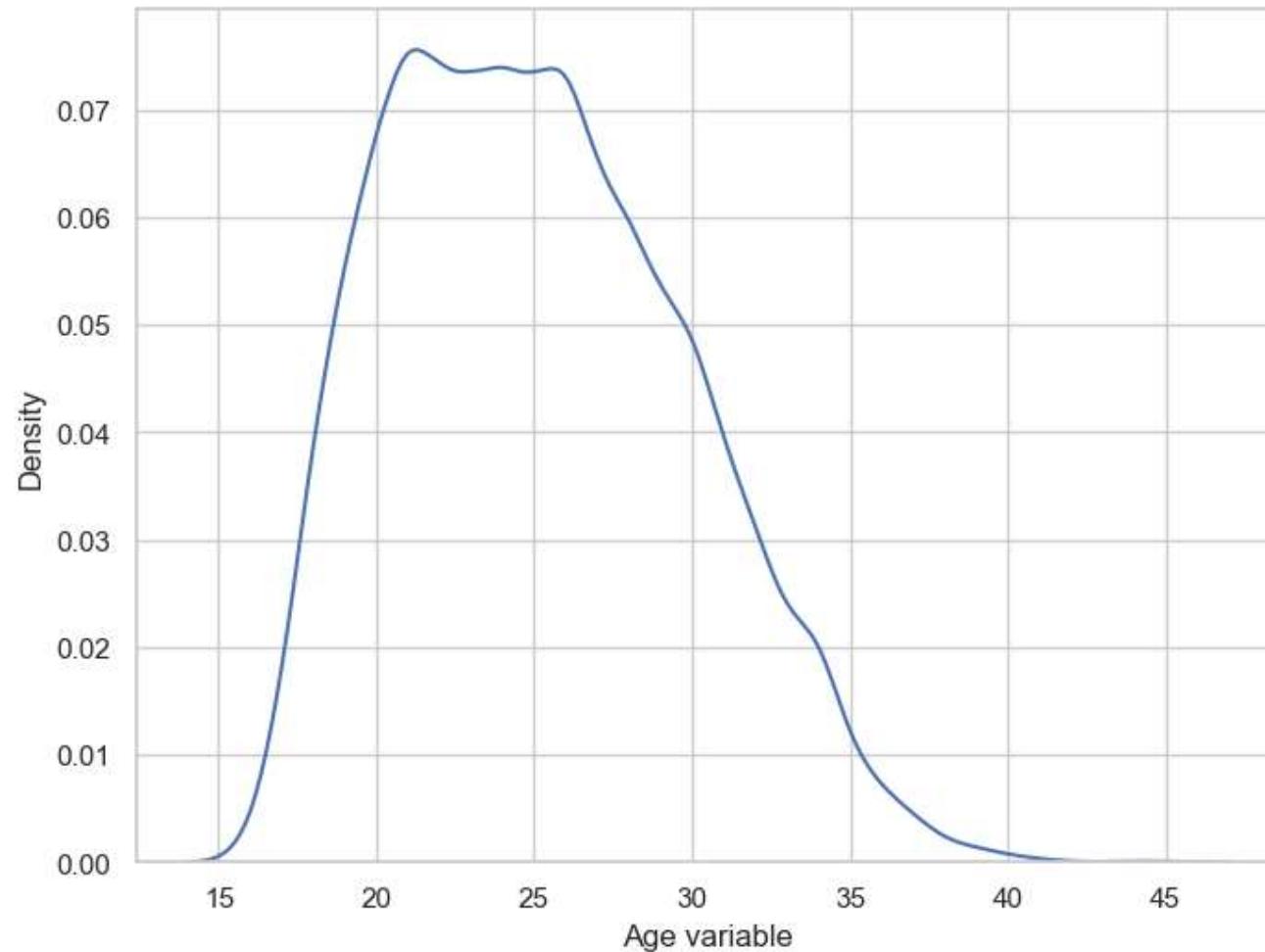
```
In [9]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
x = pd.Series(x, name="Age variable")
ax = sns.distplot(x, bins=10)
plt.show()
```



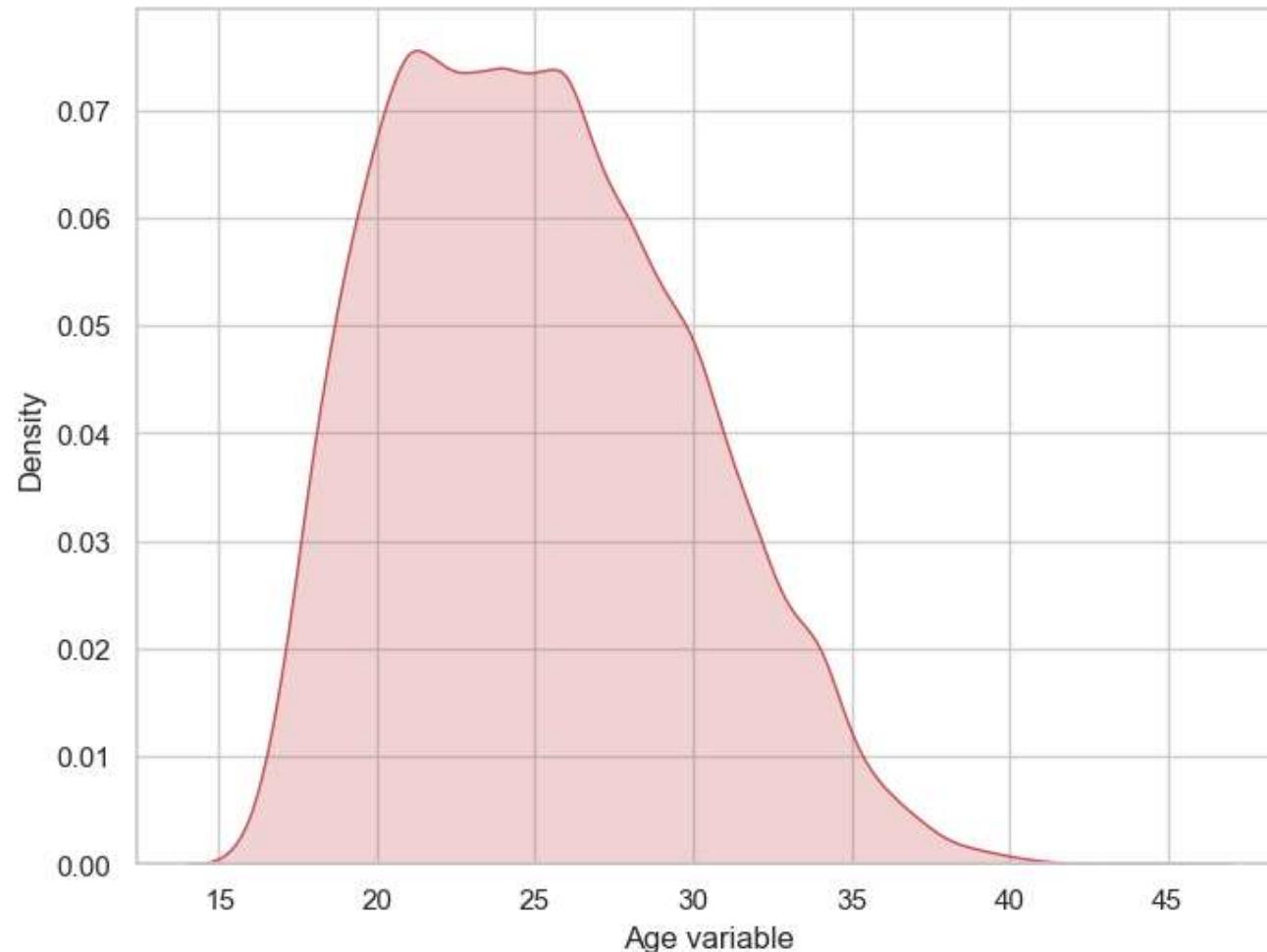
```
In [10]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
ax = sns.distplot(x, bins=10, vertical = True)
plt.show()
```



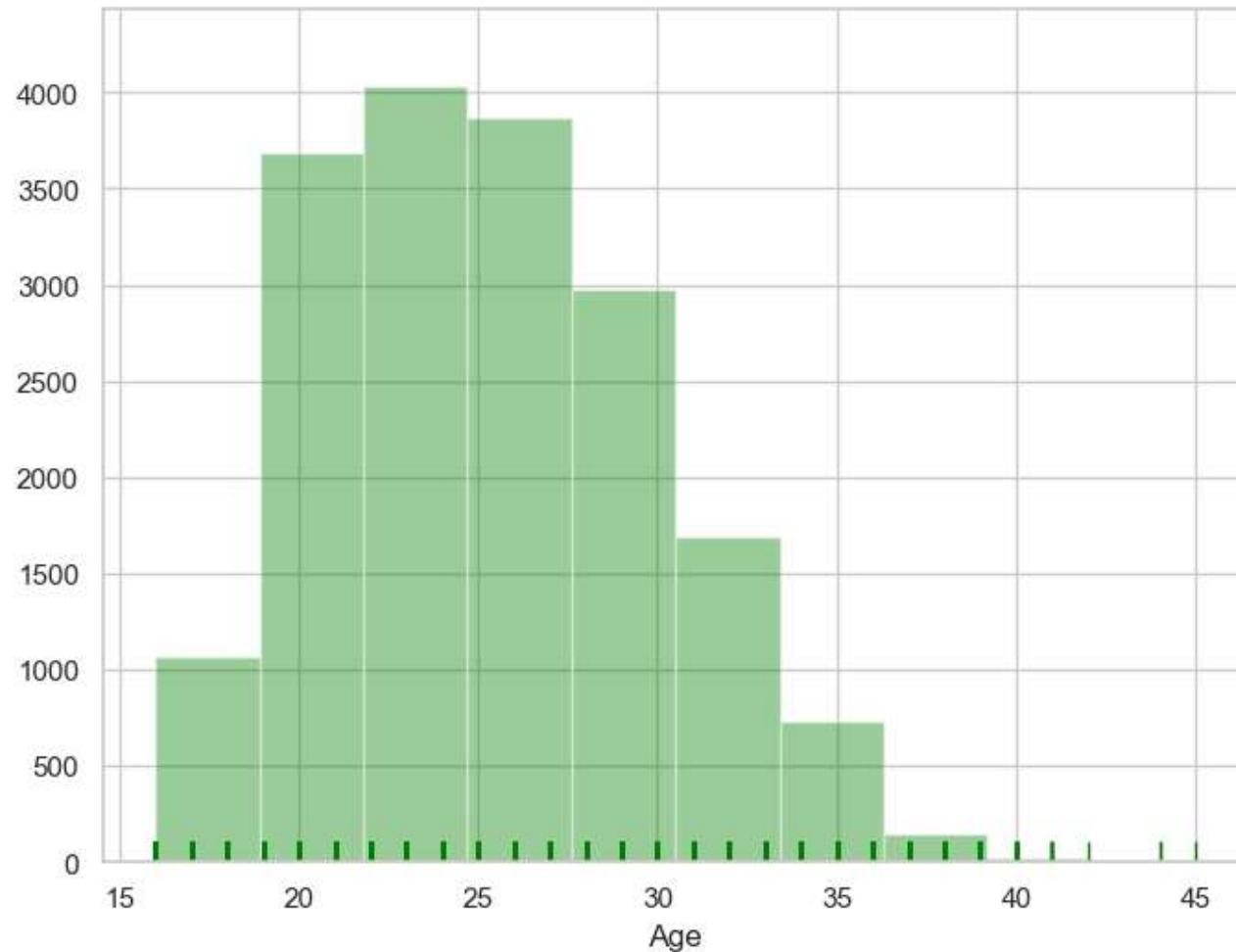
```
In [11]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
x = pd.Series(x, name="Age variable")
ax = sns.kdeplot(x)
plt.show()
```



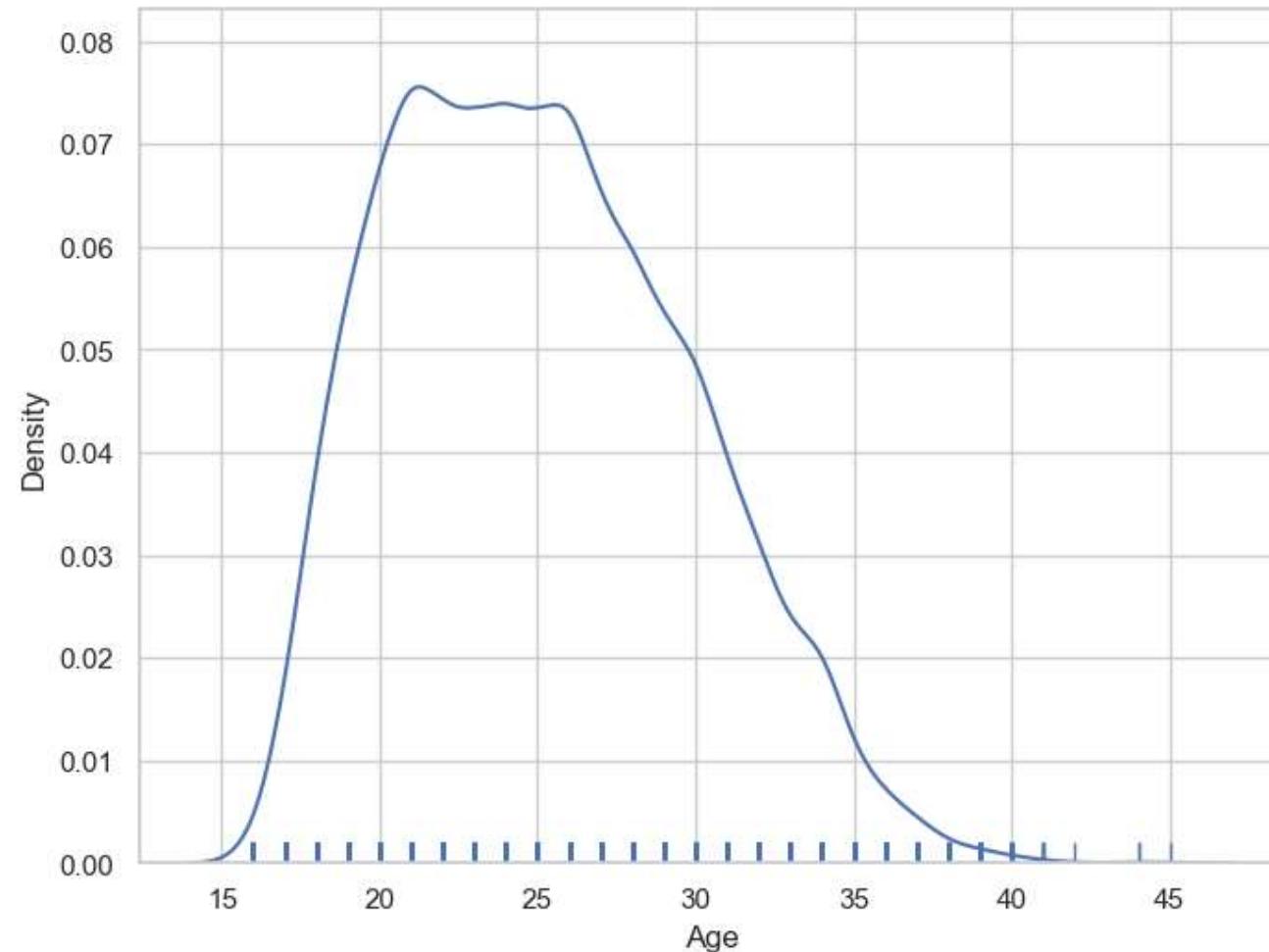
```
In [12]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
x = pd.Series(x, name="Age variable")
ax = sns.kdeplot(x, shade=True, color='r')
plt.show()
```



```
In [13]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
ax = sns.distplot(x, kde=False, rug=True, bins=10,color='green')
plt.show()
```



```
In [14]: f, ax = plt.subplots(figsize=(8,6))
x = fifa19['Age']
ax = sns.distplot(x, hist=False, rug=True, bins=10)
plt.show()
```



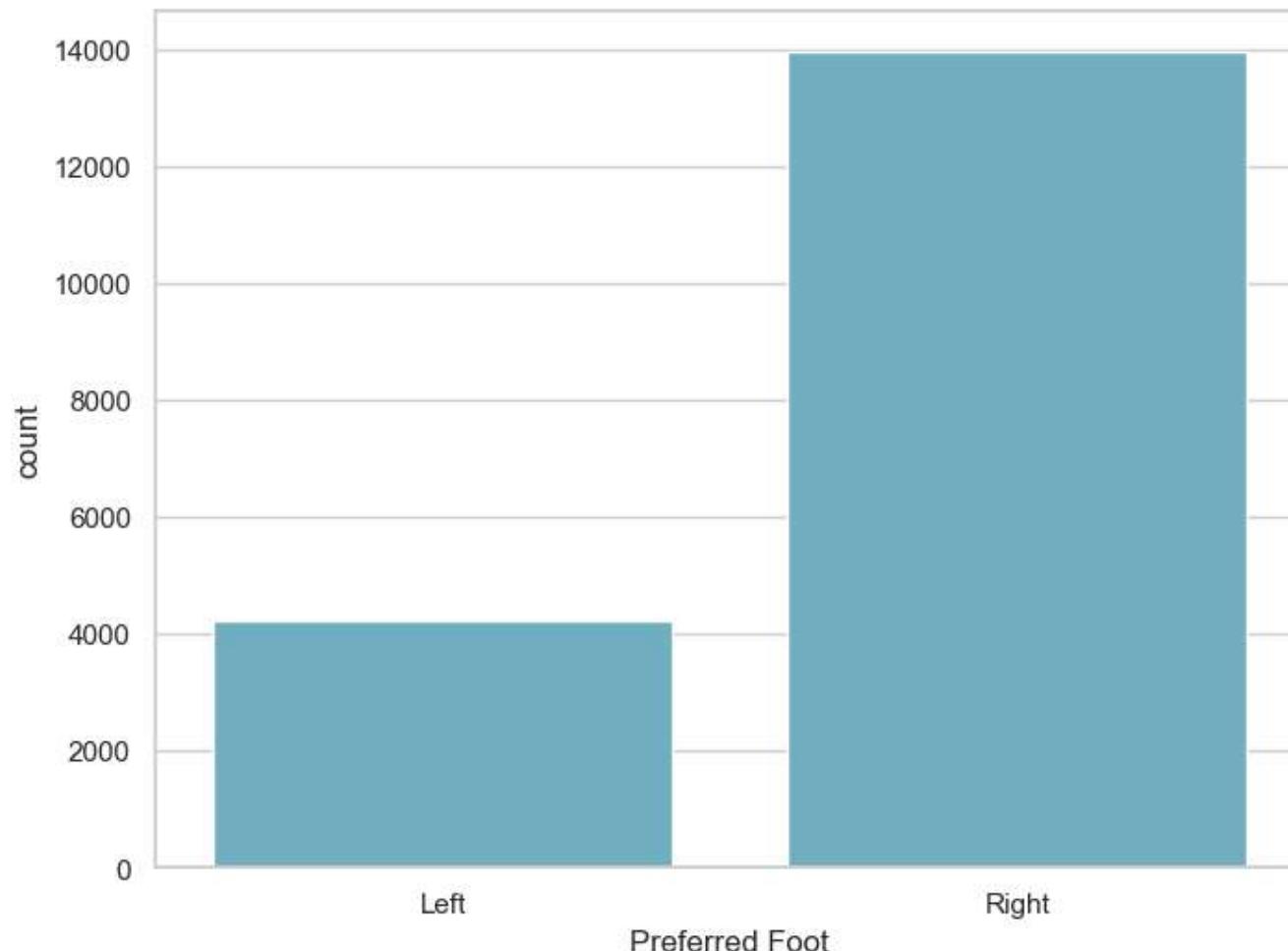
```
In [15]: fifa19['Preferred Foot'].nunique()
```

Out[15]: 2

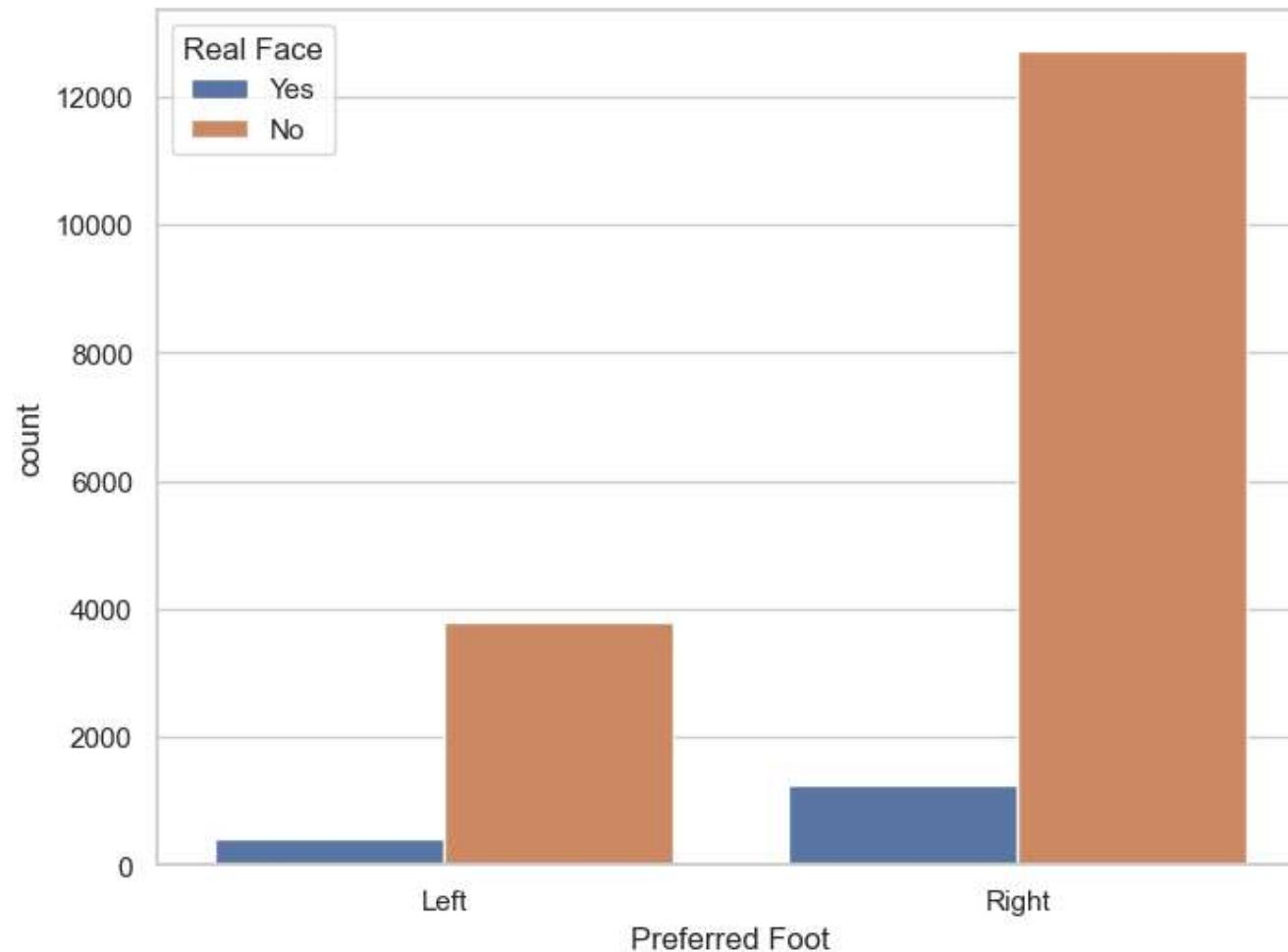
```
In [16]: ⏷ fifa19['Preferred Foot'].value_counts()
```

```
Out[16]: Right    13948  
Left      4211  
Name: Preferred Foot, dtype: int64
```

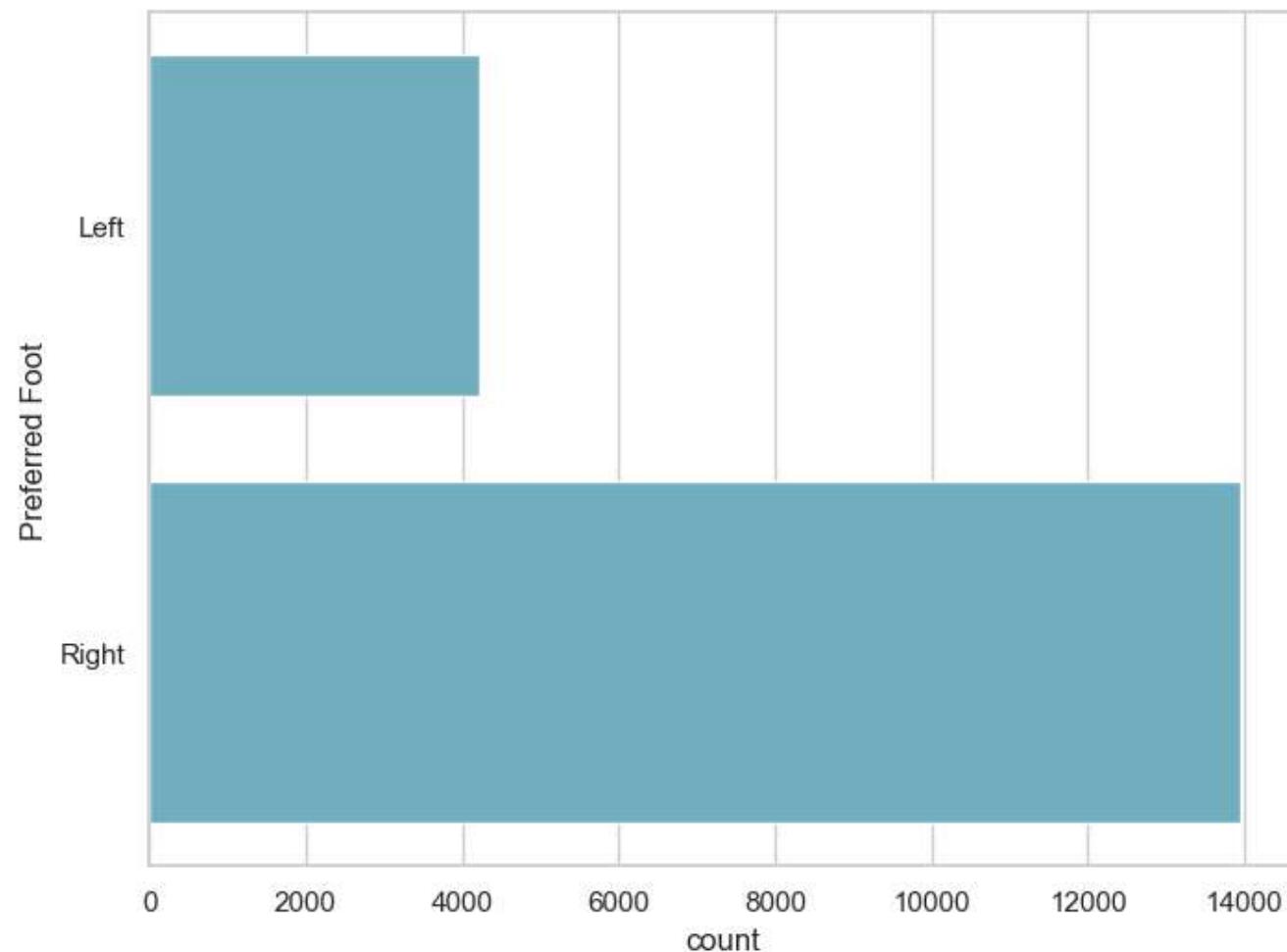
```
In [17]: ⏷ f, ax = plt.subplots(figsize=(8, 6))  
sns.countplot(x="Preferred Foot", data=fifa19, color="c")  
plt.show()
```



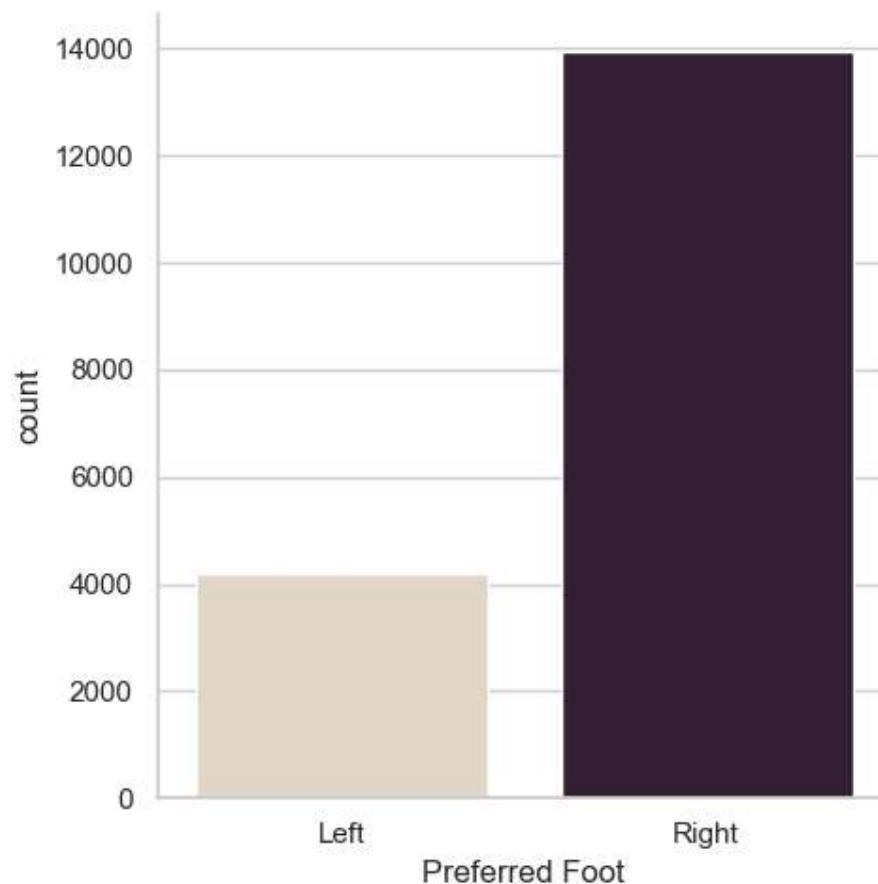
```
In [18]: f, ax = plt.subplots(figsize=(8, 6))
sns.countplot(x="Preferred Foot", hue="Real Face", data=fifa19)
plt.show()
```



```
In [19]: f, ax = plt.subplots(figsize=(8, 6))
sns.countplot(y="Preferred Foot", data=fifa19, color="c")
plt.show()
```



```
In [20]: g = sns.catplot(x="Preferred Foot", kind="count", palette="ch:.25", data=fifa19)
```



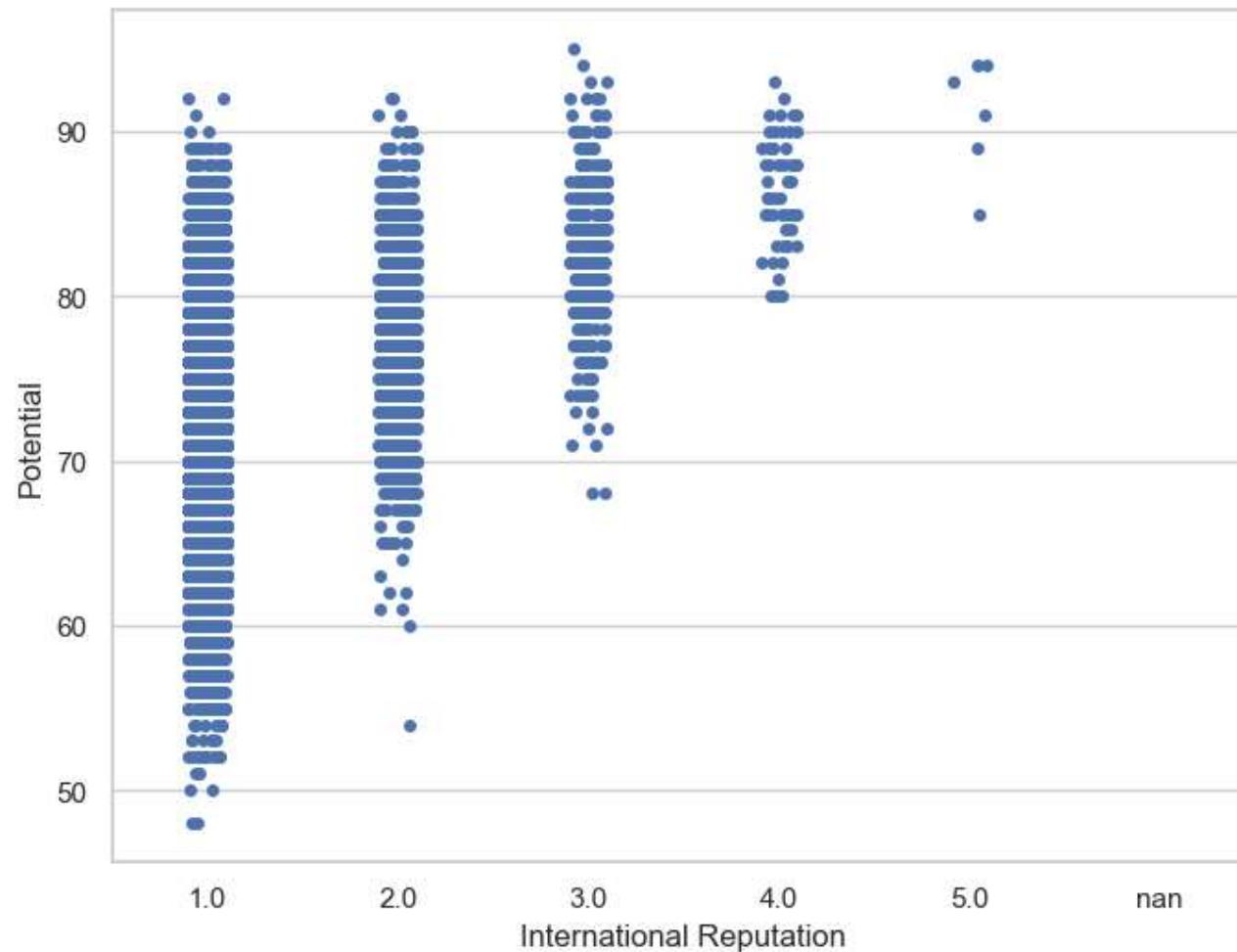
```
In [21]: fifa19['International Reputation'].nunique()
```

```
Out[21]: 5
```

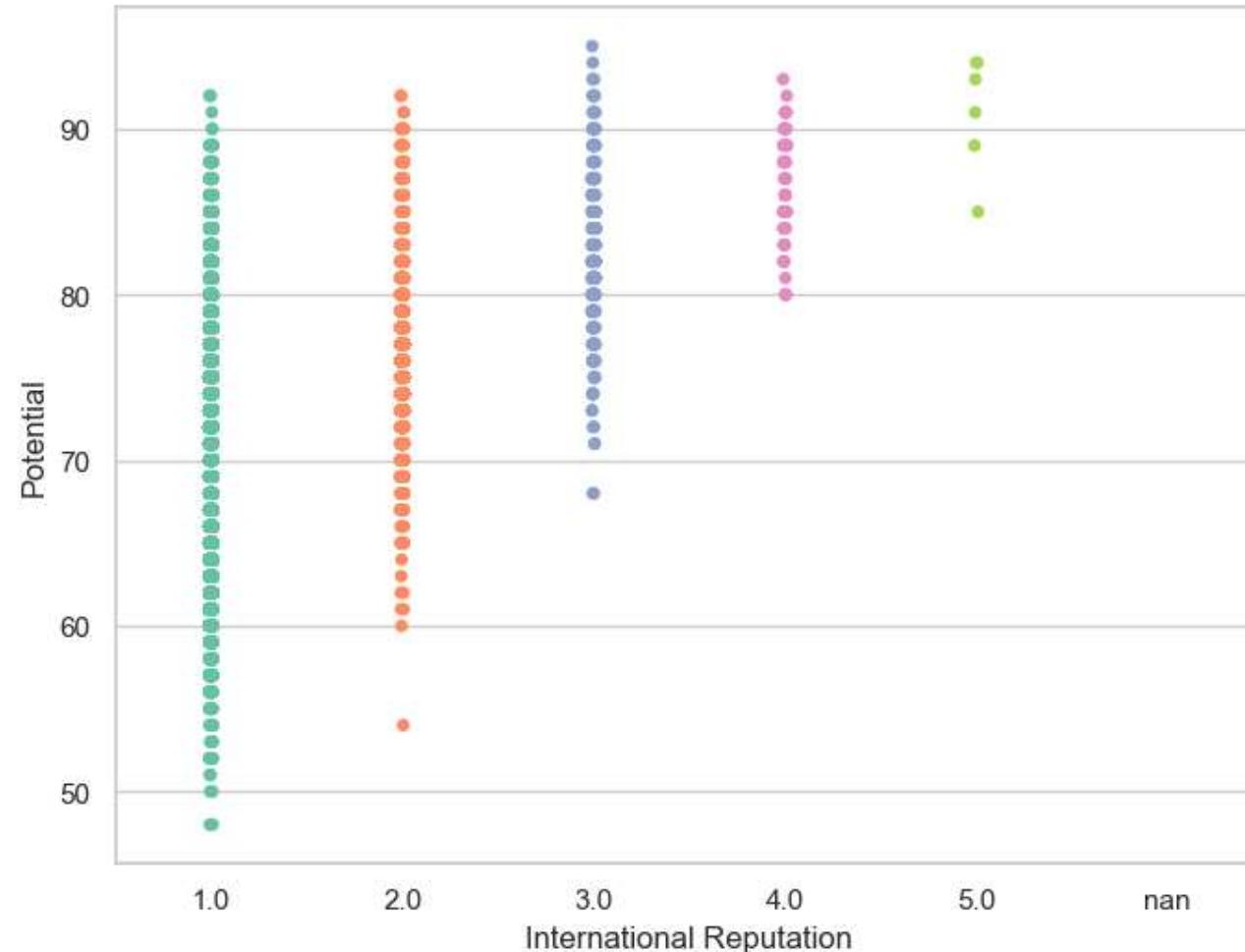
```
In [22]: ⏎ fifa19['International Reputation'].value_counts()
```

```
Out[22]: 1.0    16532  
2.0     1261  
3.0      309  
4.0      51  
5.0       6  
Name: International Reputation, dtype: int64
```

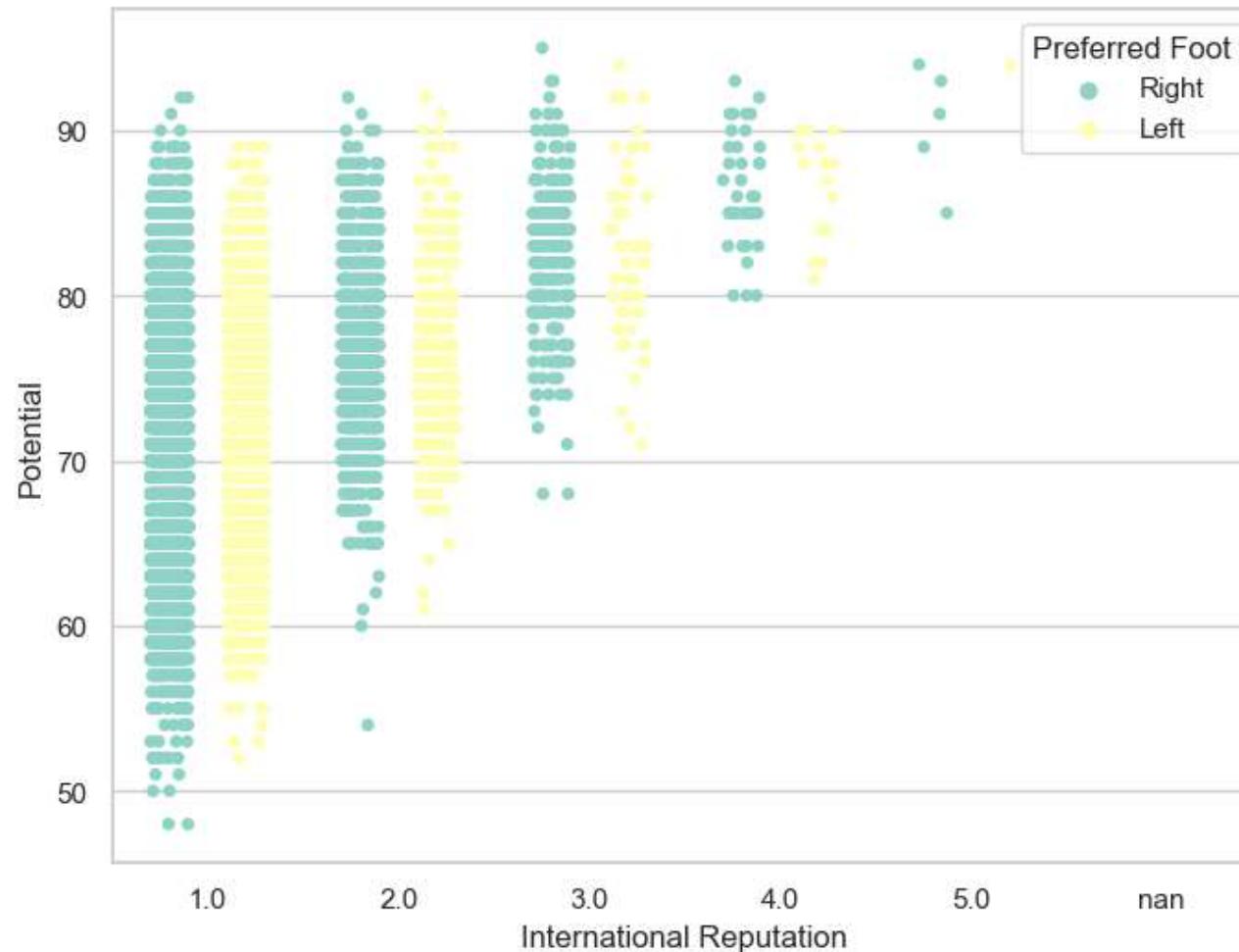
```
In [23]: f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", data=fifa19)
plt.show()
```



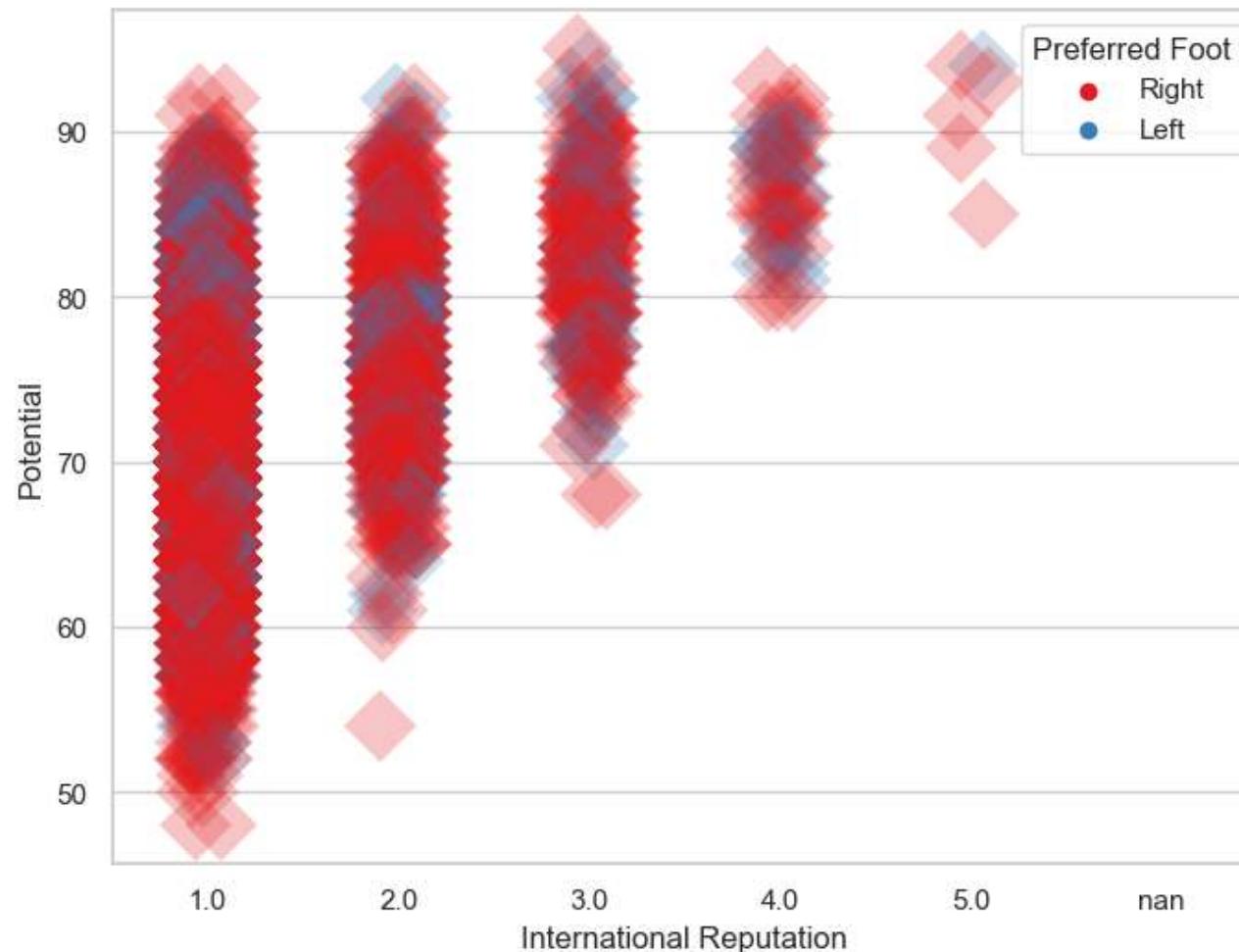
```
In [24]: f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", data=fifa19, jitter=0.01, palette="Set2")
plt.show()
```



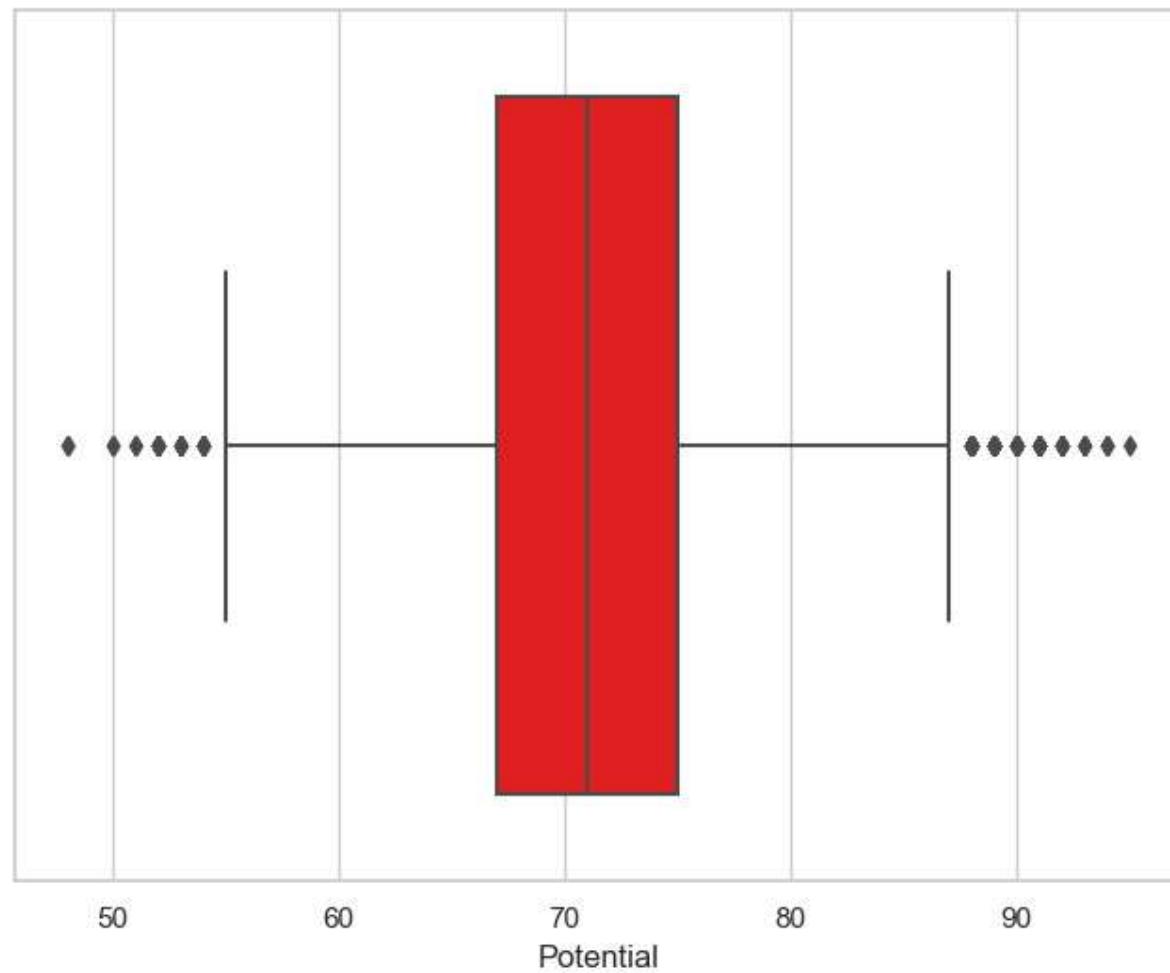
```
In [25]: f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", hue="Preferred Foot",
               data=fifa19, jitter=0.2, palette="Set3", dodge=True)
plt.show()
```



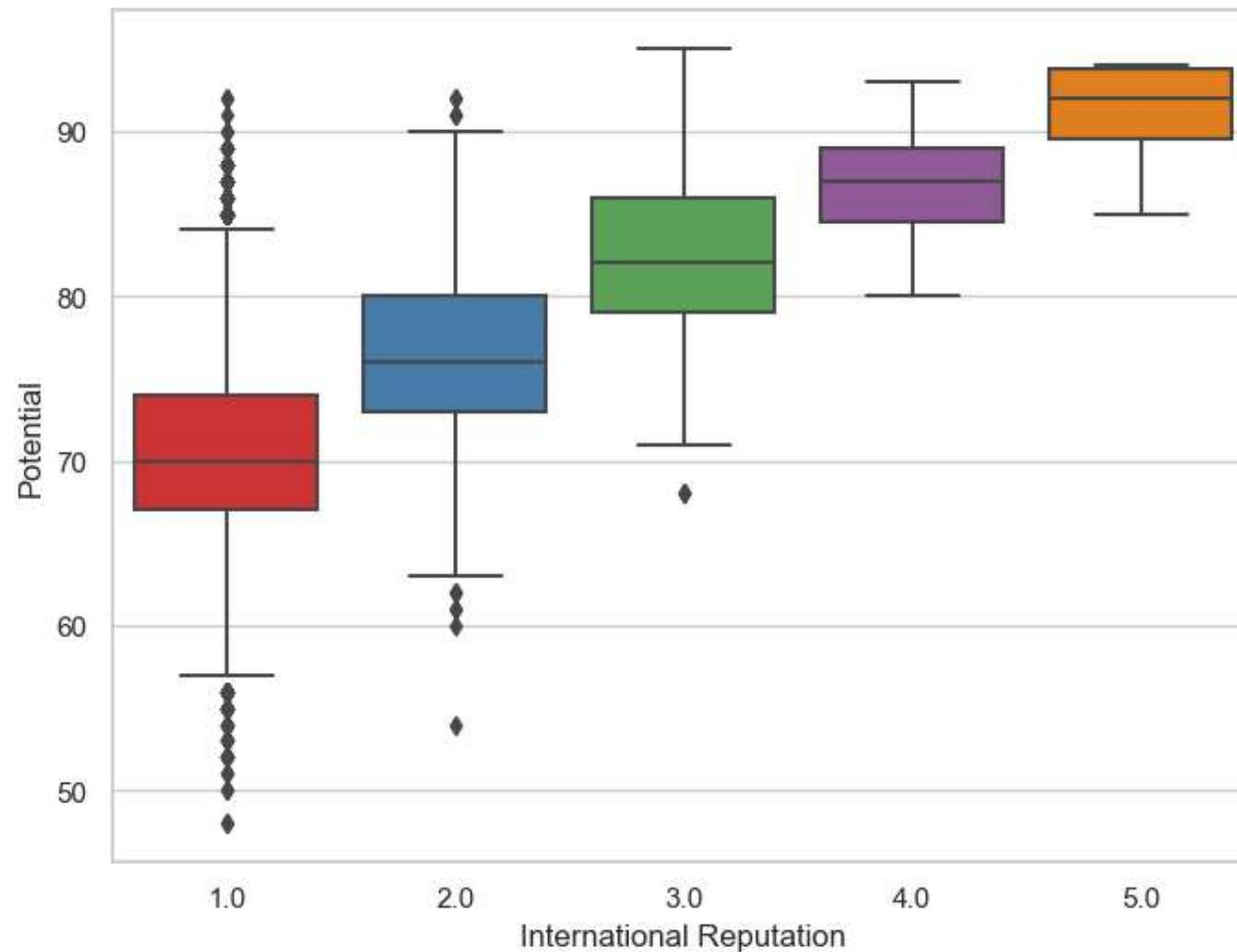
```
In [26]: f, ax = plt.subplots(figsize=(8, 6))
sns.stripplot(x="International Reputation", y="Potential", hue="Preferred Foot",
               data=fifa19, palette="Set1", size=20, marker="D",
               edgecolor="gray", alpha=.25)
plt.show()
```



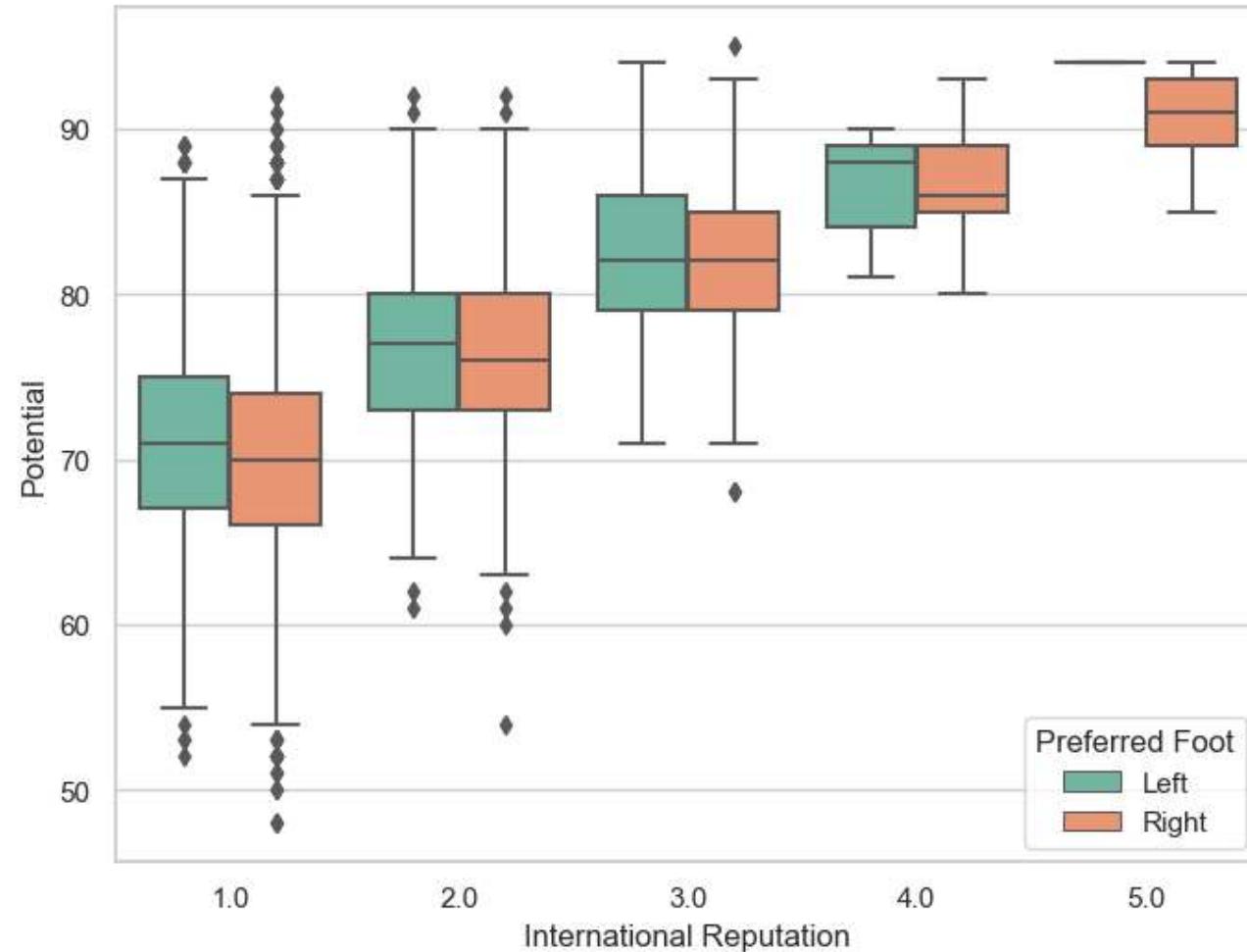
```
In [27]: f, ax = plt.subplots(figsize=(8, 6))
sns.boxplot(x=fifa19["Potential"],color='red')
plt.show()
```



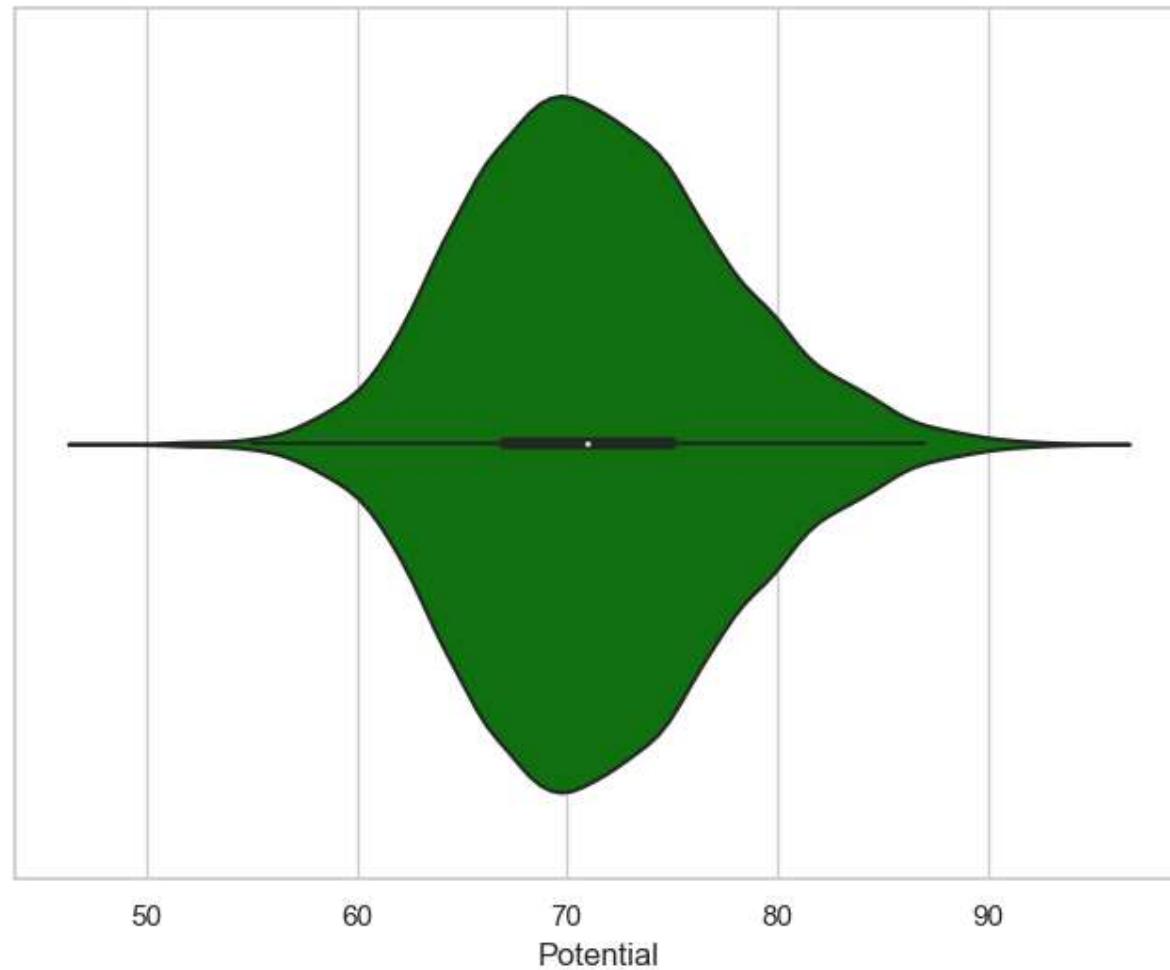
```
In [28]: f, ax = plt.subplots(figsize=(8, 6))
sns.boxplot(x="International Reputation", y="Potential", data=fifa19, palette="Set1")
plt.show()
```



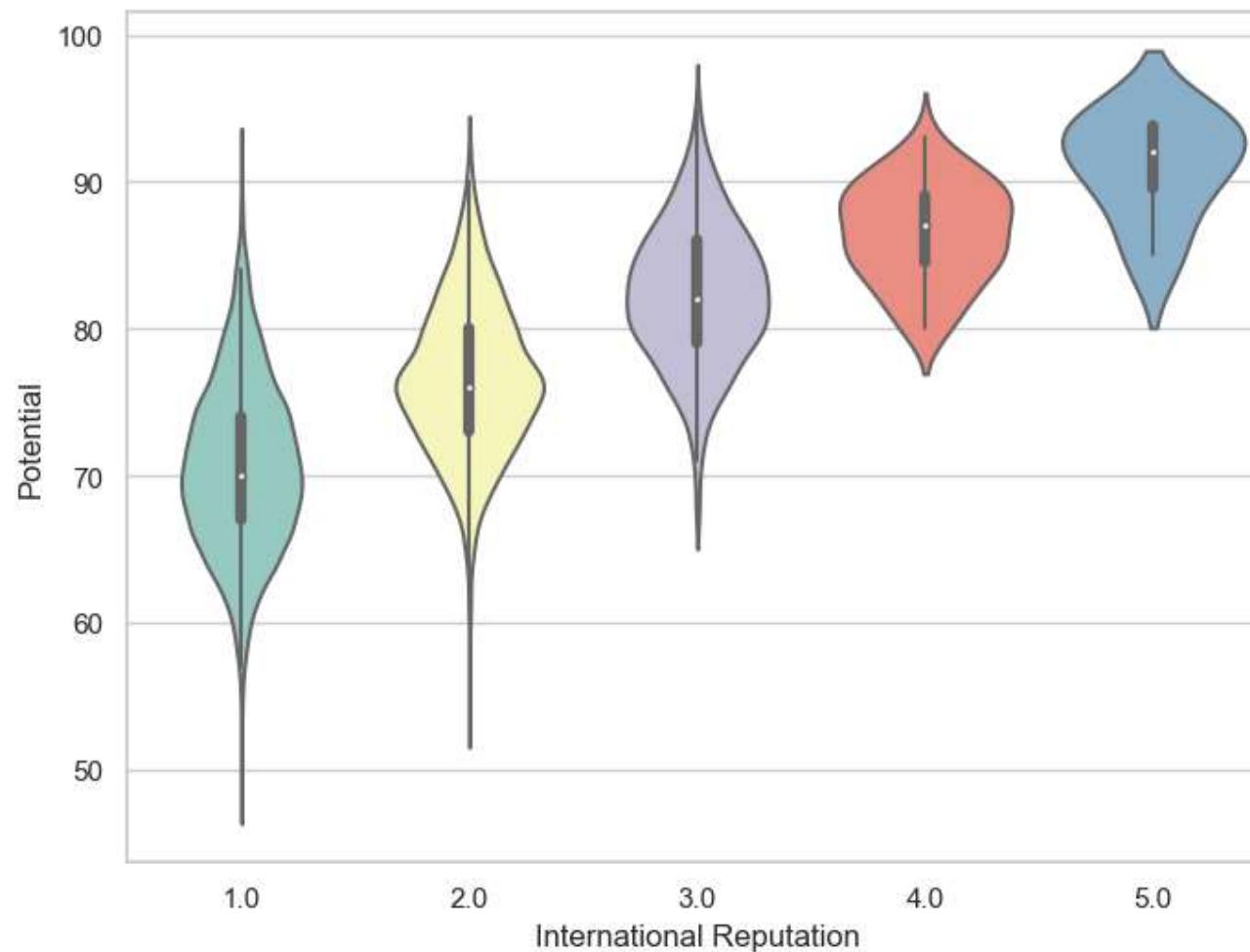
```
In [29]: f, ax = plt.subplots(figsize=(8, 6))
sns.boxplot(x="International Reputation", y="Potential", hue="Preferred Foot", data=fifa19, palette="Set2")
plt.show()
```



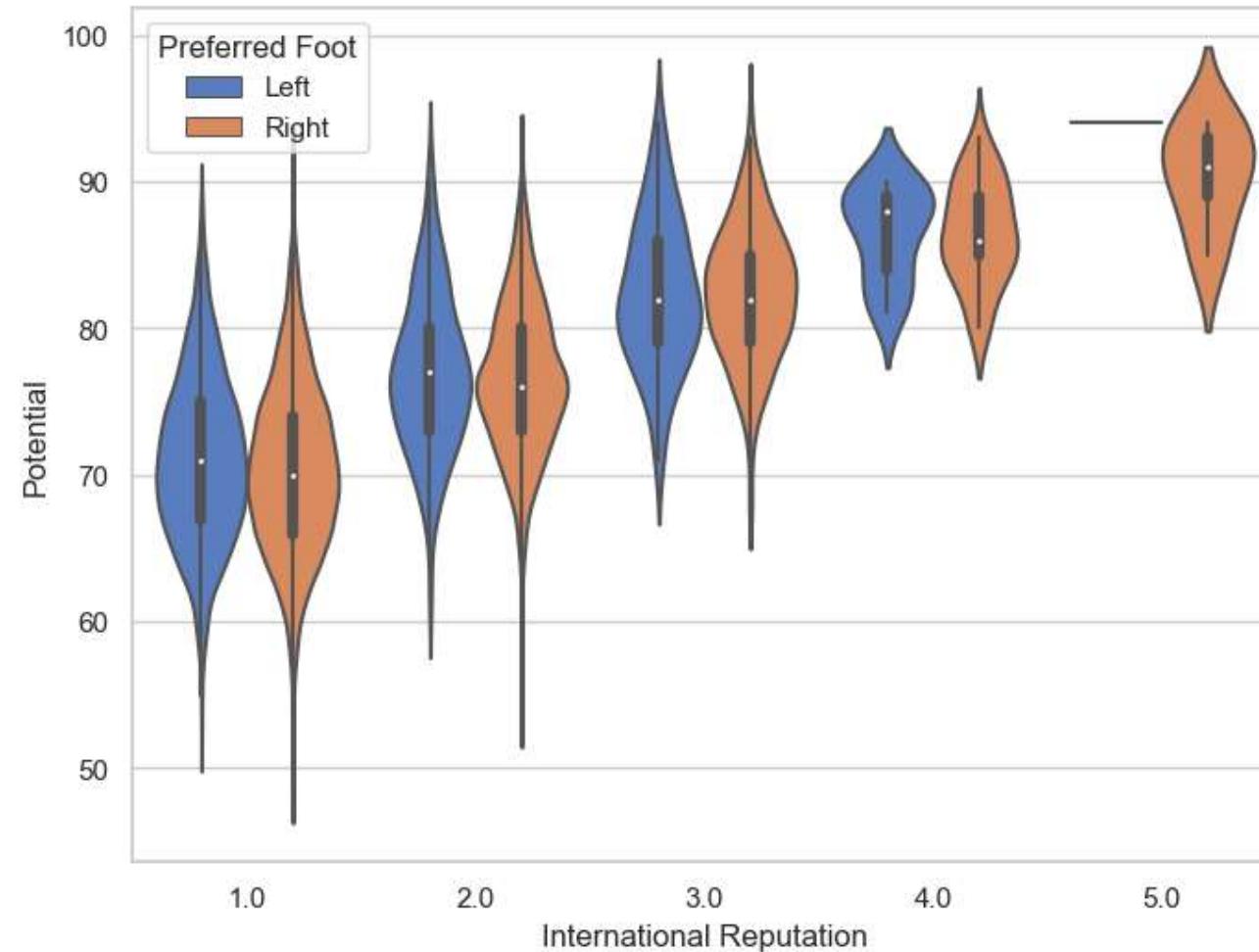
```
In [30]: f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x=fifa19["Potential"], color='green')
plt.show()
```



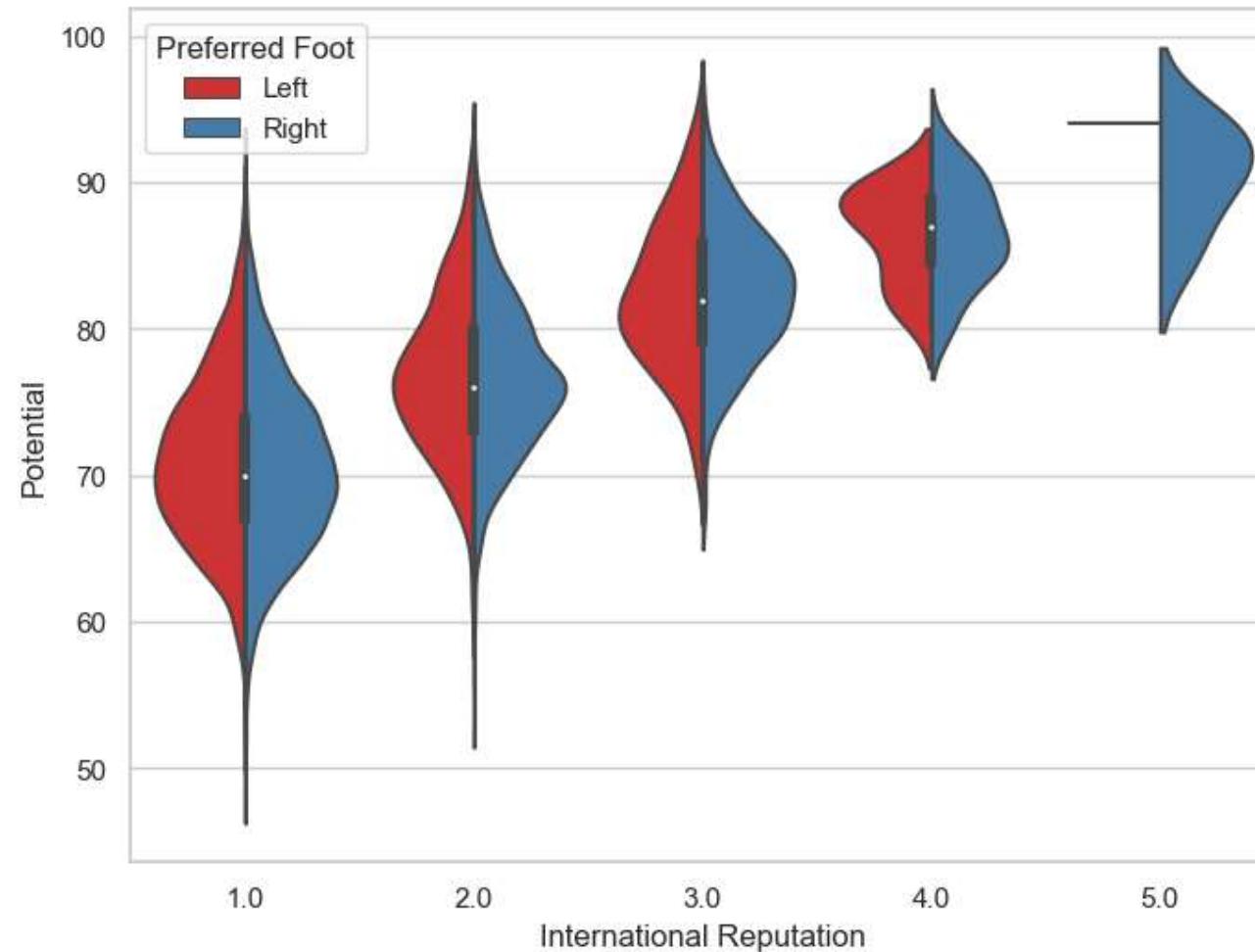
```
In [31]: f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x="International Reputation", y="Potential", data=fifa19, palette="Set3")
plt.show()
```



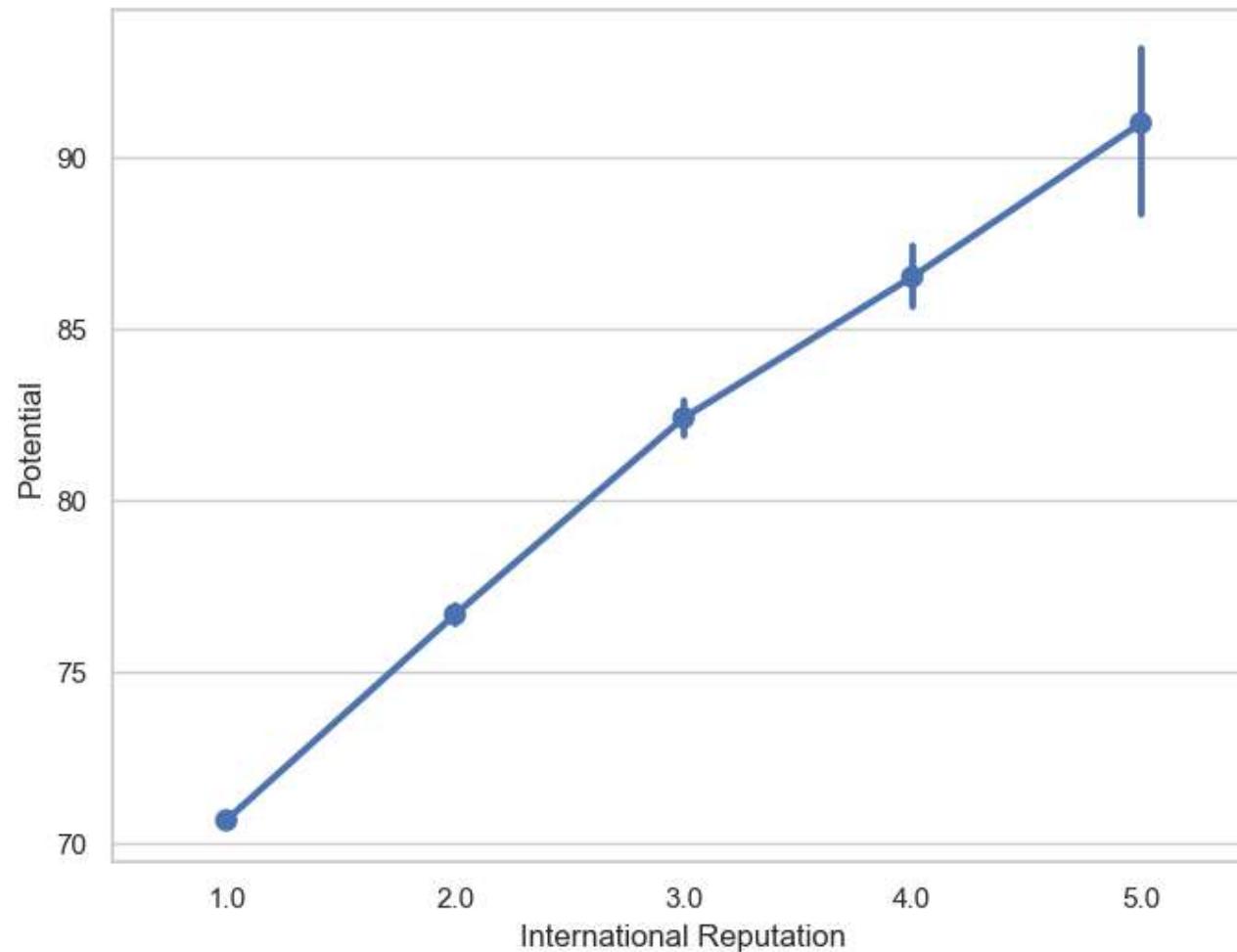
```
In [32]: f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x="International Reputation", y="Potential", hue="Preferred Foot", data=fifa19, palette="muted")
plt.show()
```



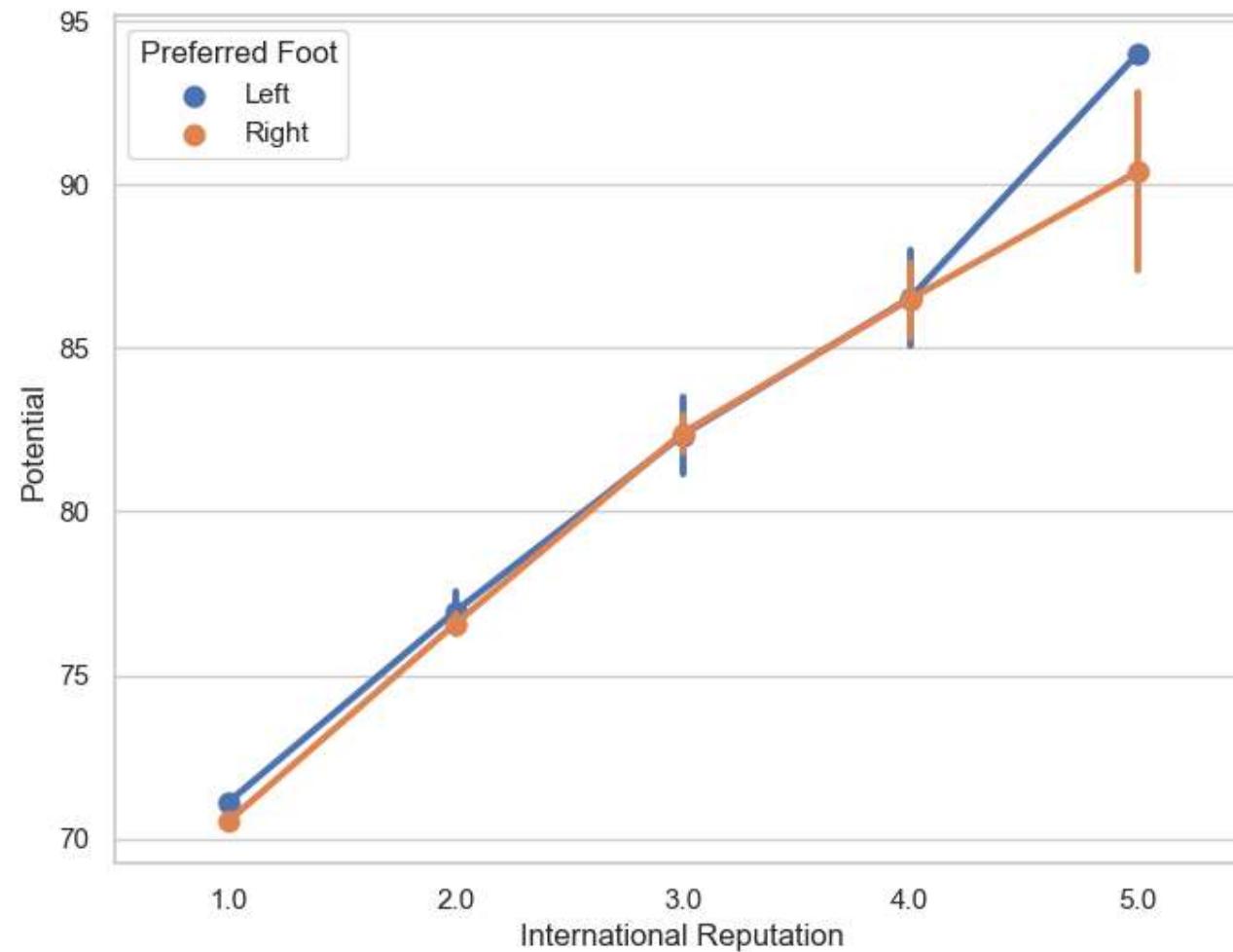
```
In [33]: f, ax = plt.subplots(figsize=(8, 6))
sns.violinplot(x="International Reputation", y="Potential", hue="Preferred Foot",
                data=fifa19, palette="Set1", split=True)
plt.show()
```



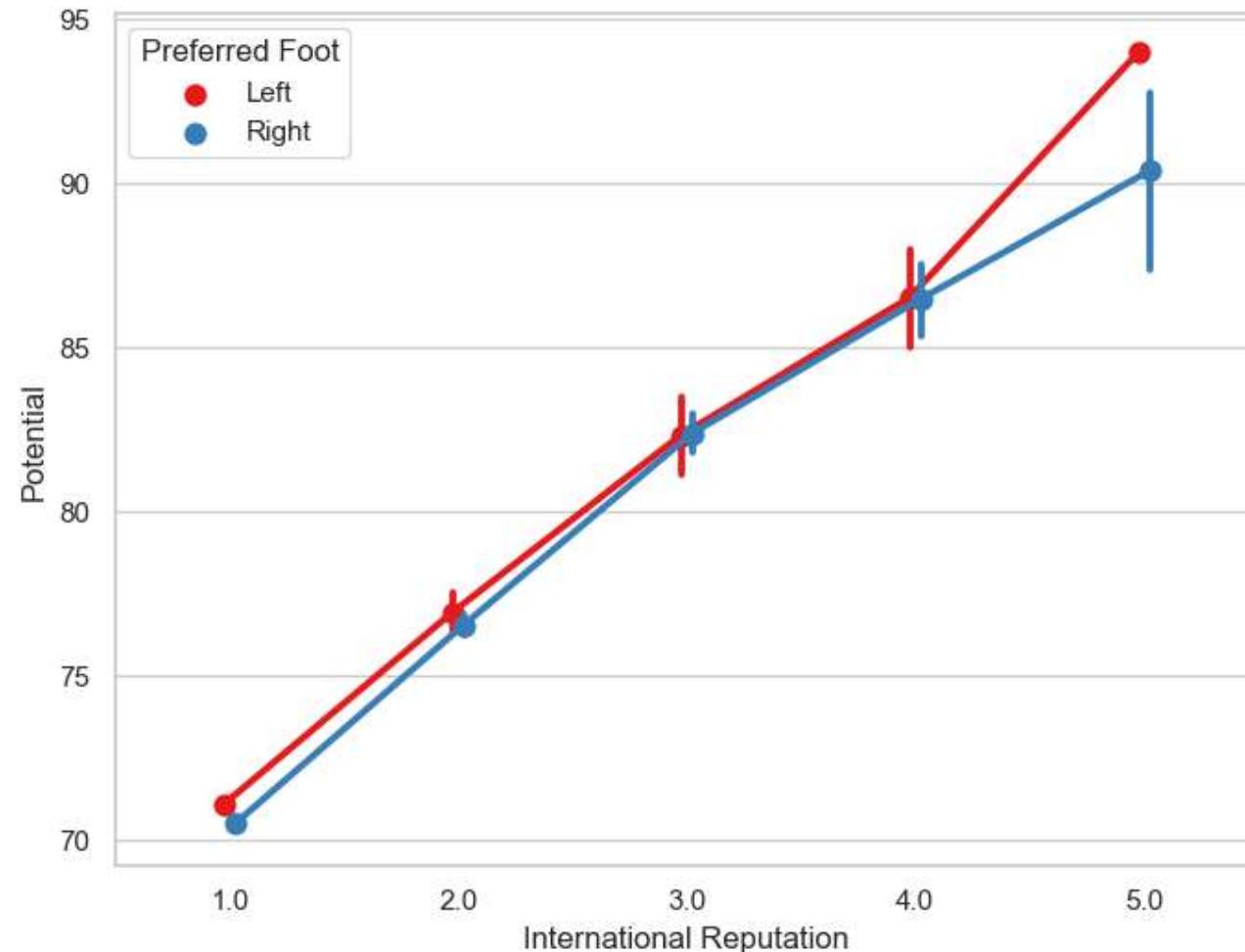
```
In [34]: f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", data=fifa19)
plt.show()
```



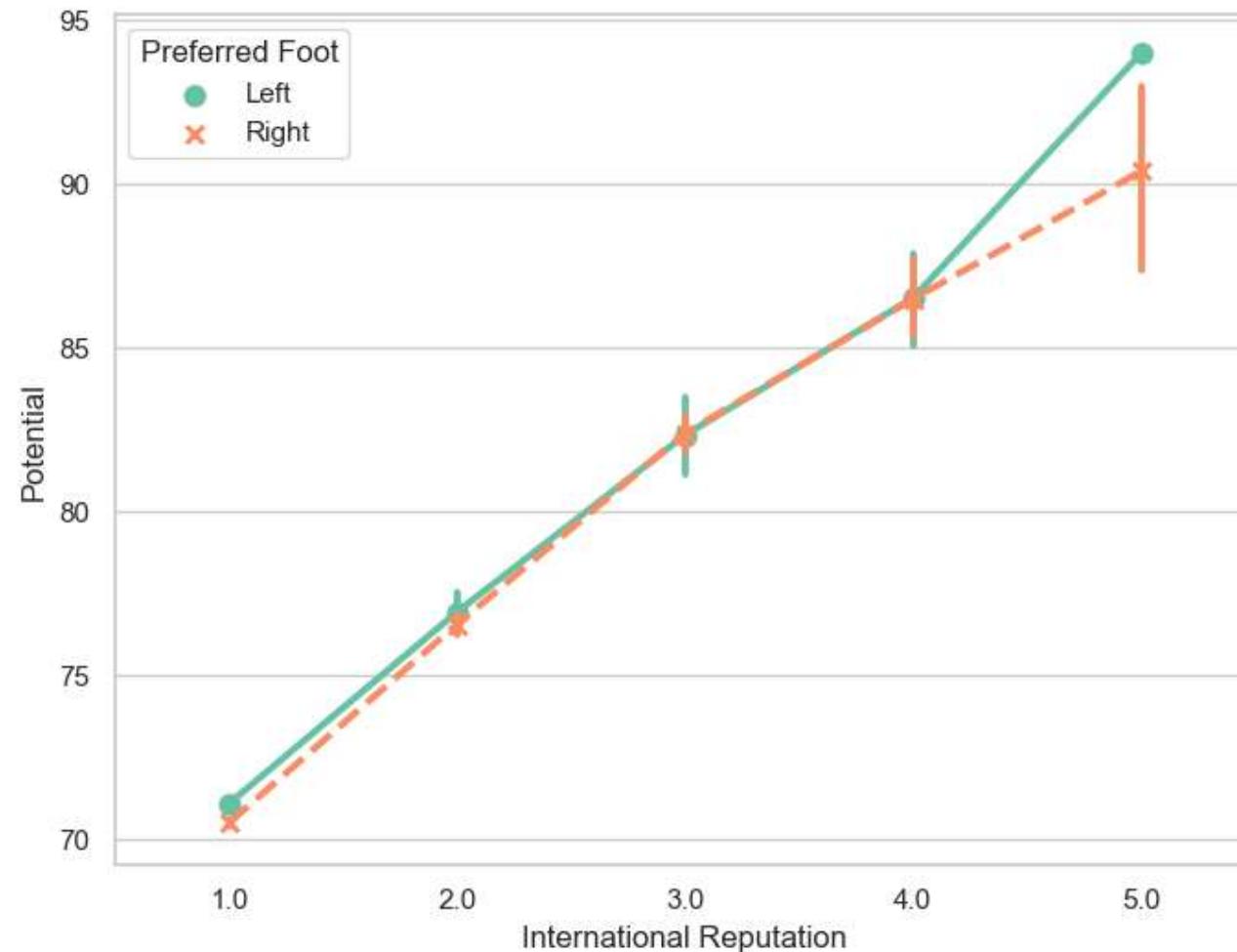
```
In [35]: f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", hue="Preferred Foot", data=fifa19)
plt.show()
```



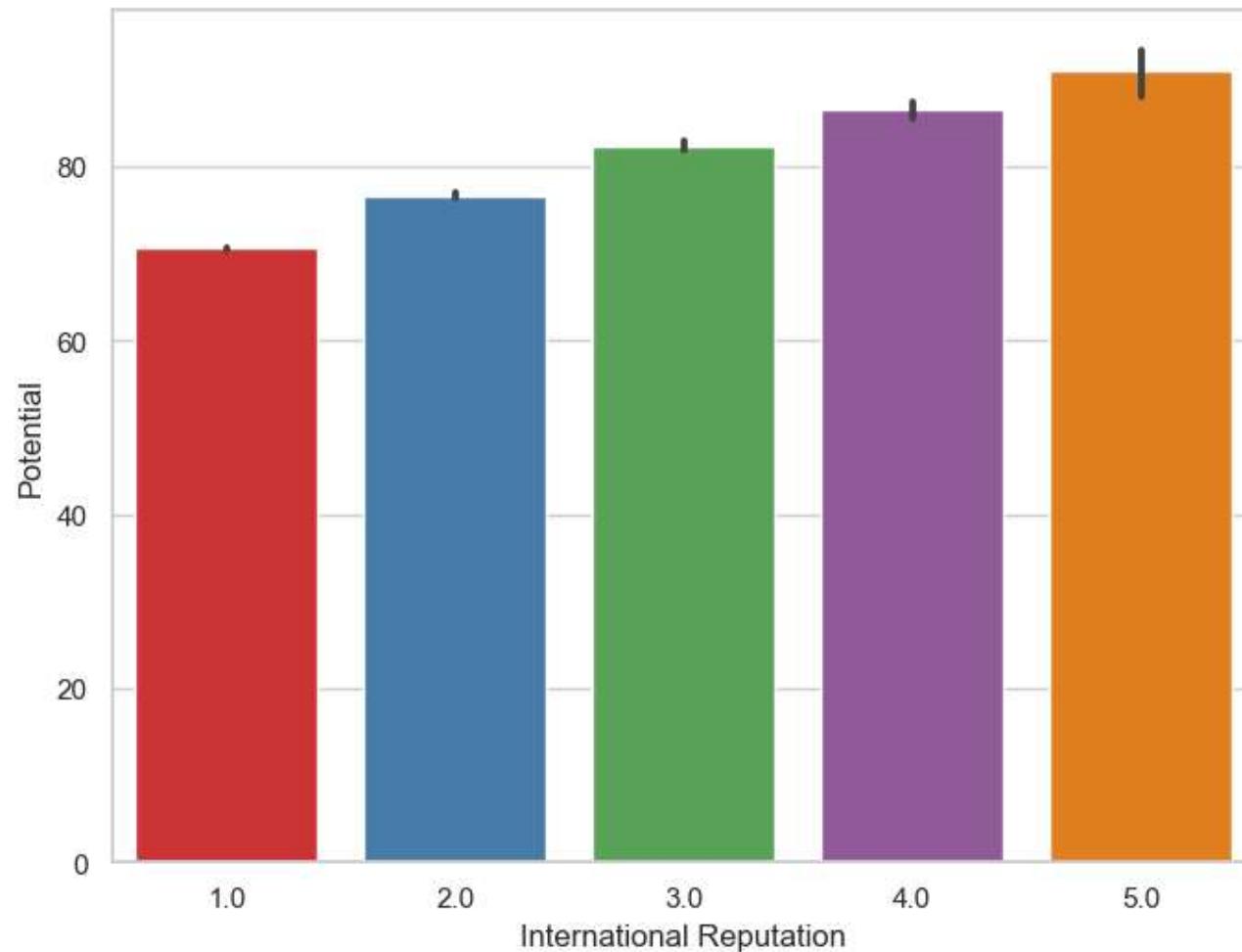
```
In [36]: f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", hue="Preferred Foot", data=fifa19, dodge=True, palette="Set1")
plt.show()
```



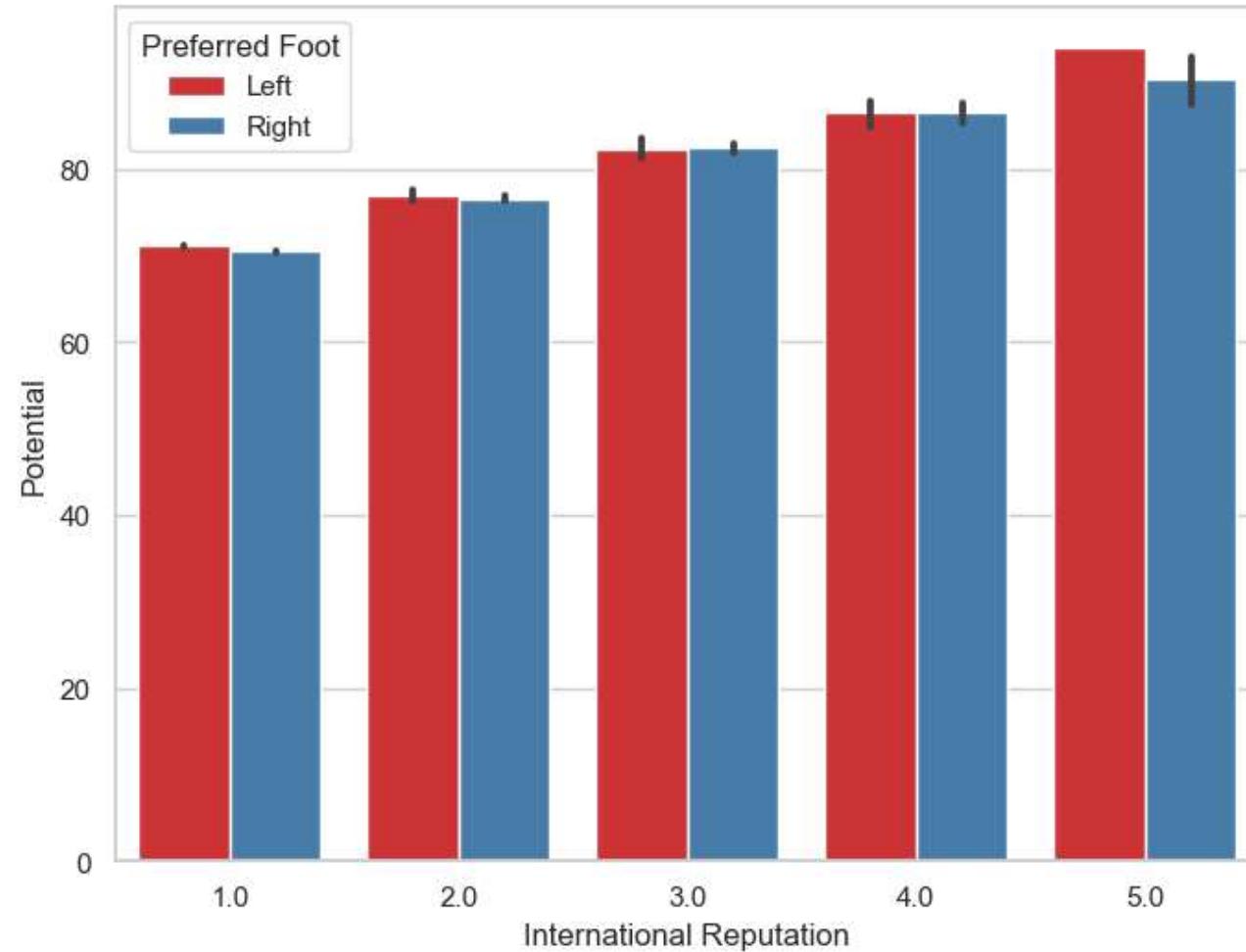
```
In [37]: f, ax = plt.subplots(figsize=(8, 6))
sns.pointplot(x="International Reputation", y="Potential", hue="Preferred Foot",
               data=fifa19, markers=["o", "x"], linestyles=["-", "--"], palette="Set2")
plt.show()
```



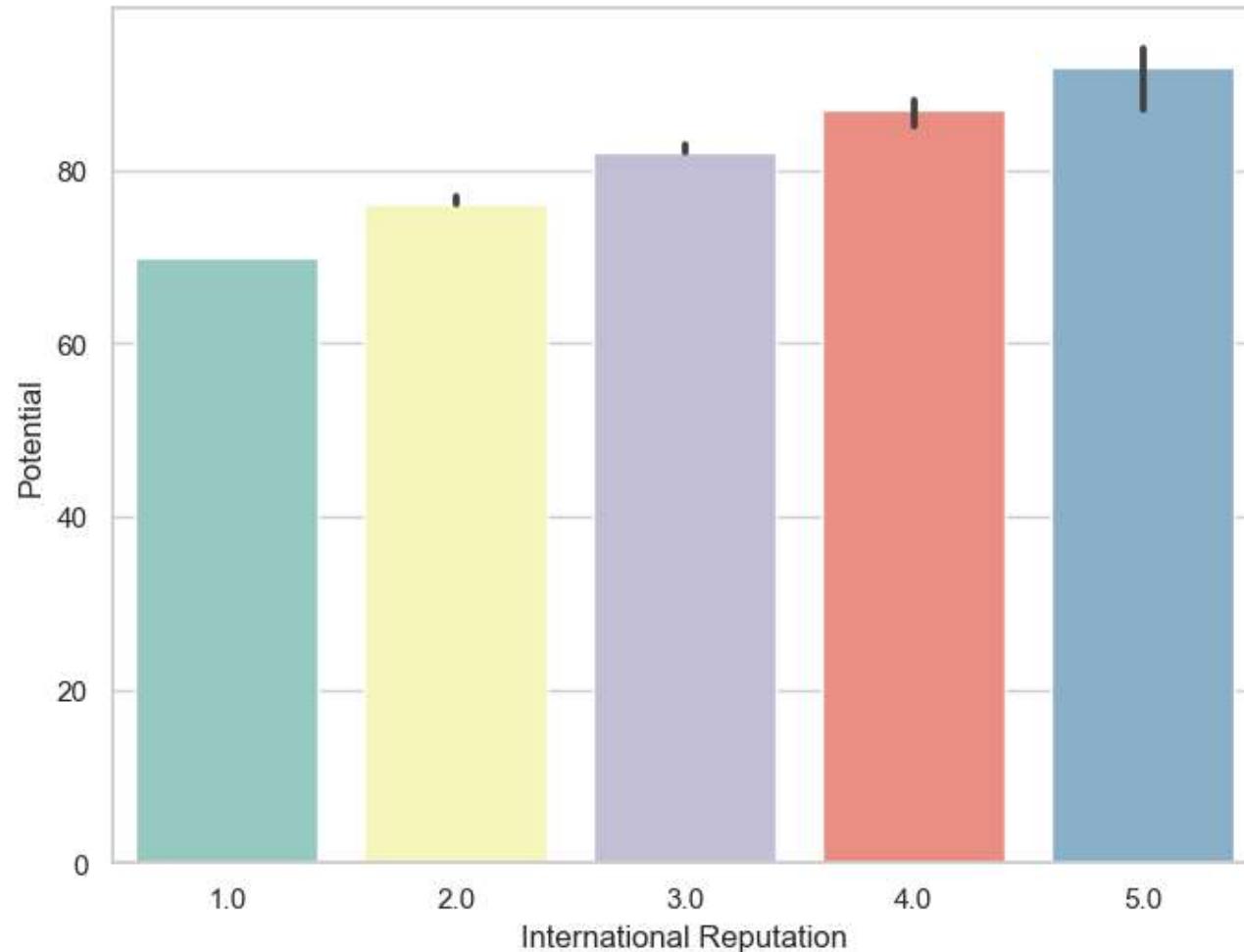
```
In [38]: f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa19, palette="Set1")
plt.show()
```



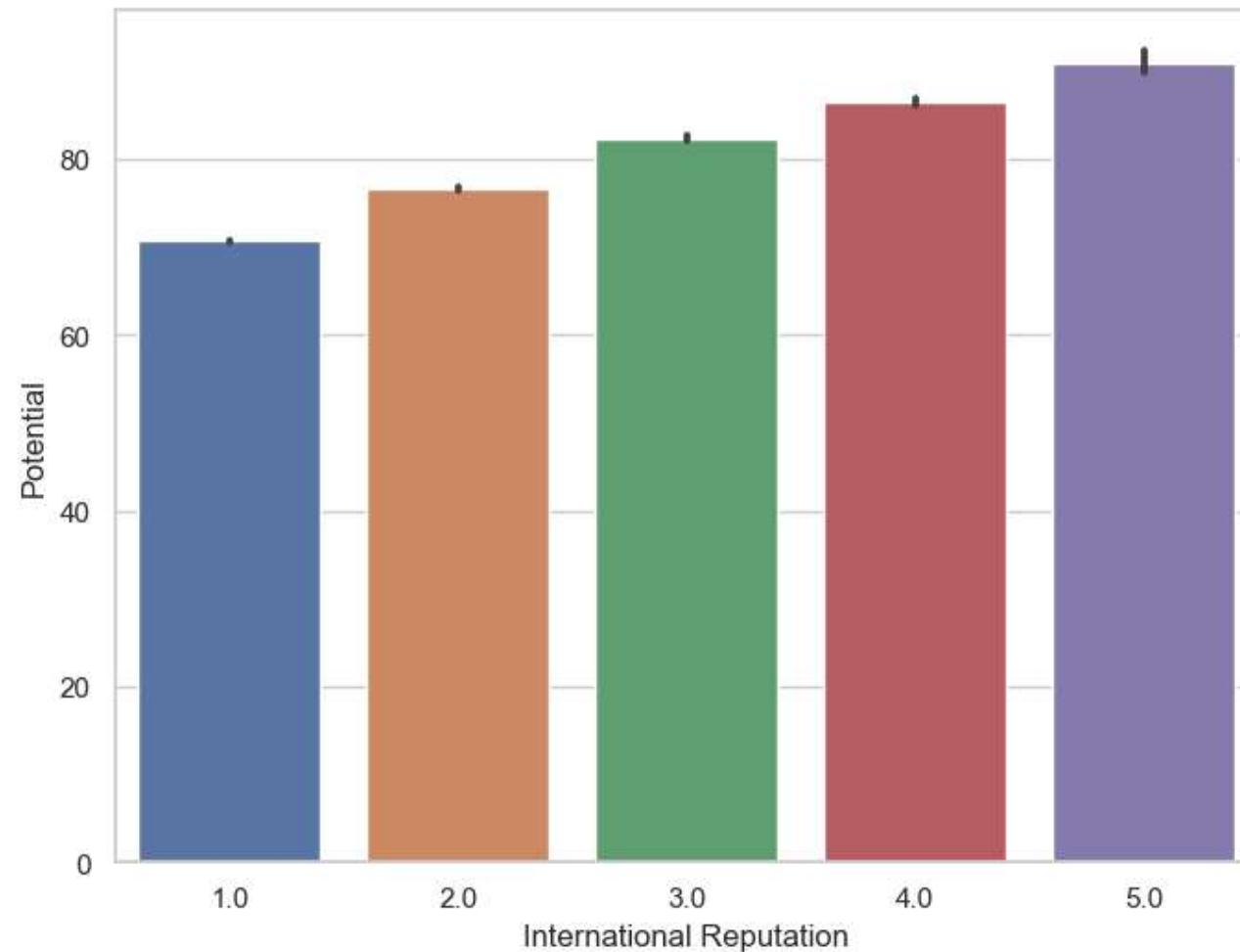
```
In [39]: f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", hue="Preferred Foot", data=fifa19, palette="Set1")
plt.show()
```



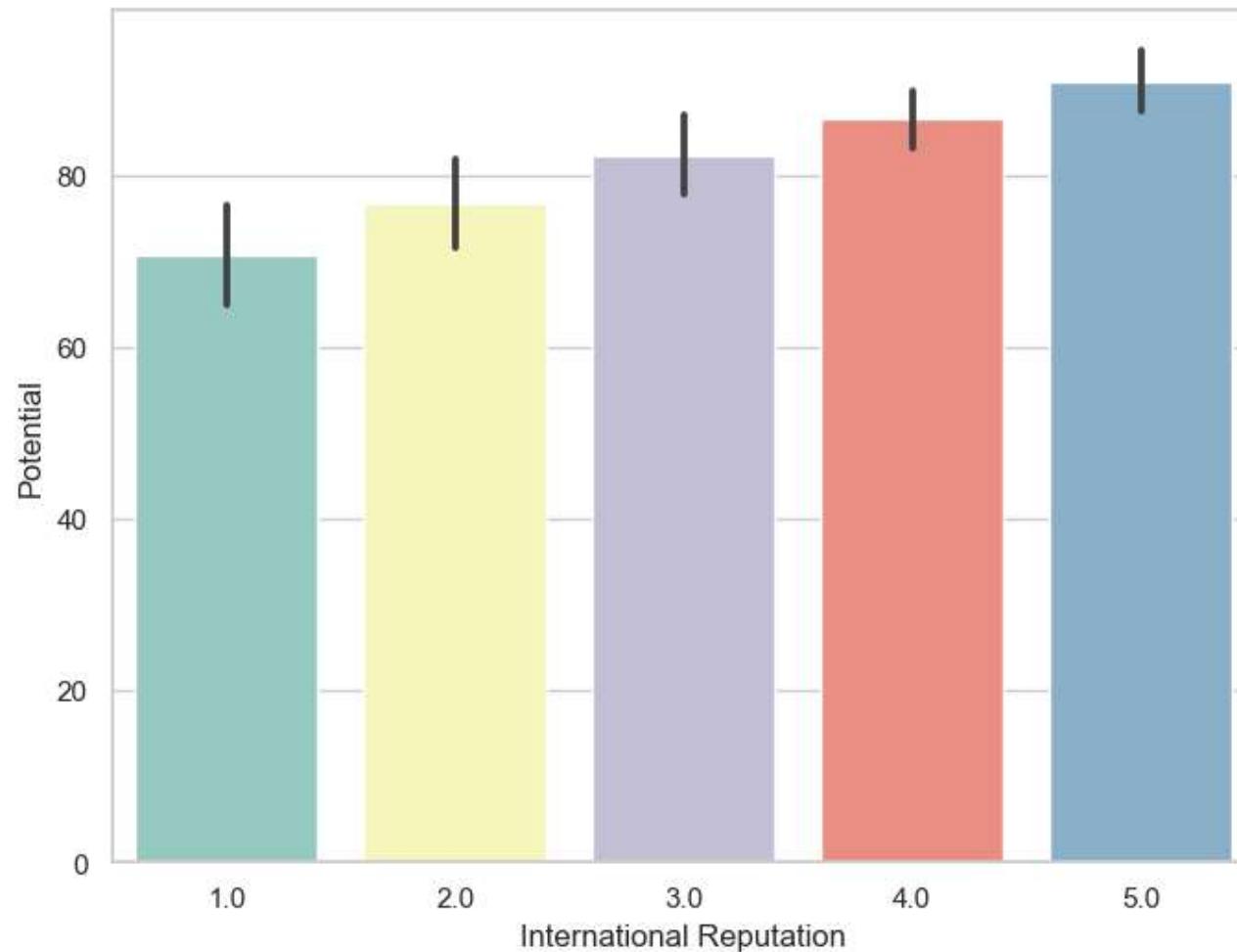
```
In [40]: ┌─ from numpy import median
  f, ax = plt.subplots(figsize=(8, 6))
  sns.barplot(x="International Reputation", y="Potential", data=fifa19, estimator=median, palette="Set3")
  plt.show()
```



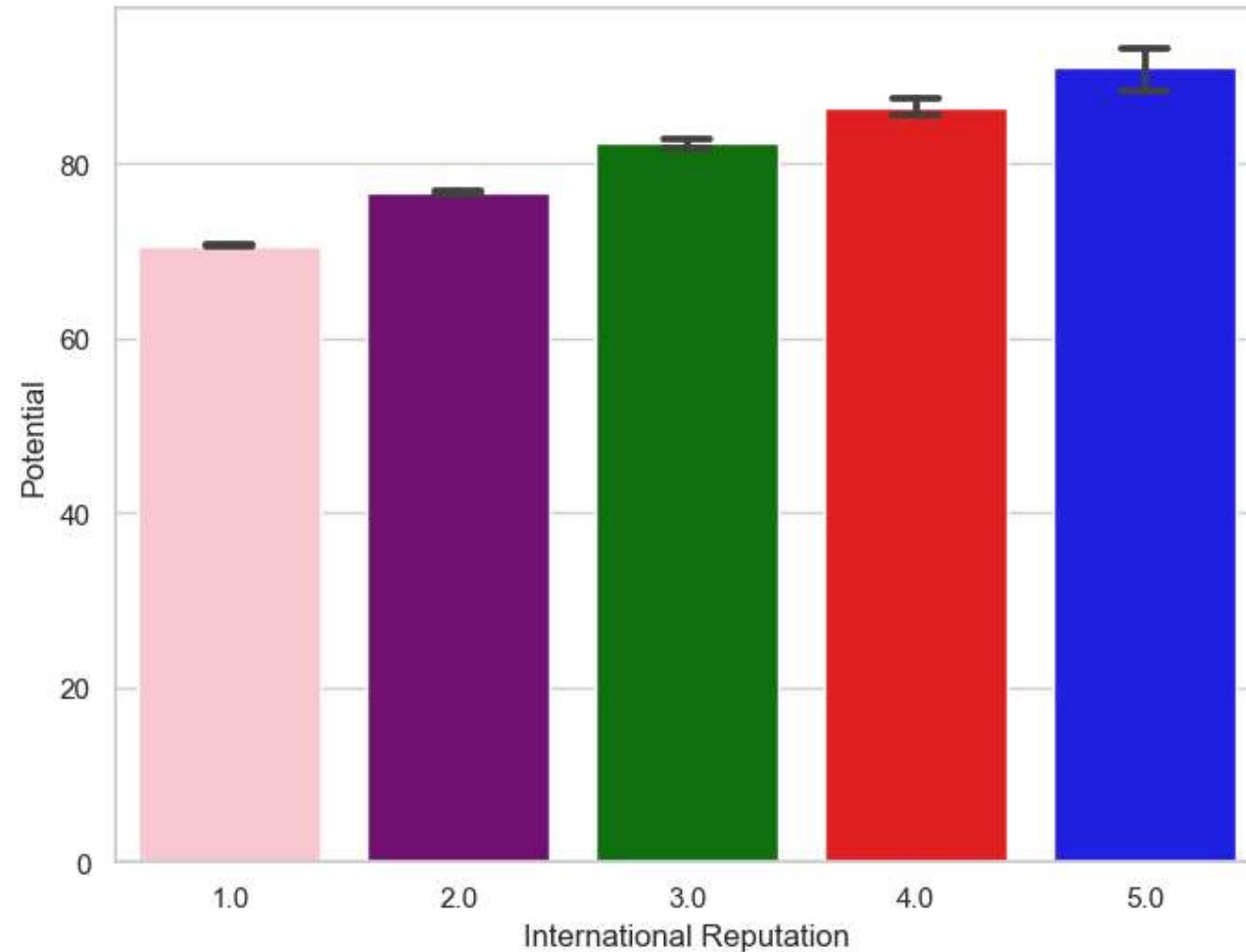
```
In [41]: f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa19, ci=68)
plt.show()
```



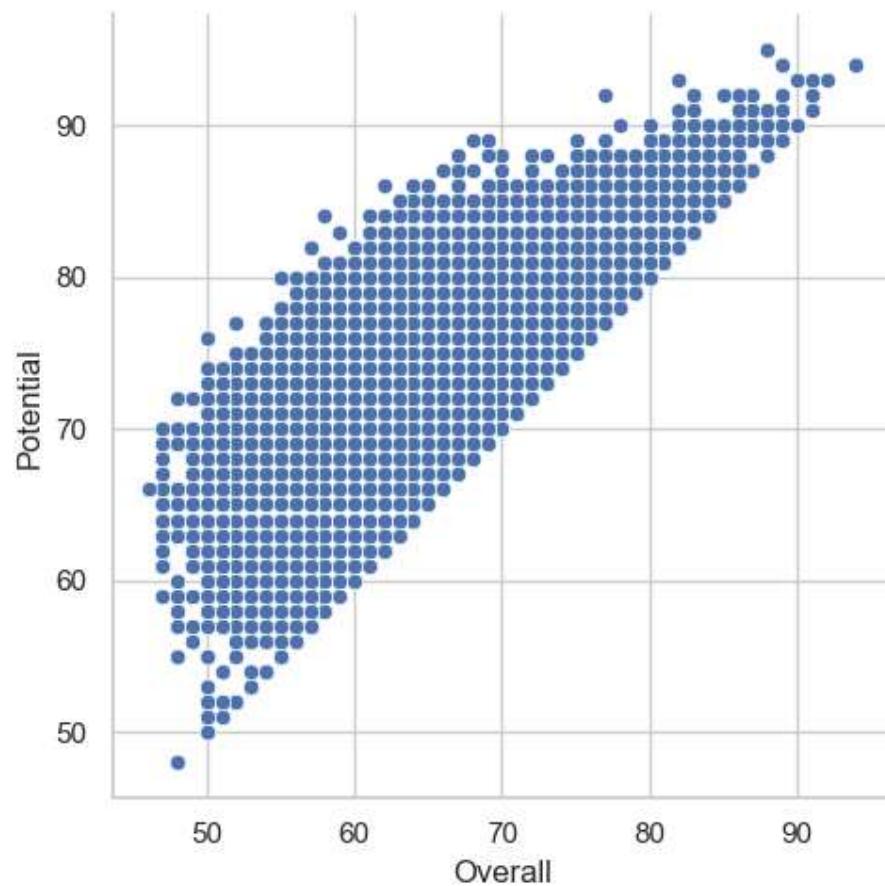
```
In [42]: f, ax = plt.subplots(figsize=(8, 6))
sns.barplot(x="International Reputation", y="Potential", data=fifa19, ci="sd", palette="Set3")
plt.show()
```



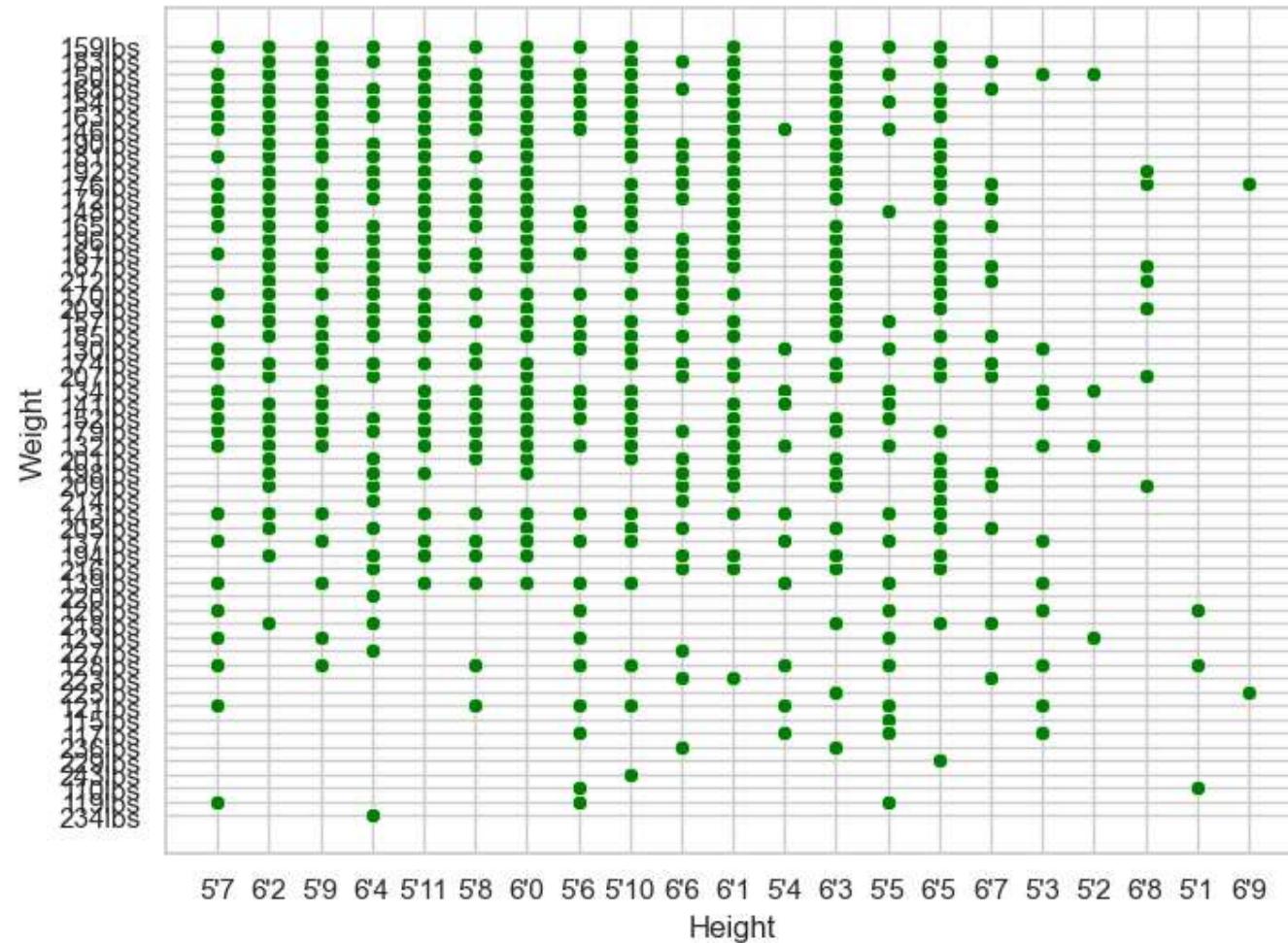
```
In [44]: %matplotlib  
import matplotlib.pyplot as plt  
import numpy as np  
  
plt.subplots(figsize=(8, 6))  
barplot(x="International Reputation", y="Potential", data=fifa19, capsize=0.2, palette={'red': '#E63333', 'green': '#339933', 'pink': '#FF6666', 'purple': '#663399', 'blue': '#3366CC'})  
plt.show()
```



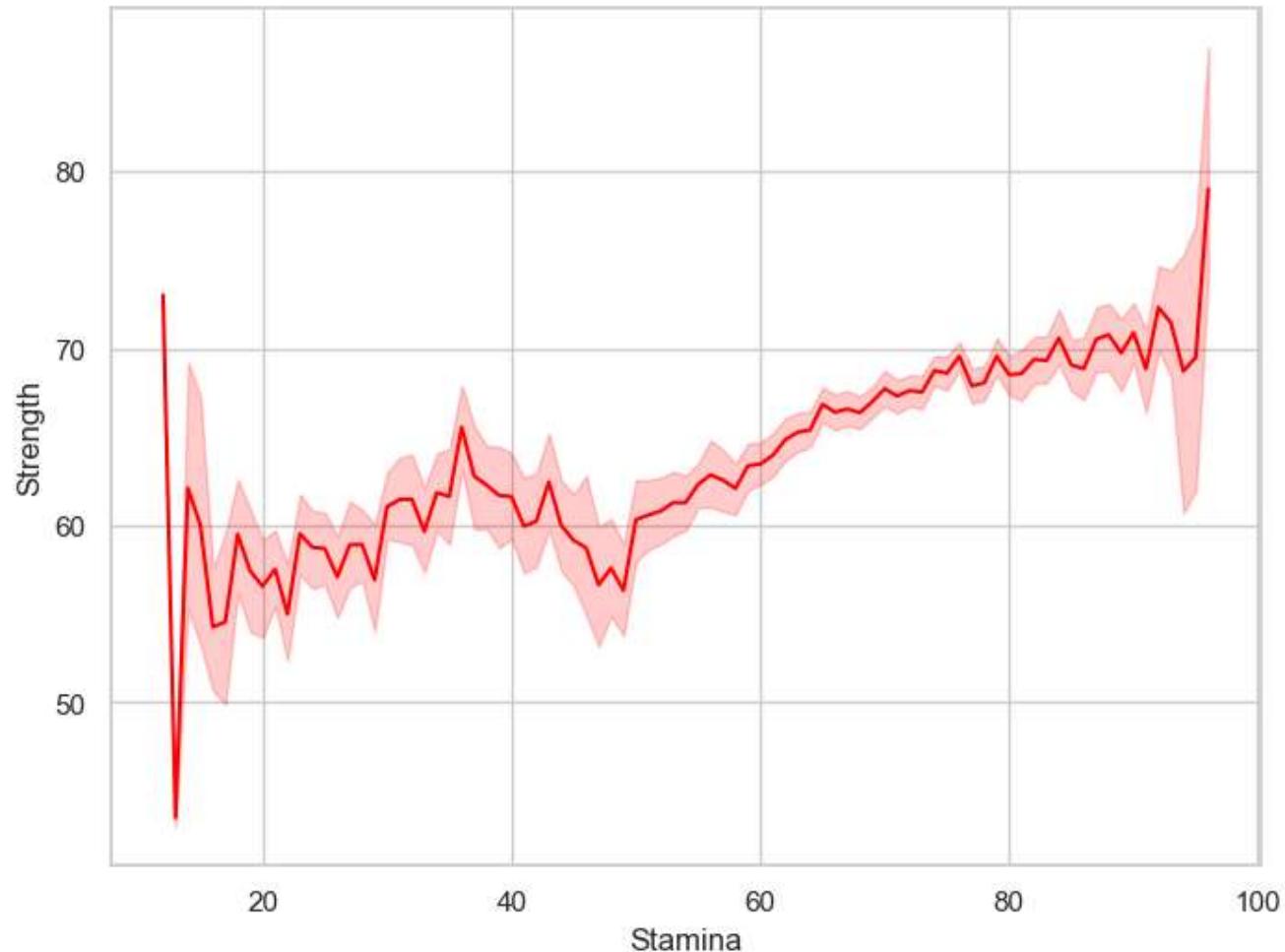
In [45]: g = sns.relplot(x="Overall", y="Potential", data=fifa19)



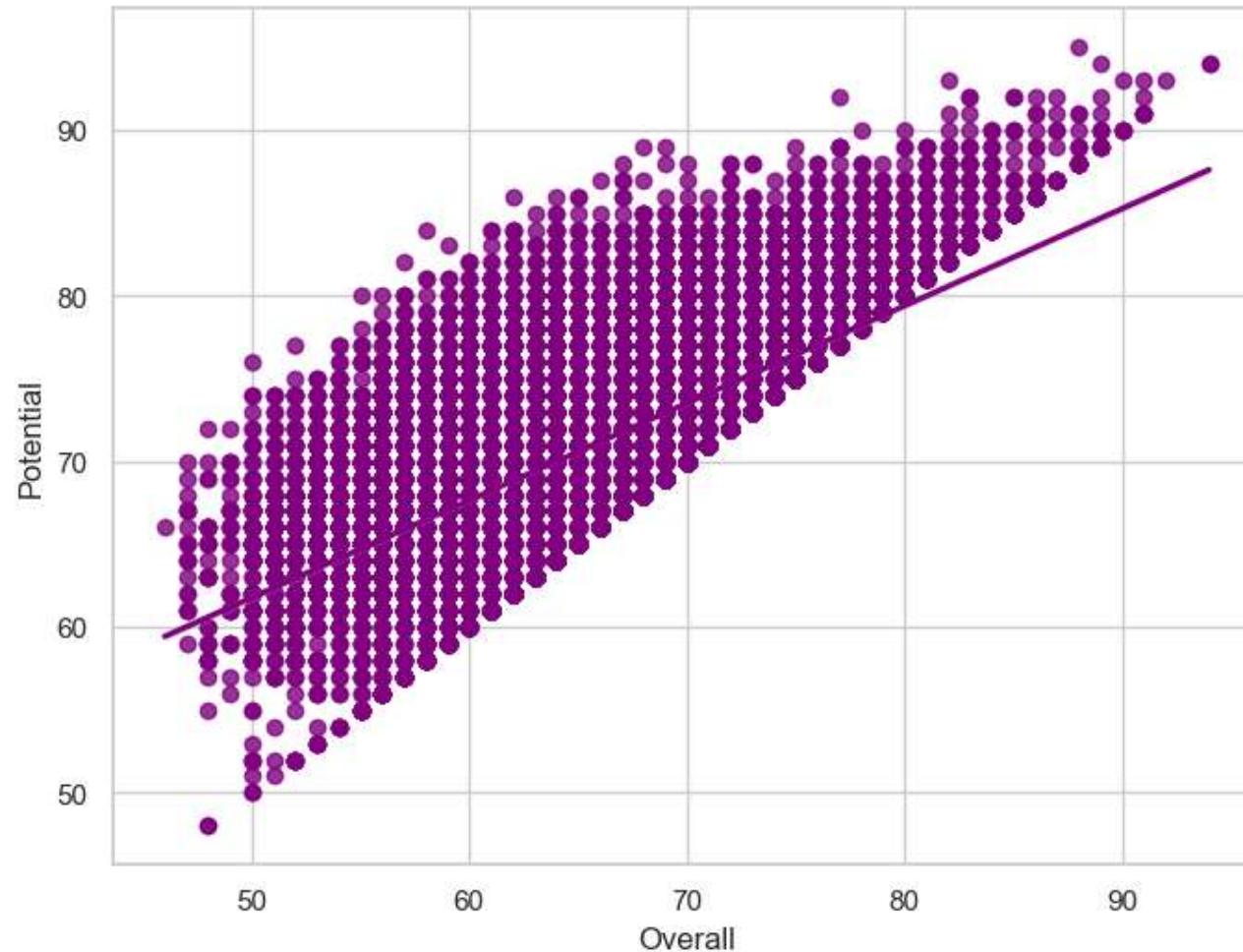
```
In [46]: f, ax = plt.subplots(figsize=(8, 6))
sns.scatterplot(x="Height", y="Weight", data=fifa19,color='green')
plt.show()
```



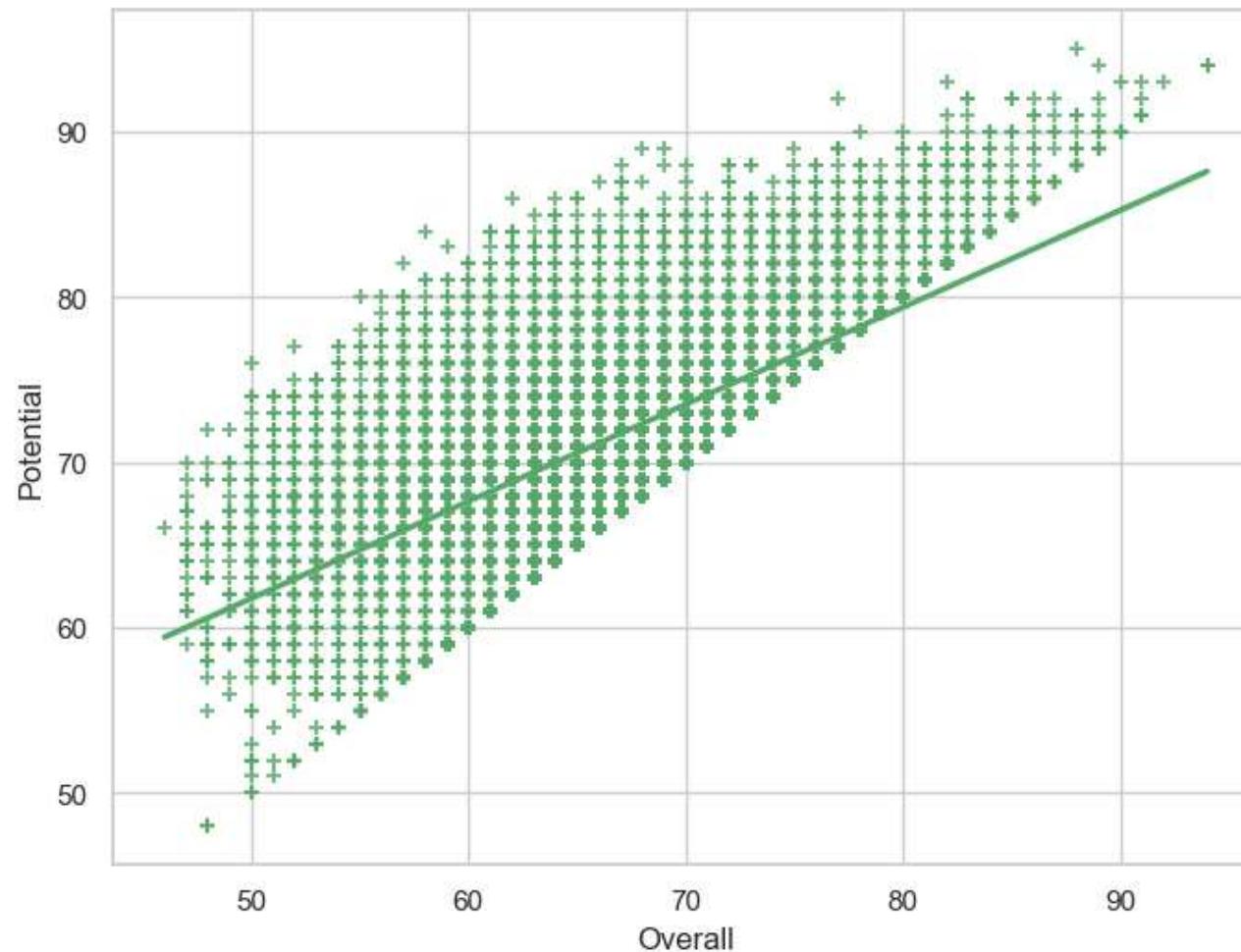
```
In [47]: f, ax = plt.subplots(figsize=(8, 6))
ax = sns.lineplot(x="Stamina", y="Strength", data=fifa19,color='red')
plt.show()
```



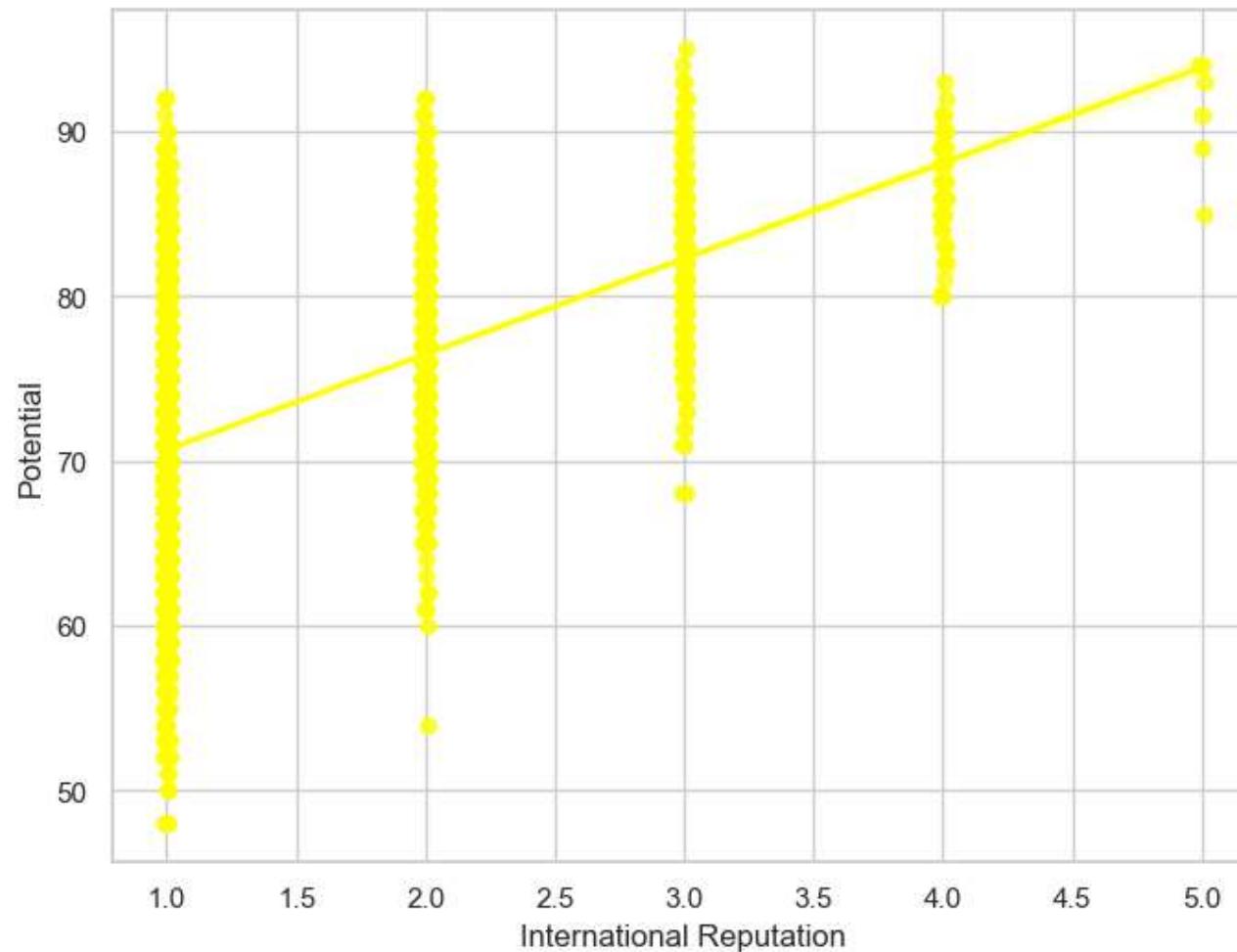
```
In [48]: f, ax = plt.subplots(figsize=(8, 6))
ax = sns.regplot(x="Overall", y="Potential", data=fifa19,color='purple')
plt.show()
```



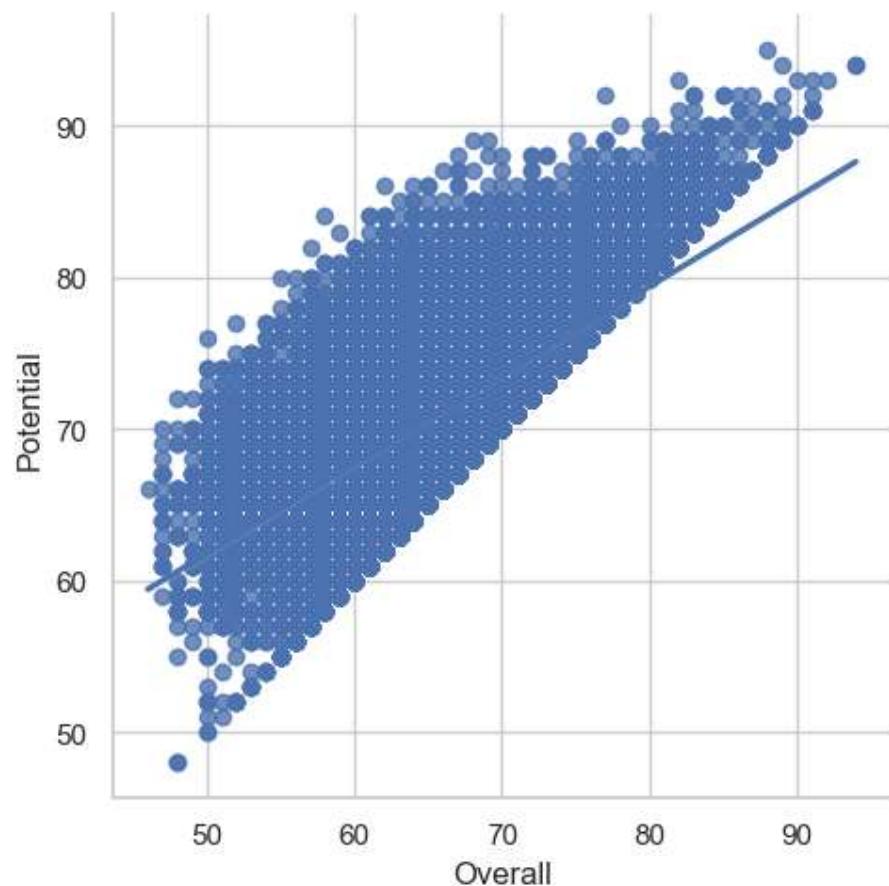
```
In [49]: f, ax = plt.subplots(figsize=(8, 6))
ax = sns.regplot(x="Overall", y="Potential", data=fifa19, color= "g", marker="+")
plt.show()
```



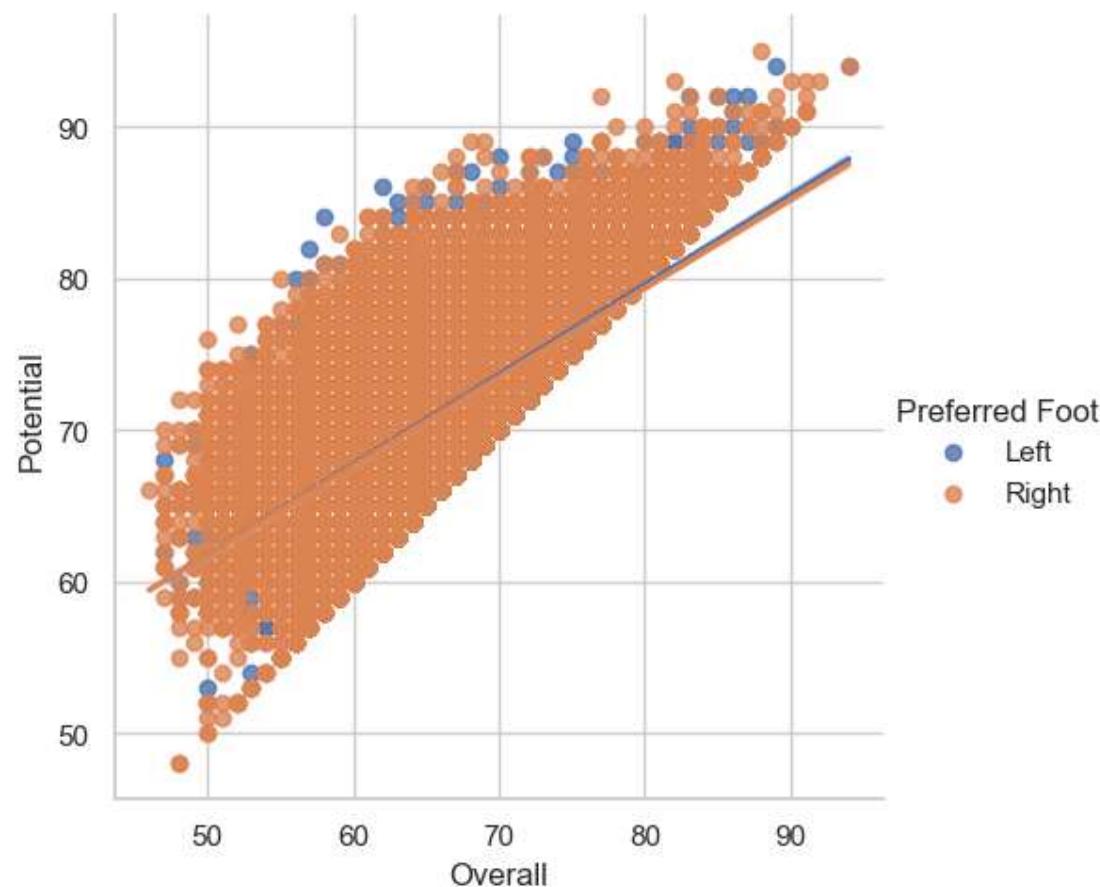
```
In [50]: f, ax = plt.subplots(figsize=(8, 6))
sns.regplot(x="International Reputation", y="Potential", data=fifa19, x_jitter=.01,color='yellow')
plt.show()
```



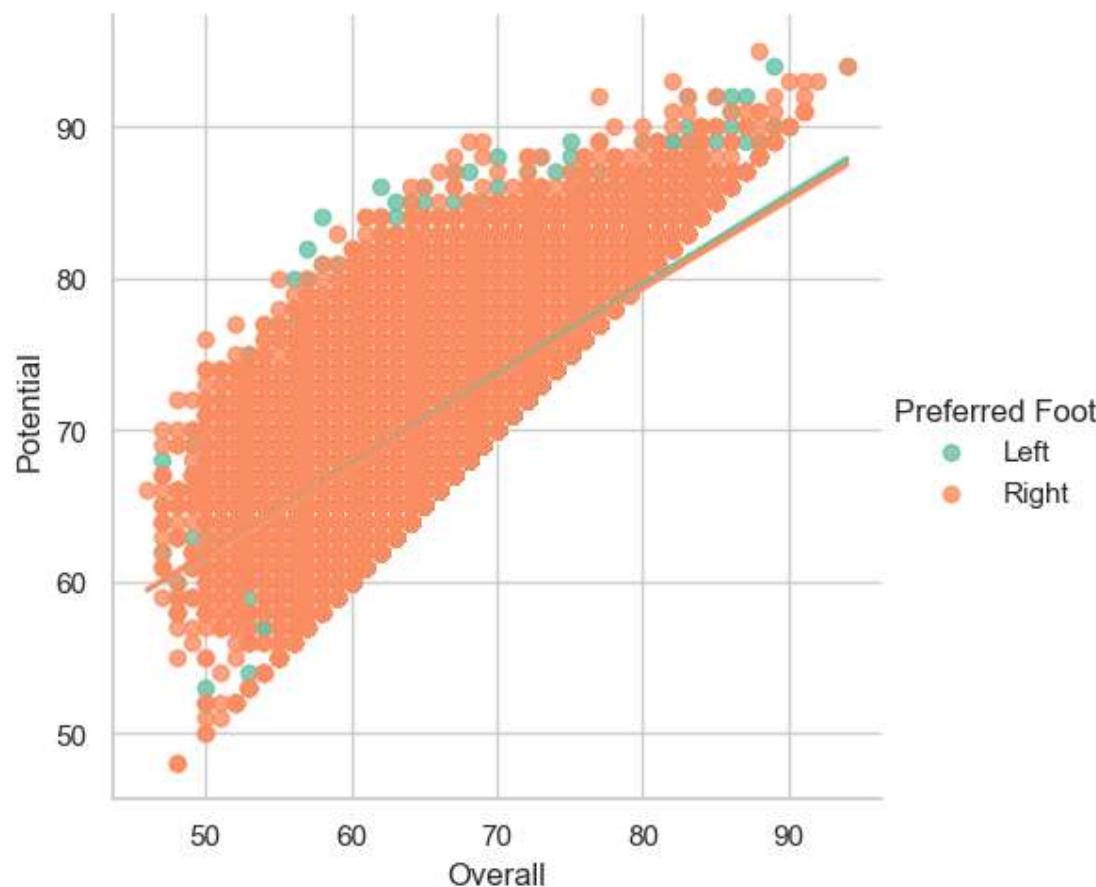
```
In [52]: g= sns.lmplot(x="Overall", y="Potential", data=fifa19)
```



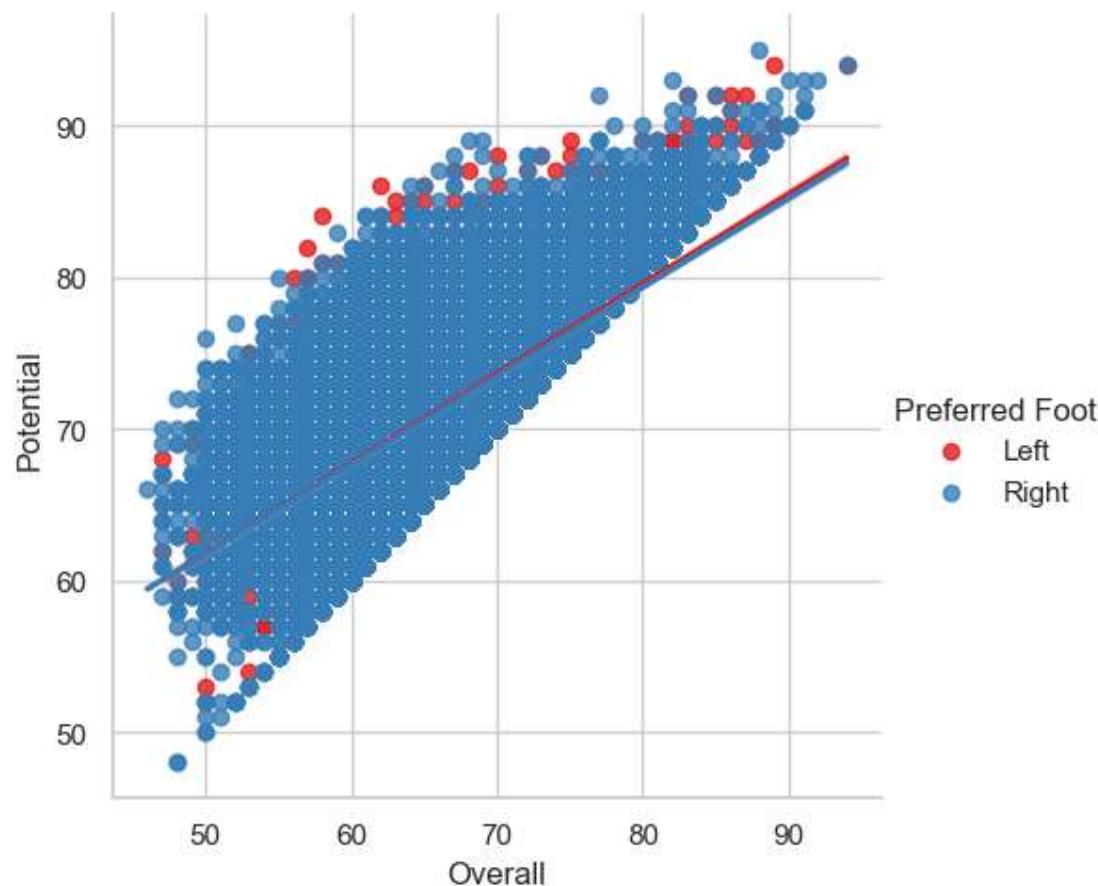
```
In [53]: g= sns.lmplot(x="Overall", y="Potential", hue="Preferred Foot", data=fifa19)
```



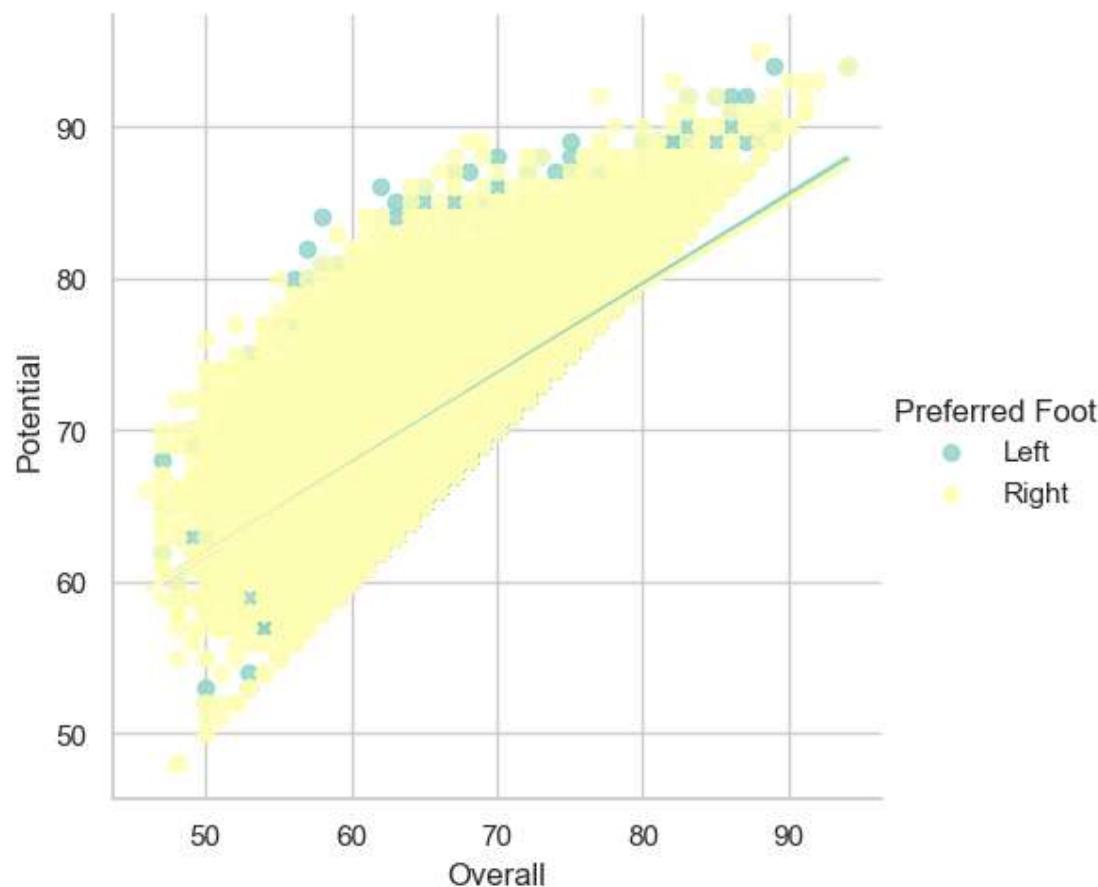
```
In [54]: g= sns.lmplot(x="Overall", y="Potential", hue="Preferred Foot", data=fifa19, palette="Set2")
```



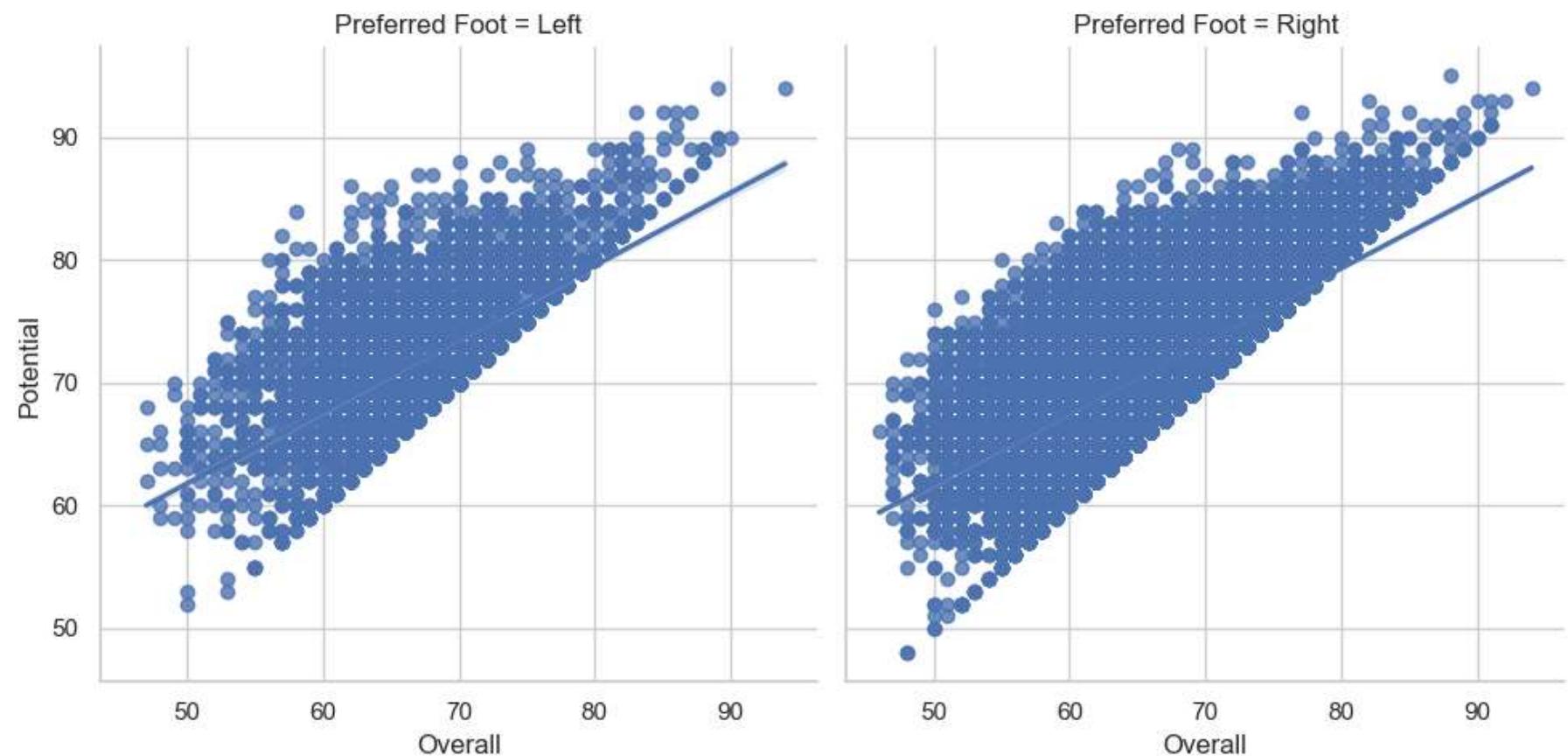
```
In [55]: g= sns.lmplot(x="Overall", y="Potential", hue="Preferred Foot", data=fifa19, palette="Set1")
```



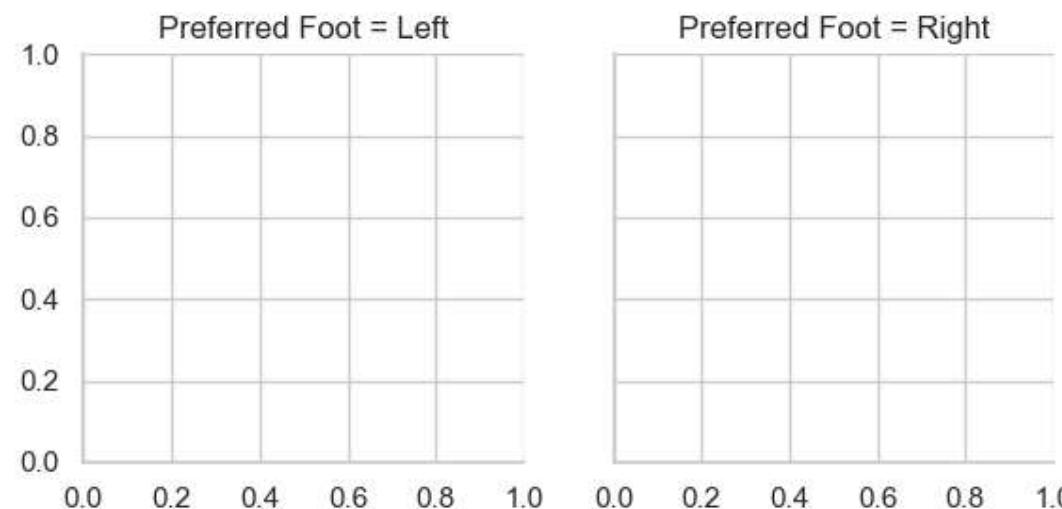
```
In [56]: g= sns.lmplot(x="Overall", y="Potential", hue="Preferred Foot", data=fifa19, palette="Set3")
```



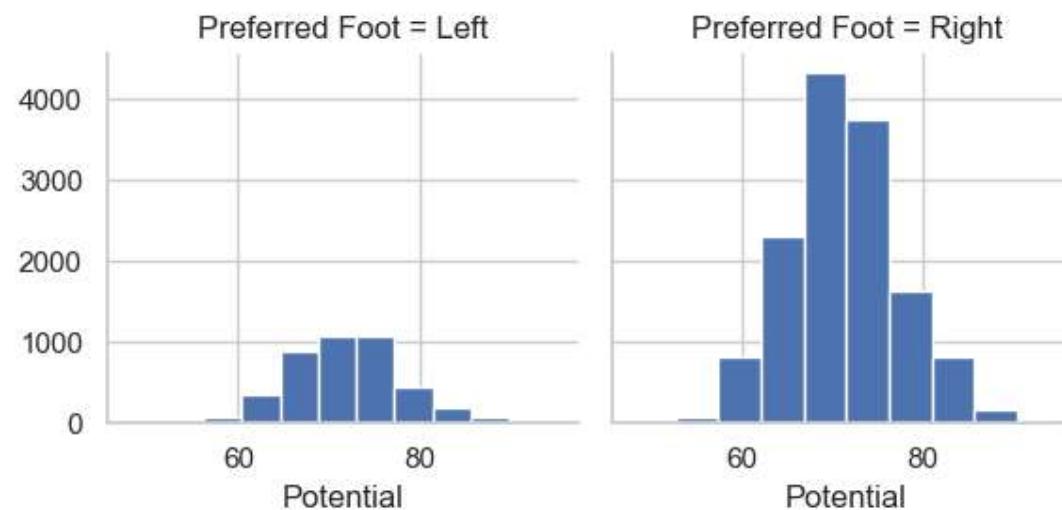
```
In [57]: g= sns.lmplot(x="Overall", y="Potential", col="Preferred Foot", data=fifa19)
```



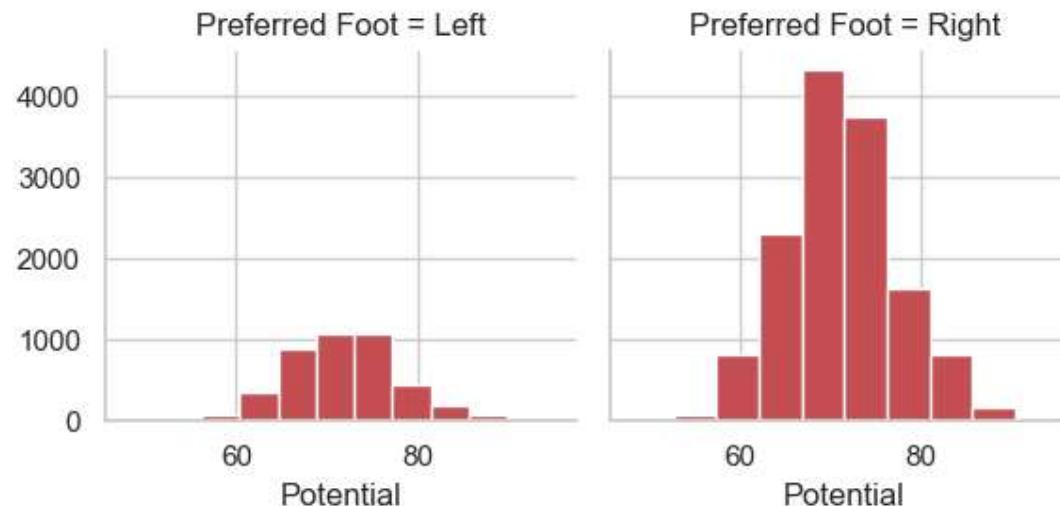
```
In [58]: g = sns.FacetGrid(fifa19, col="Preferred Foot")
```



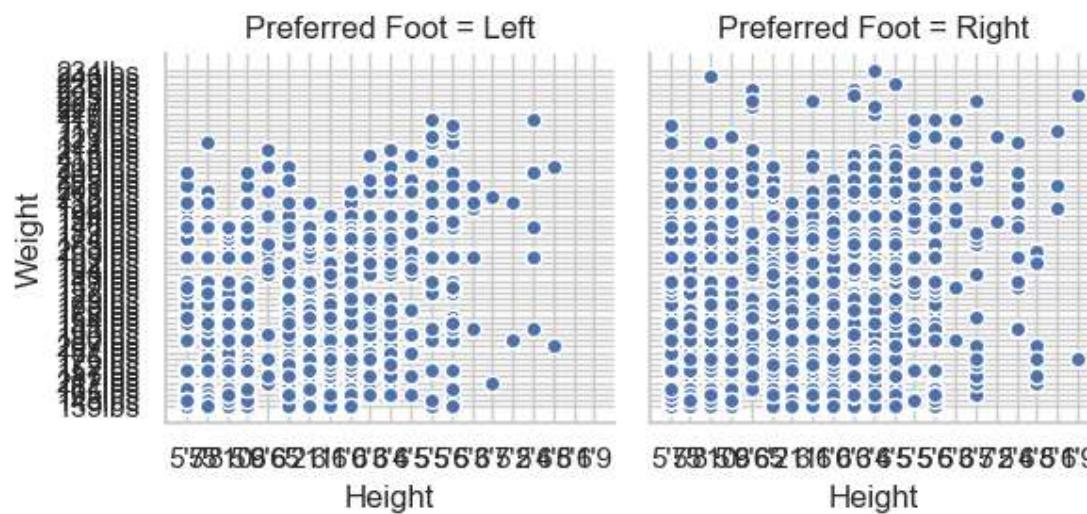
```
In [59]: g = sns.FacetGrid(fifa19, col="Preferred Foot")
g = g.map(plt.hist, "Potential")
```



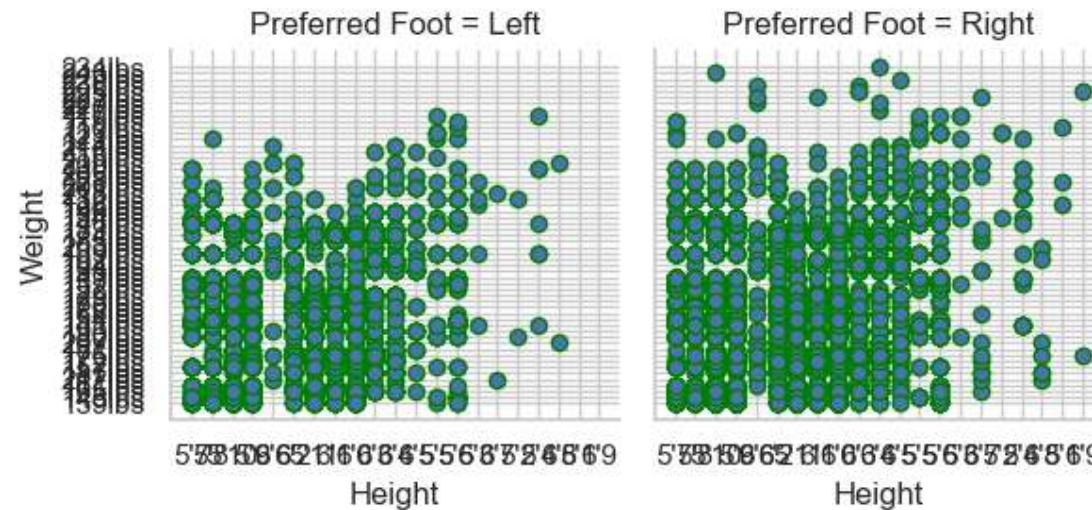
```
In [60]: g = sns.FacetGrid(fifa19, col="Preferred Foot")
g = g.map(plt.hist, "Potential", bins=10, color="r")
```



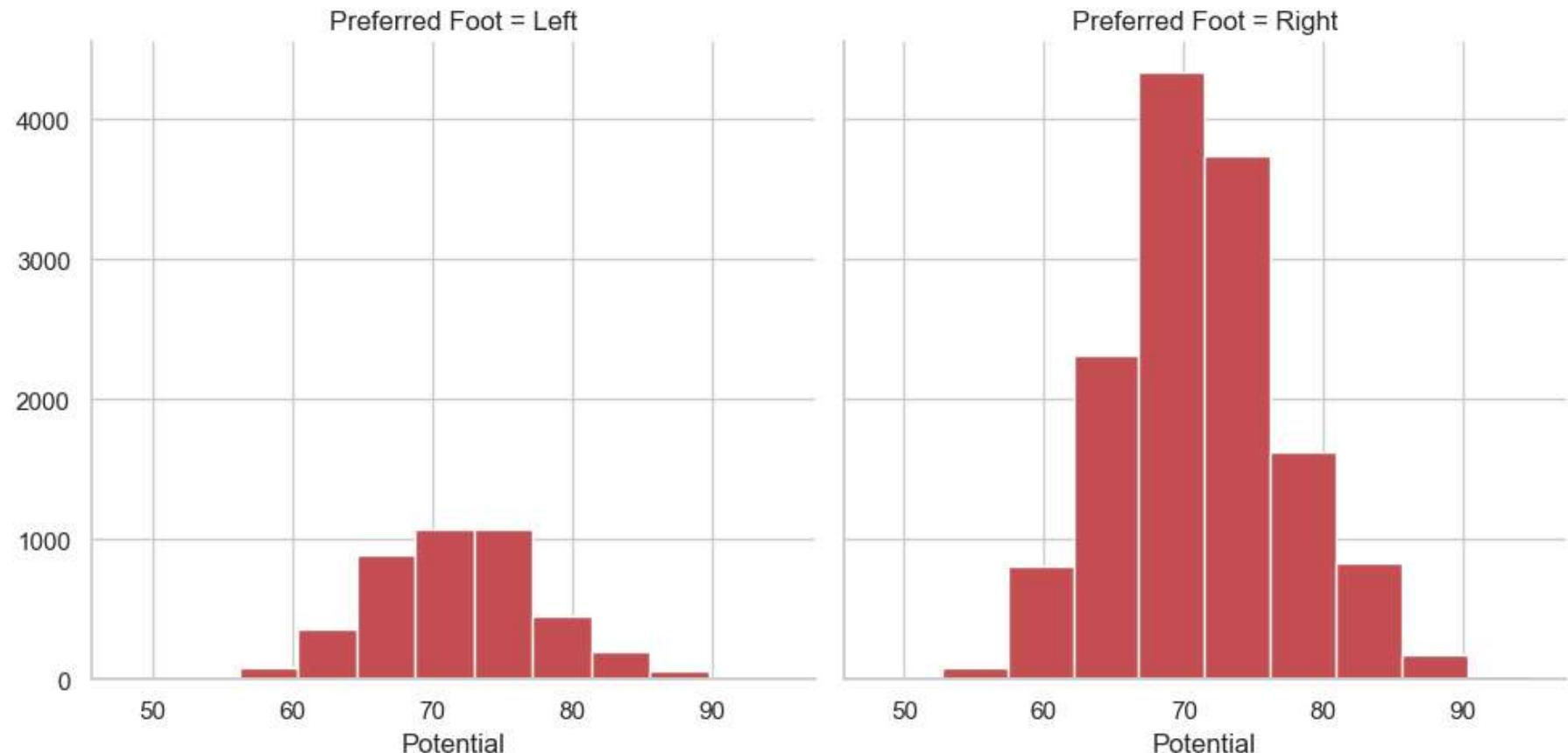
```
In [61]: g = sns.FacetGrid(fifa19, col="Preferred Foot")
g = (g.map(plt.scatter, "Height", "Weight", edgecolor="w").add_legend())
```



```
In [63]: g = sns.FacetGrid(fifa19, col="Preferred Foot")
g = (g.map(plt.scatter, "Height", "Weight", edgecolor="green").add_legend())
```

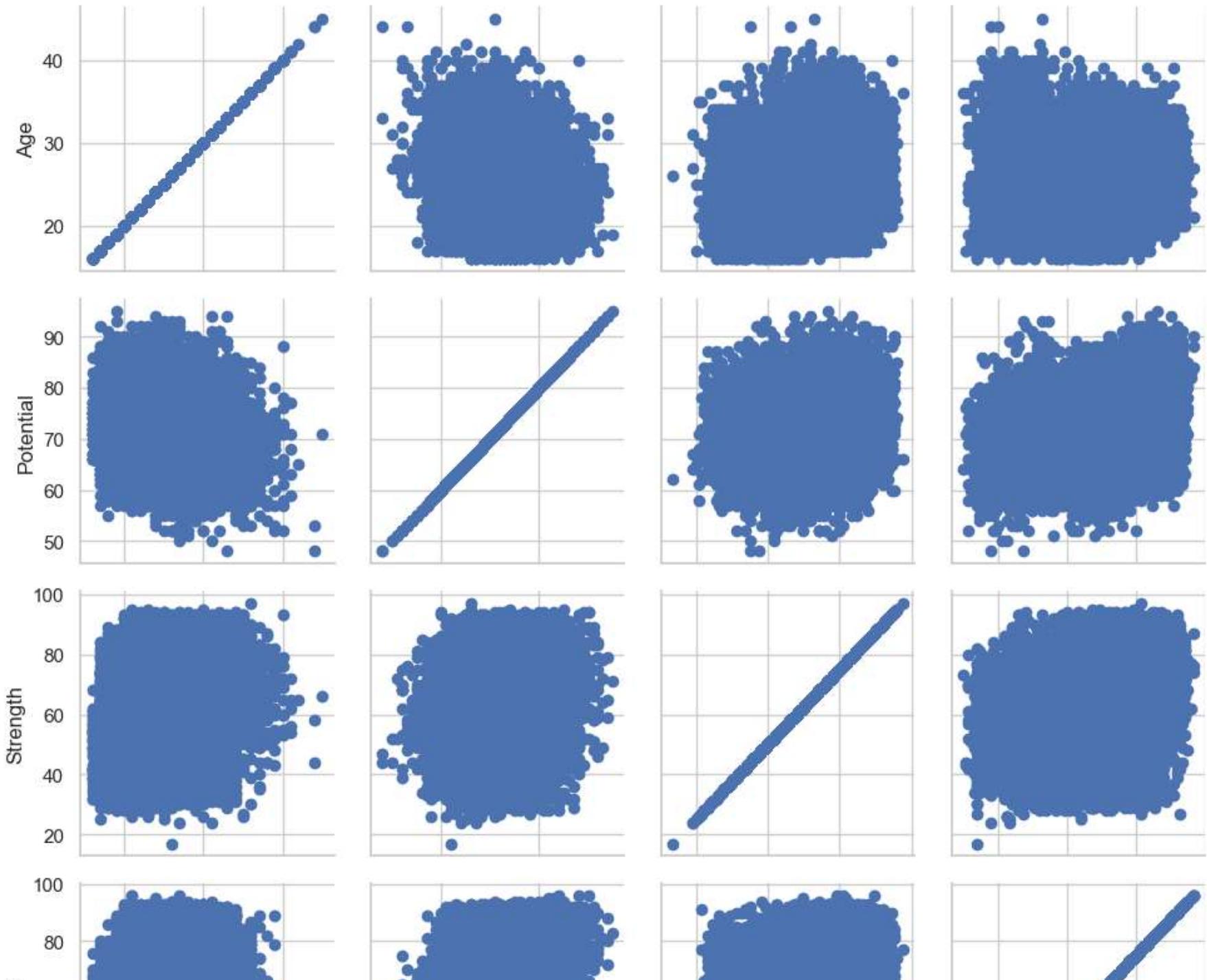


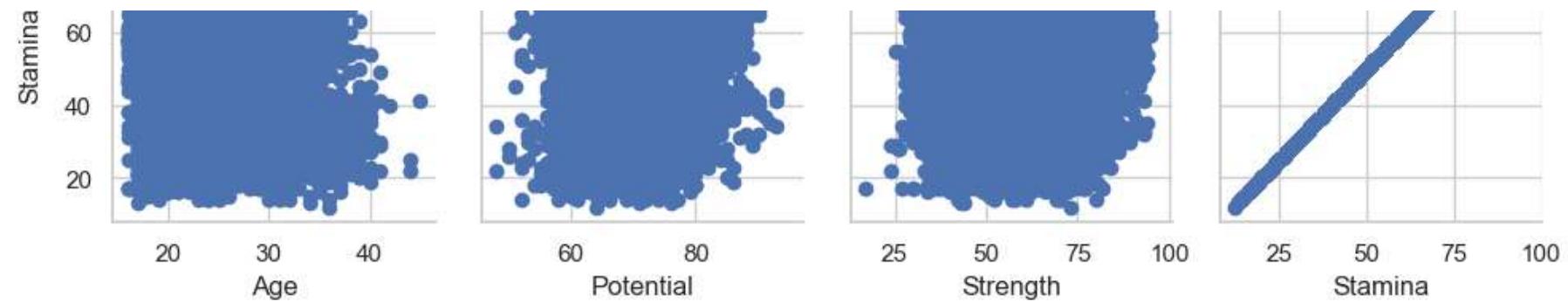
```
In [64]: g = sns.FacetGrid(fifa19, col="Preferred Foot", height=5, aspect=1)
g = g.map(plt.hist, "Potential", color="r")
```



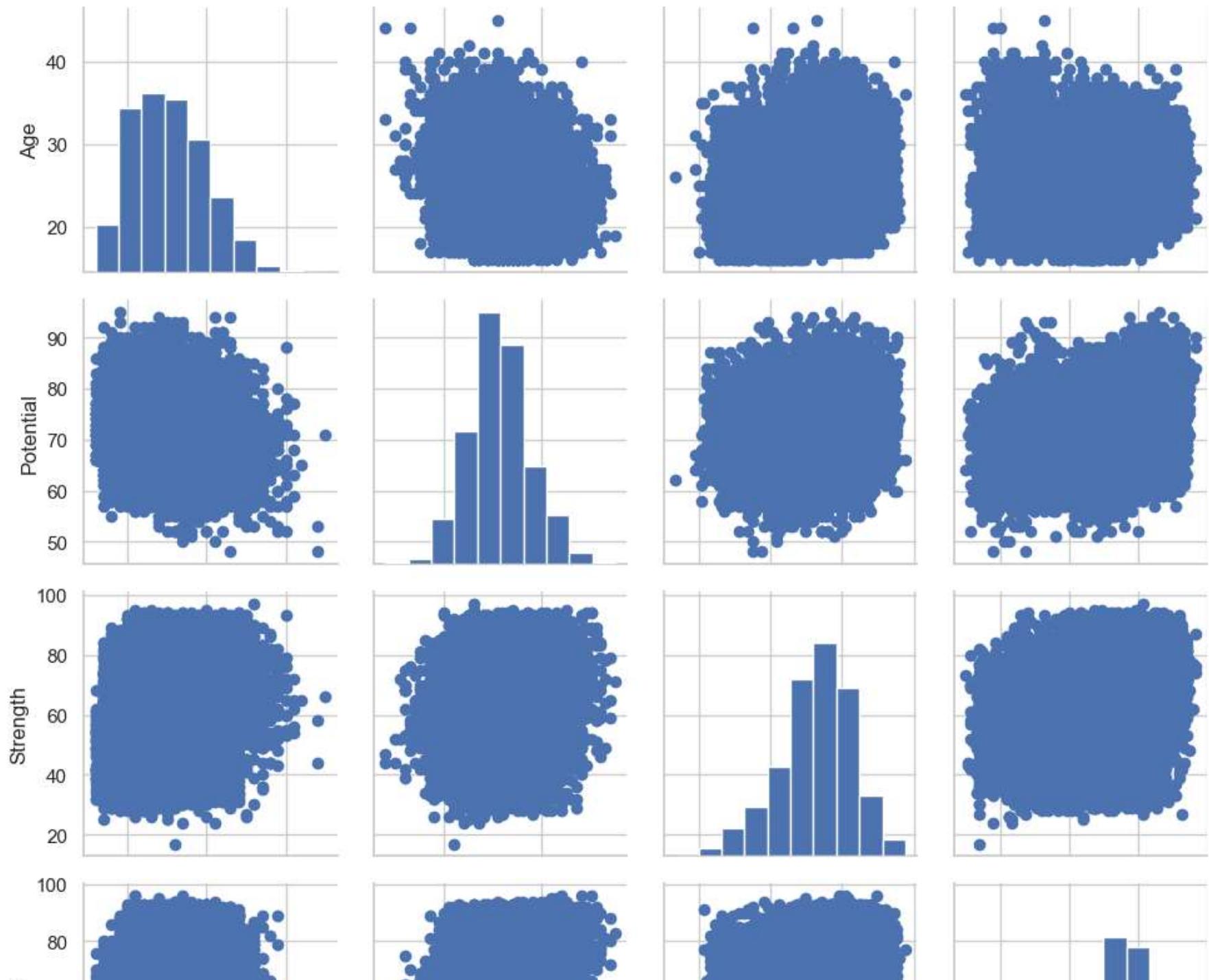
```
In [65]: fifa19_new = fifa19[['Age', 'Potential', 'Strength', 'Stamina', 'Preferred Foot']]
```

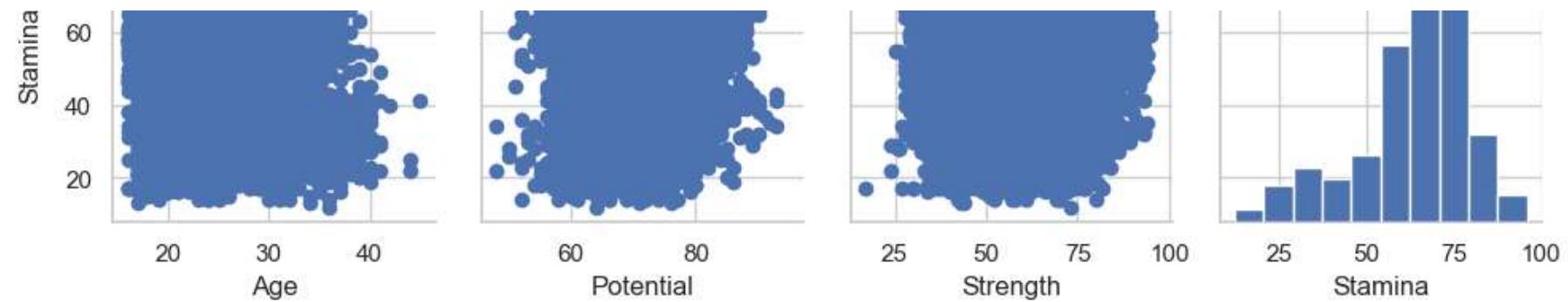
```
In [66]: ┆ g = sns.PairGrid(fifa19_new)
g = g.map(plt.scatter)
```

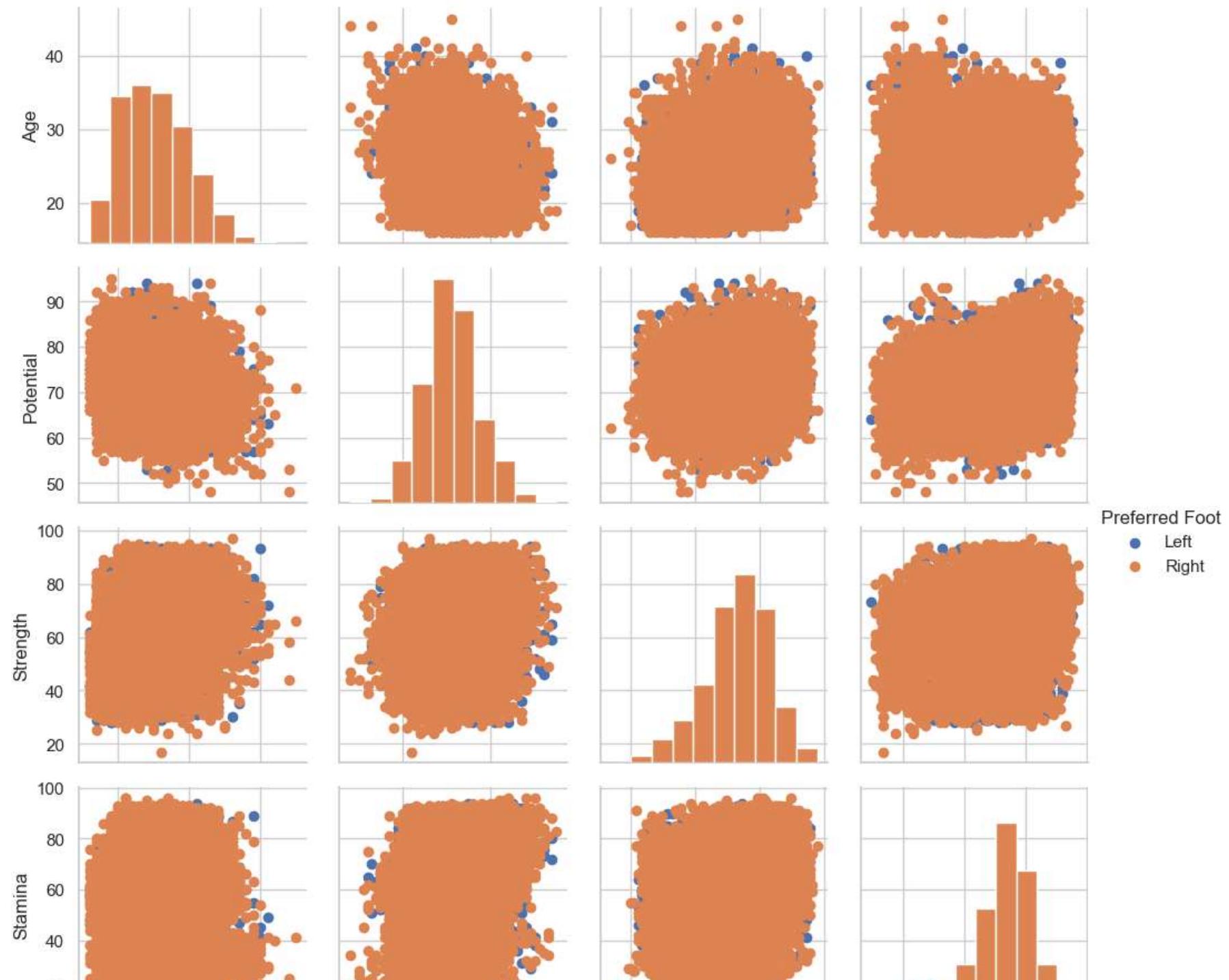


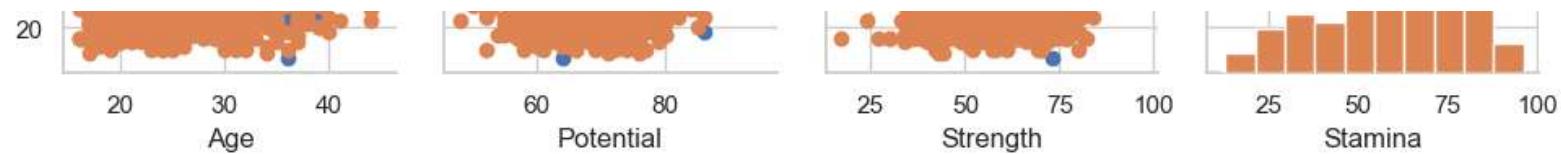
```
In [67]: ┆ g = sns.PairGrid(fifa19_new)
g = g.map_diag(plt.hist)
g = g.map_offdiag(plt.scatter)
```

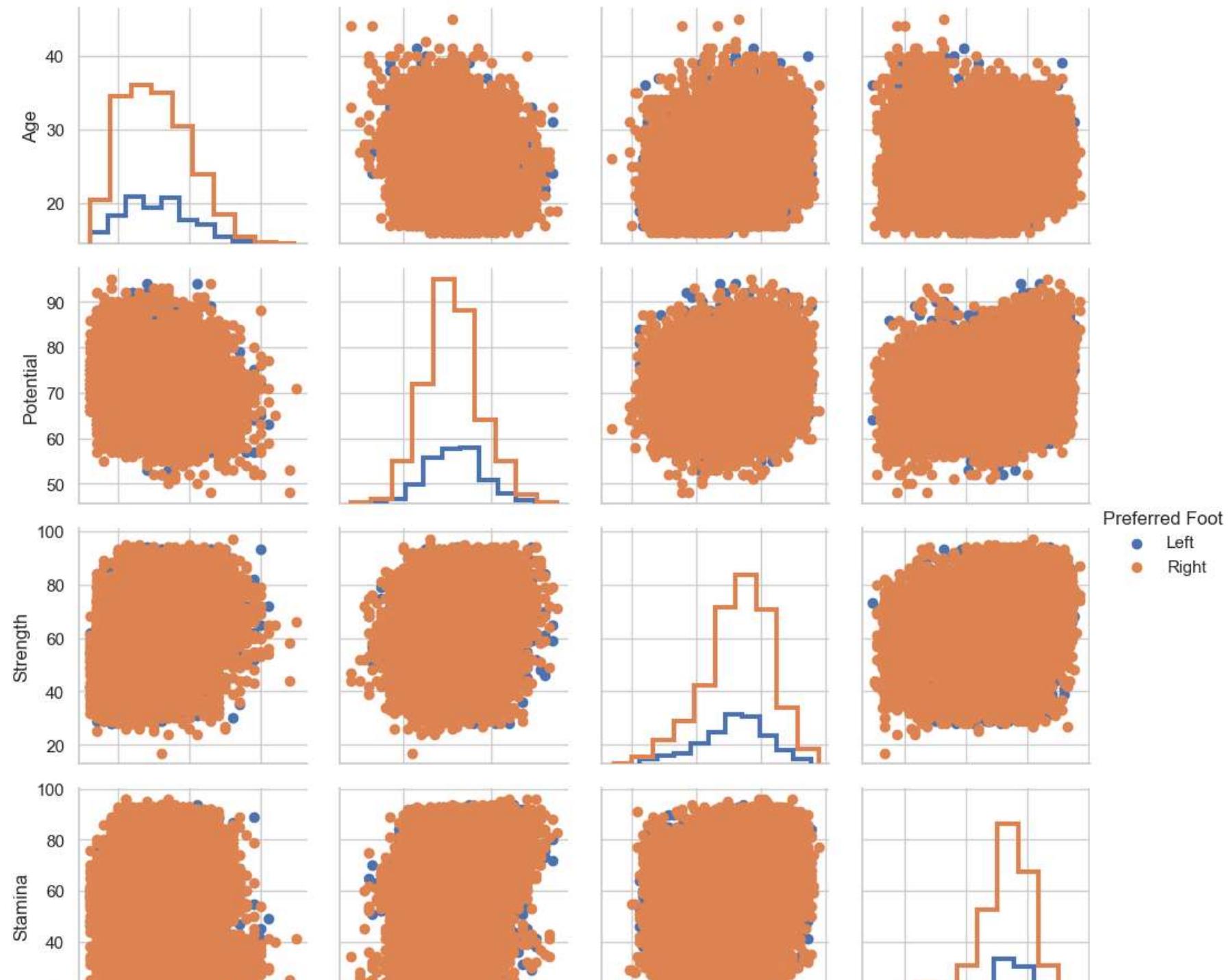


```
In [68]: ┆ g = sns.PairGrid(fifa19_new, hue="Preferred Foot")
g = g.map_diag(plt.hist)
g = g.map_offdiag(plt.scatter)
g = g.add_legend()
```

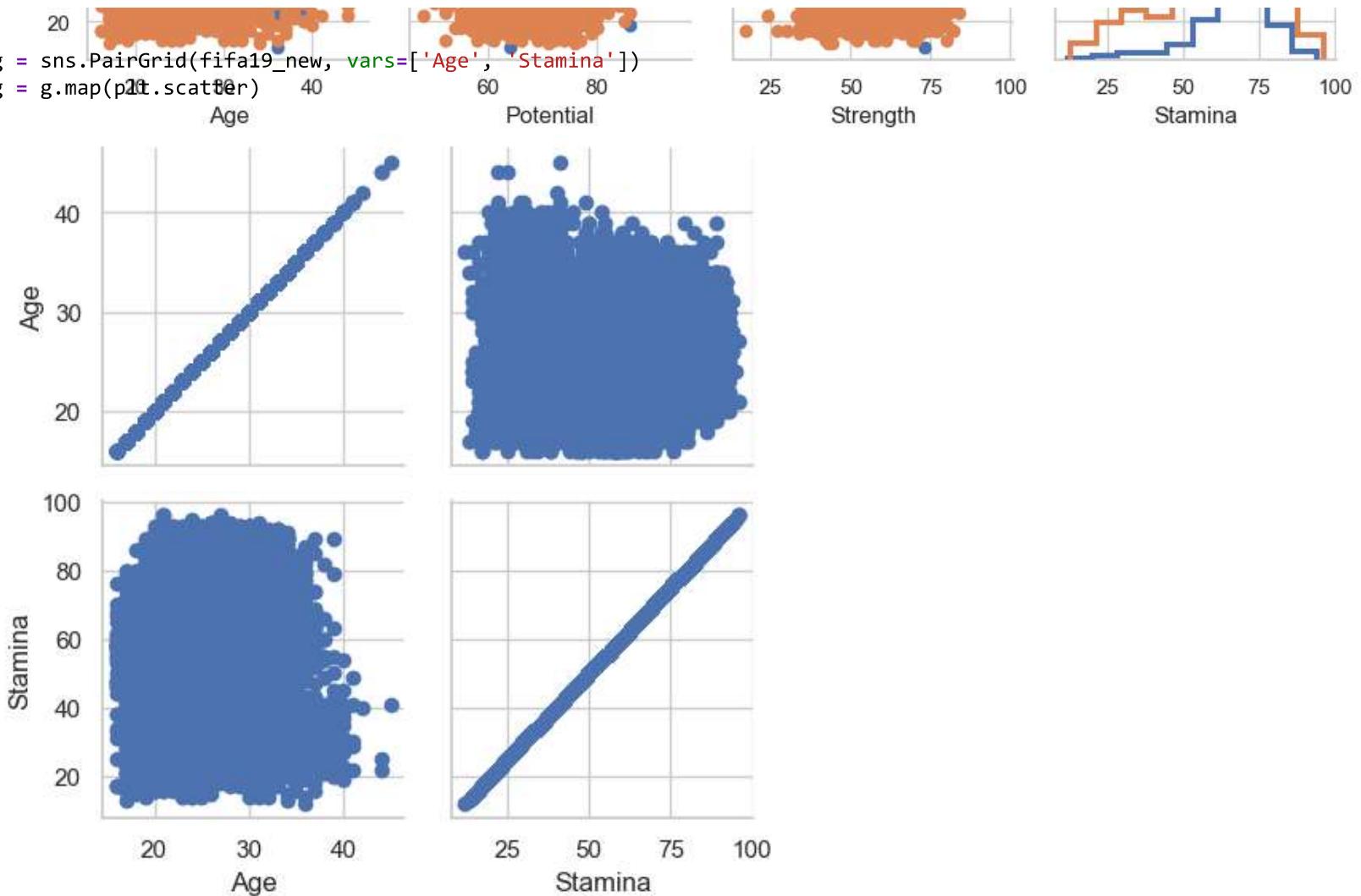





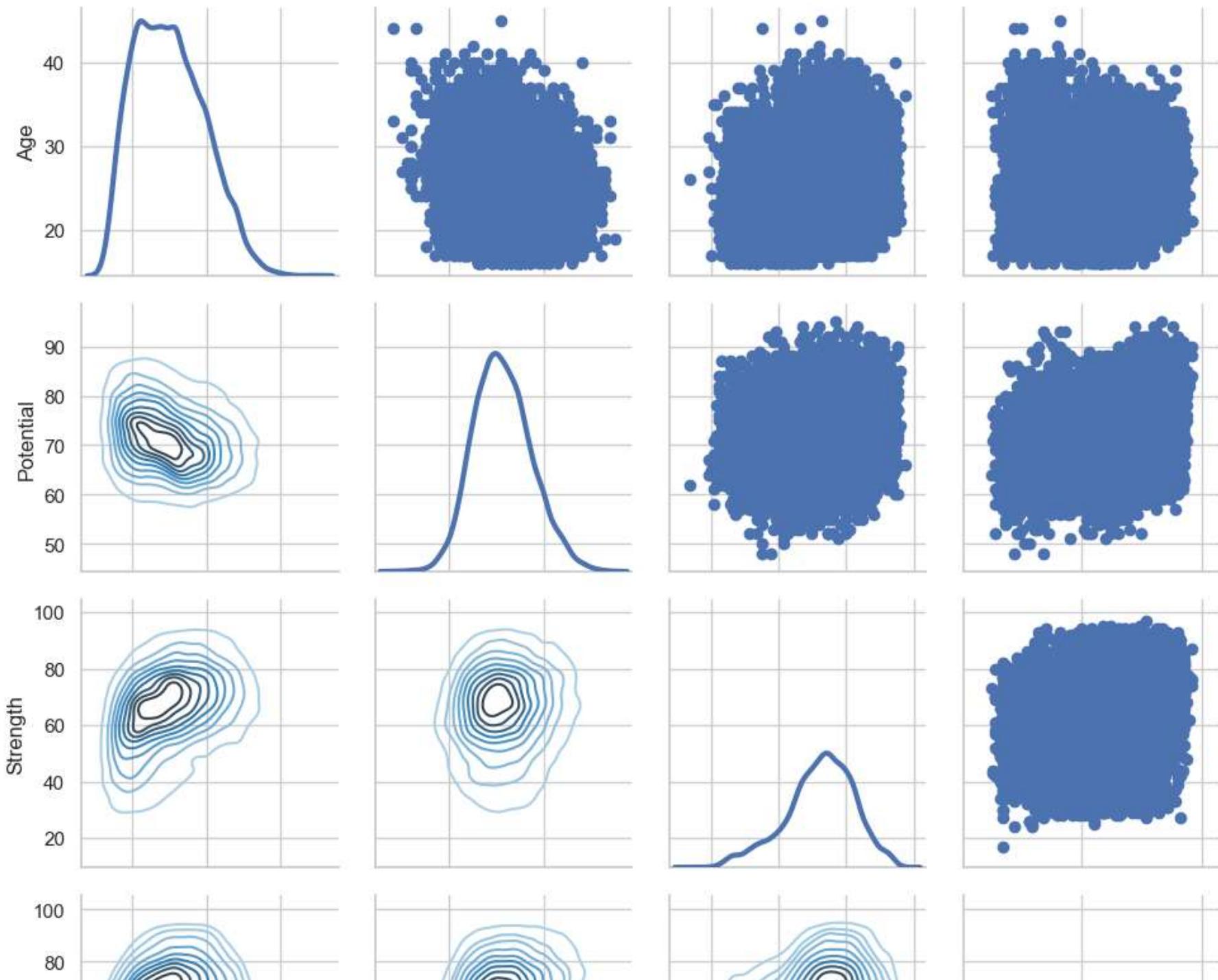
```
In [69]: ┆ g = sns.PairGrid(fifa19_new, hue="Preferred Foot")
g = g.map_diag(plt.hist, histtype="step", linewidth=3)
g = g.map_offdiag(plt.scatter)
g = g.add_legend()
```

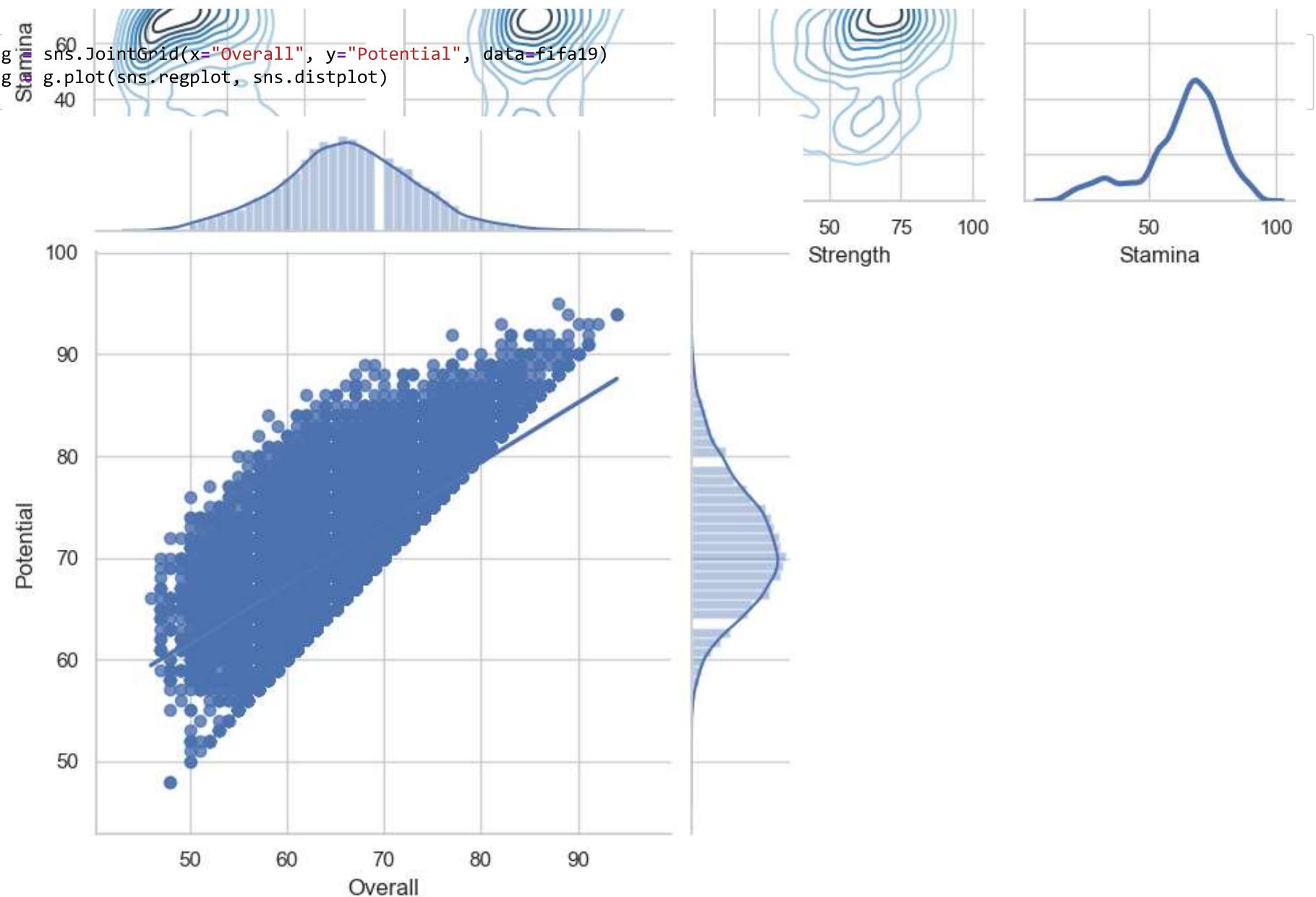
In [70]:



```
In [71]: g = sns.PairGrid(fifa19_new)
g = g.map_upper(plt.scatter)
g = g.map_lower(sns.kdeplot, cmap="Blues_d")
g = g.map_diag(sns.kdeplot, lw=3, legend=False)
```

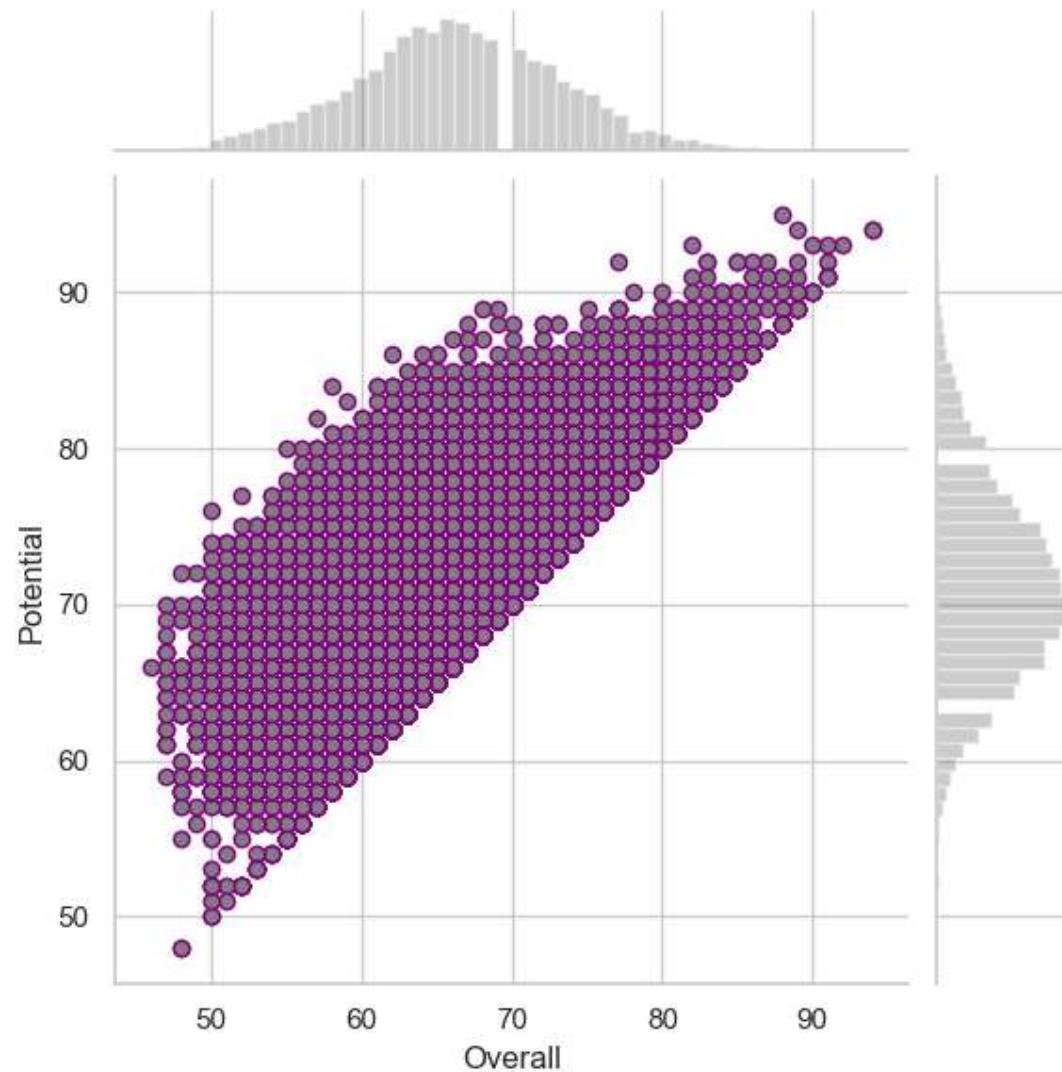



In [72]:

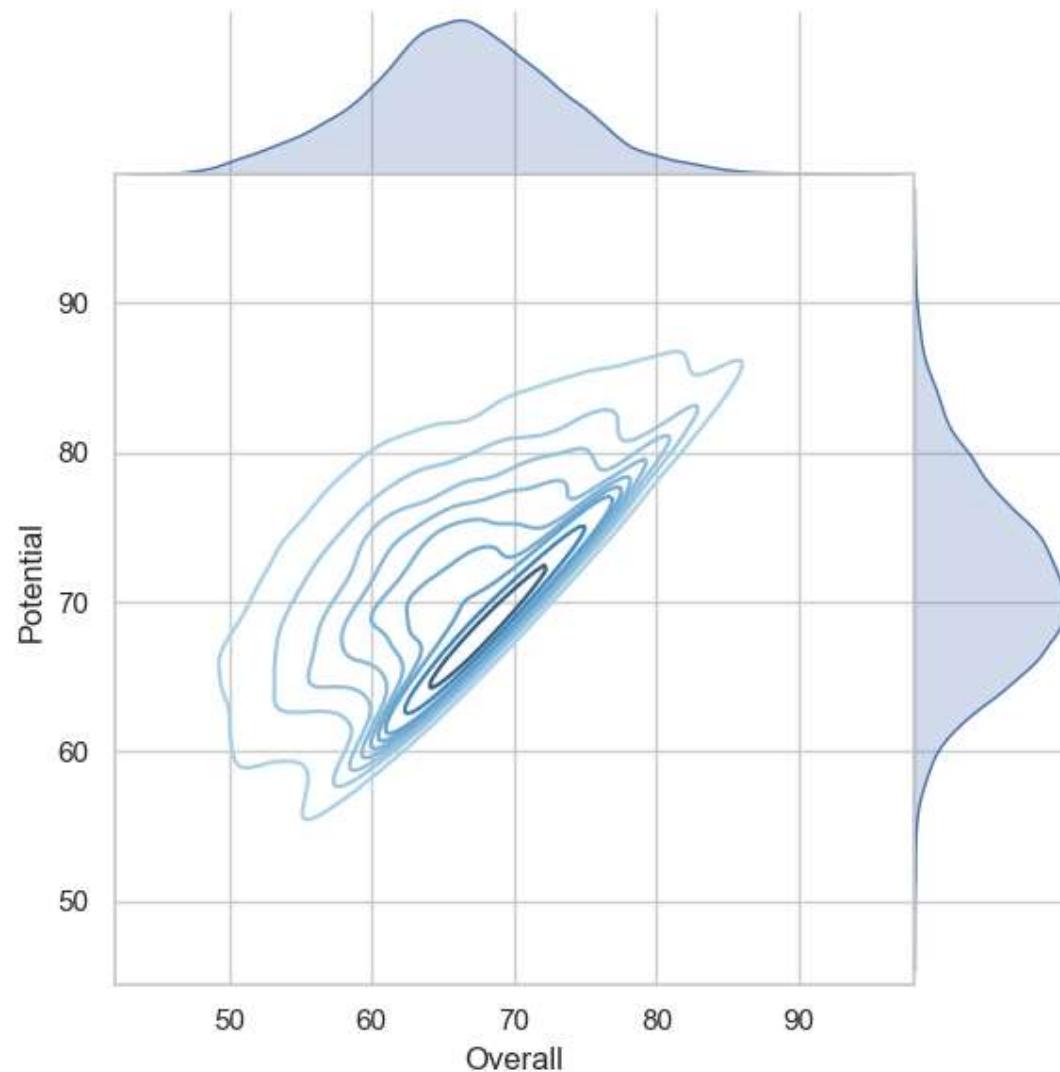


```
In [73]: import matplotlib.pyplot as plt
```

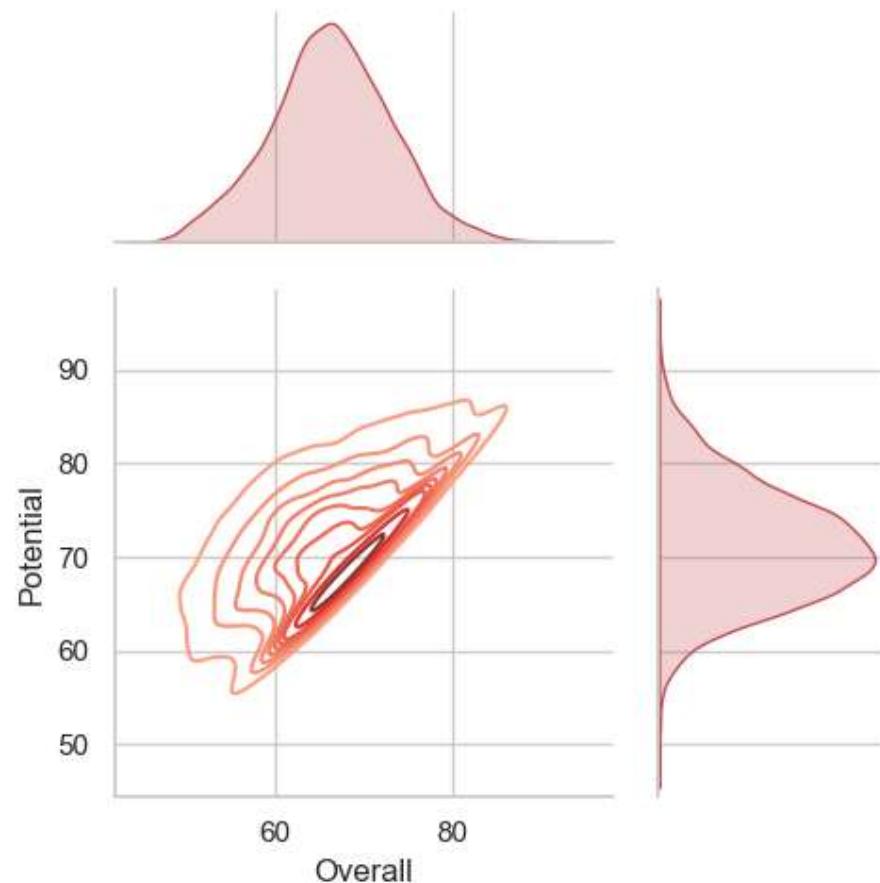
```
In [74]: g = sns.JointGrid(x="Overall", y="Potential", data=fifa19)
g = g.plot_joint(plt.scatter, color=".5", edgecolor="purple")
g = g.plot_marginals(sns.distplot, kde=False, color=".5")
```



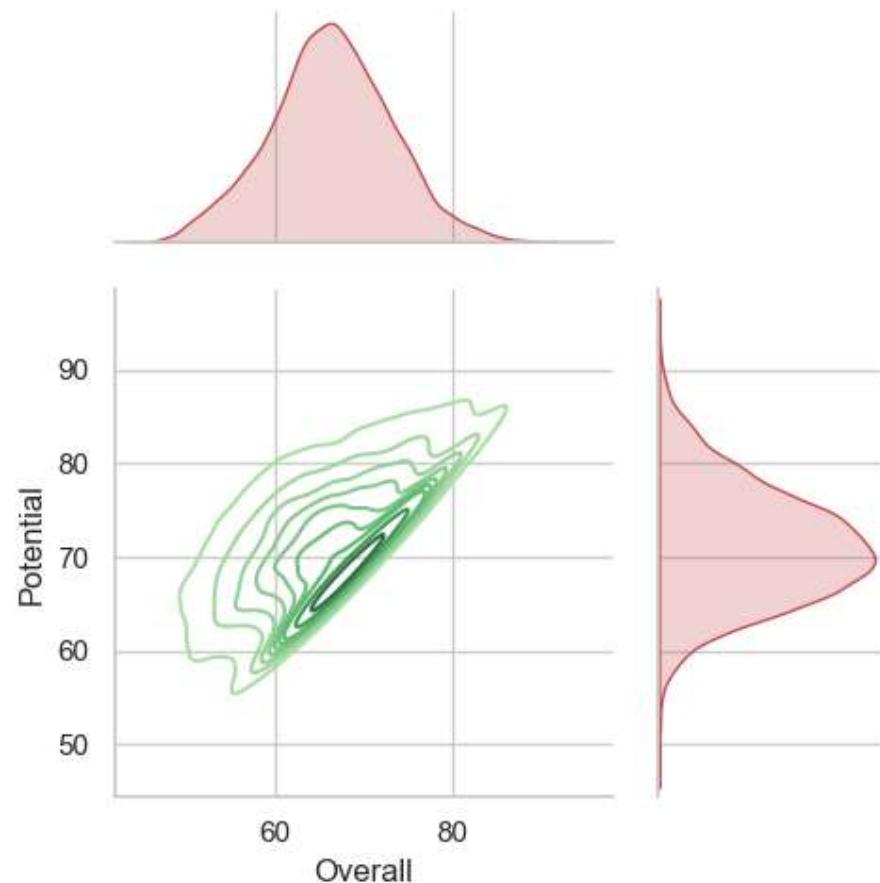
```
In [75]: g = sns.JointGrid(x="Overall", y="Potential", data=fifa19, space=0)
g = g.plot_joint(sns.kdeplot, cmap="Blues_d")
g = g.plot_marginals(sns.kdeplot, shade=True)
```



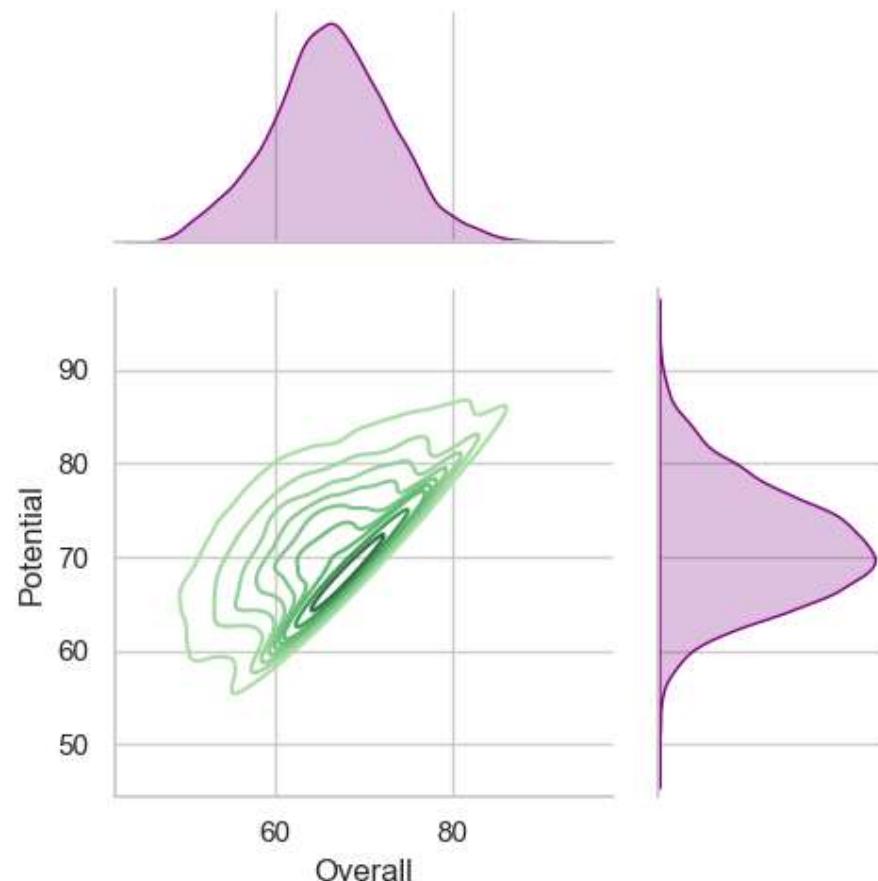
```
In [76]: g = sns.JointGrid(x="Overall", y="Potential", data=fifa19, height=5, ratio=2)
g = g.plot_joint(sns.kdeplot, cmap="Reds_d")
g = g.plot_marginals(sns.kdeplot, color="r", shade=True)
```



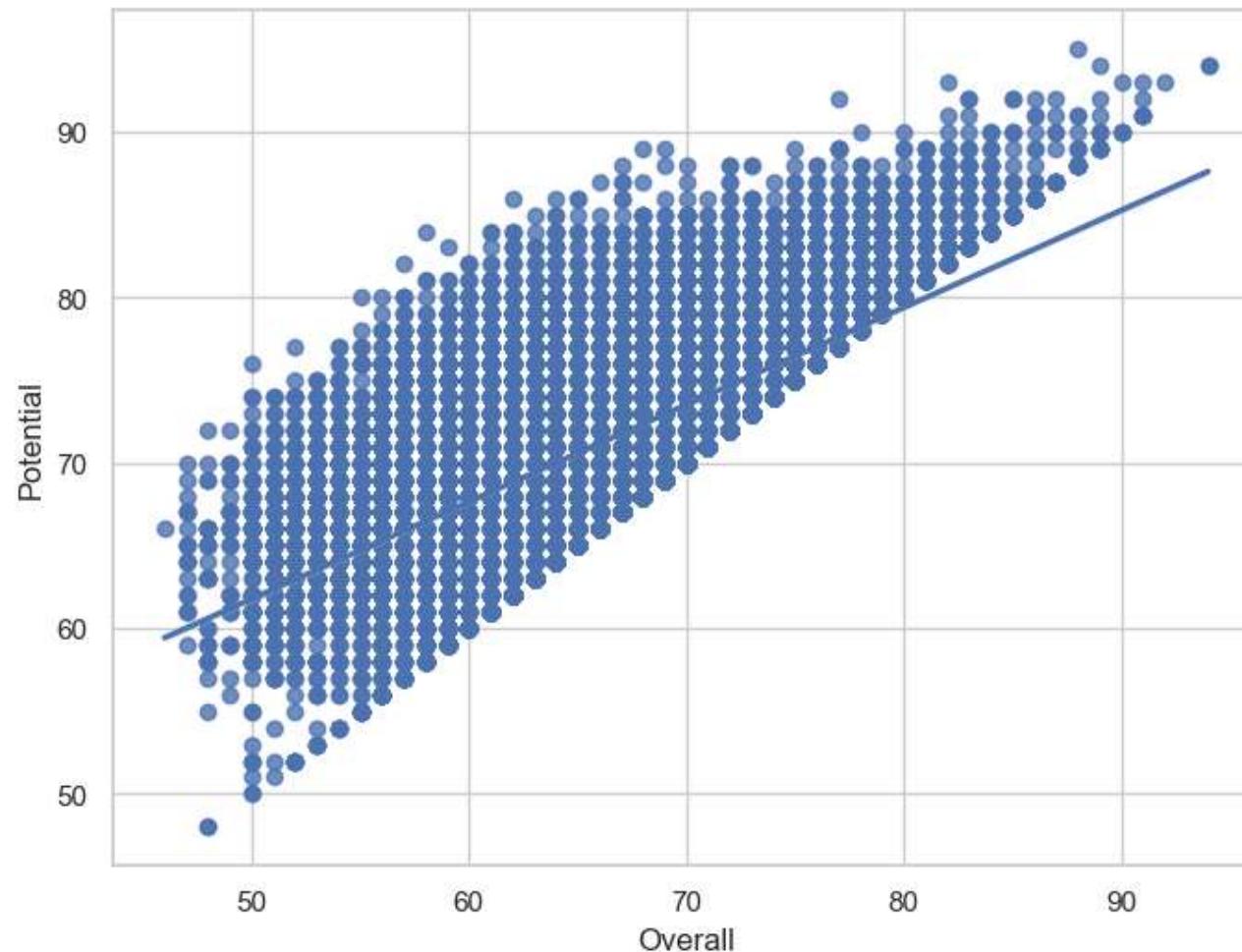
```
In [77]: g = sns.JointGrid(x="Overall", y="Potential", data=fifa19, height=5, ratio=2)
g = g.plot_joint(sns.kdeplot, cmap="Greens_d")
g = g.plot_marginals(sns.kdeplot, color="r", shade=True)
```



```
In [78]: g = sns.JointGrid(x="Overall", y="Potential", data=fifa19, height=5, ratio=2)
g = g.plot_joint(sns.kdeplot, cmap="Greens_d")
g = g.plot_marginals(sns.kdeplot, color="purple", shade=True)
```

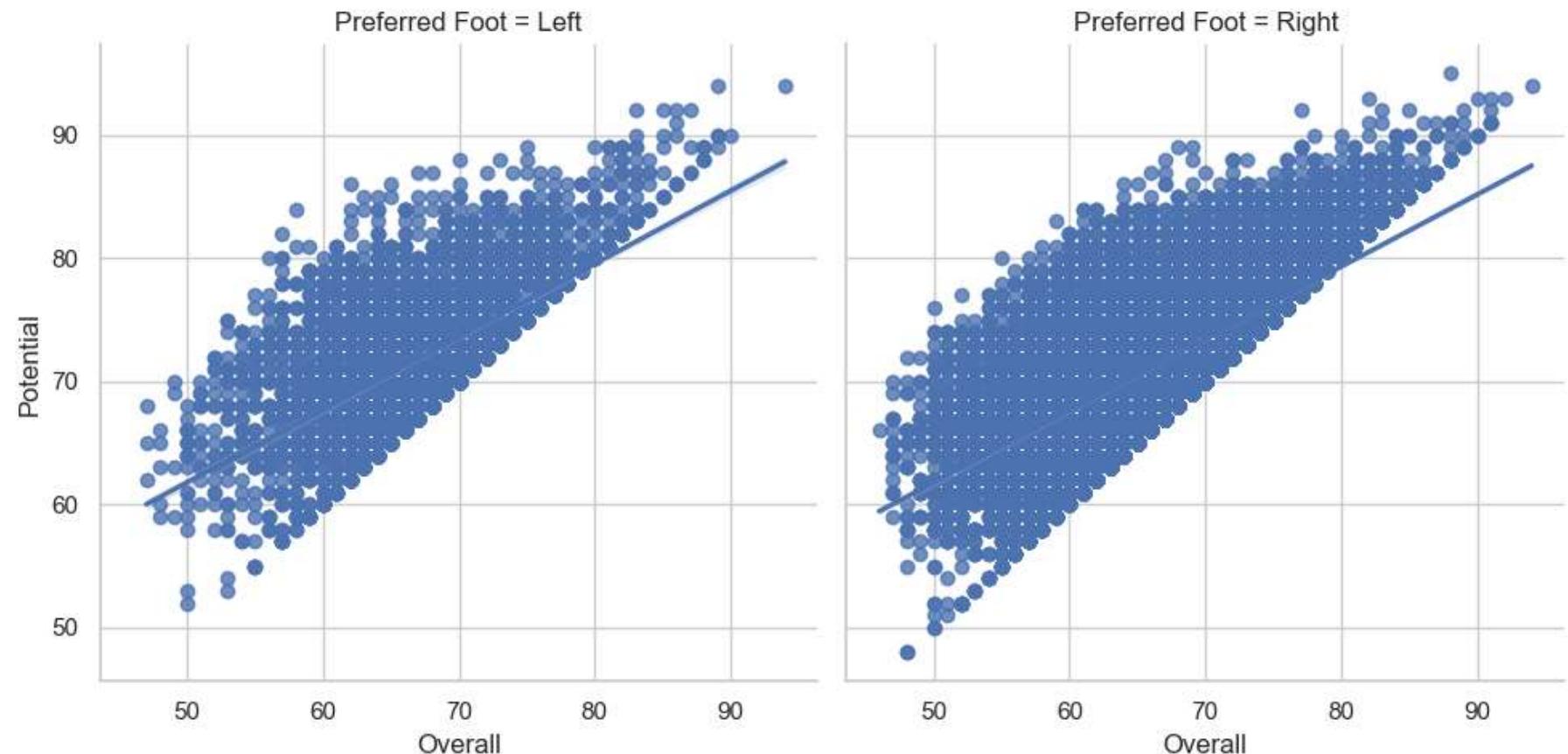


```
In [79]: f, ax = plt.subplots(figsize=(8, 6))
ax = sns.regplot(x="Overall", y="Potential", data=fifa19);
```



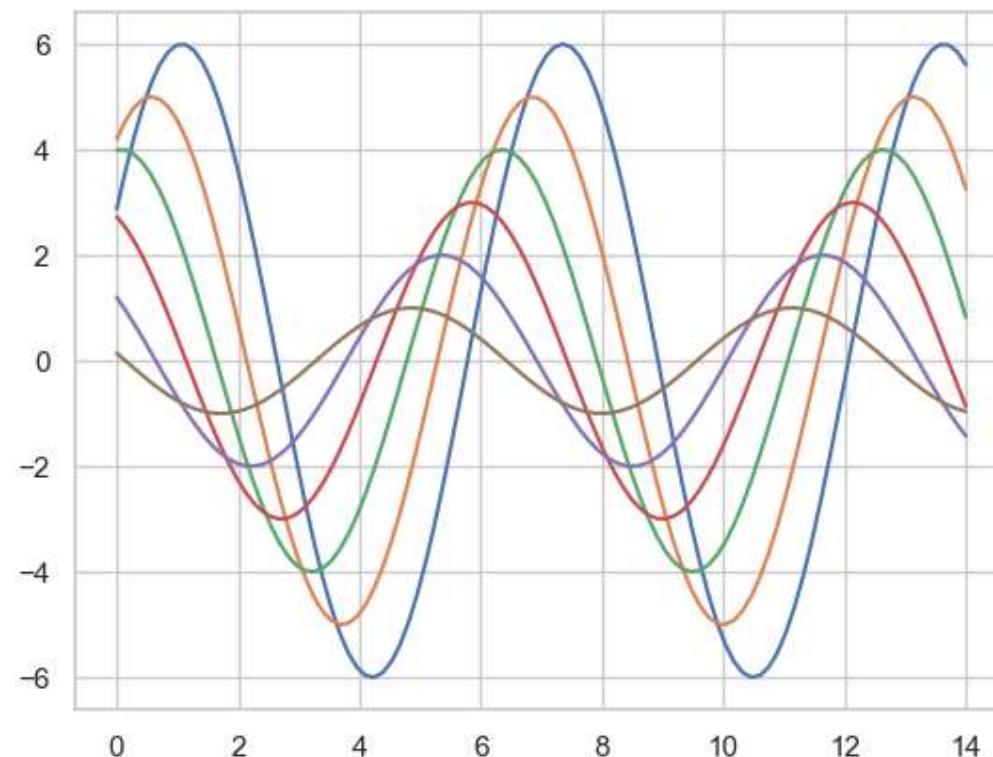
```
In [80]: sns.lmplot(x="Overall", y="Potential", col="Preferred Foot", data=fifa19, col_wrap=2, height=5, aspect=1)
```

```
Out[80]: <seaborn.axisgrid.FacetGrid at 0x286d0f1a650>
```

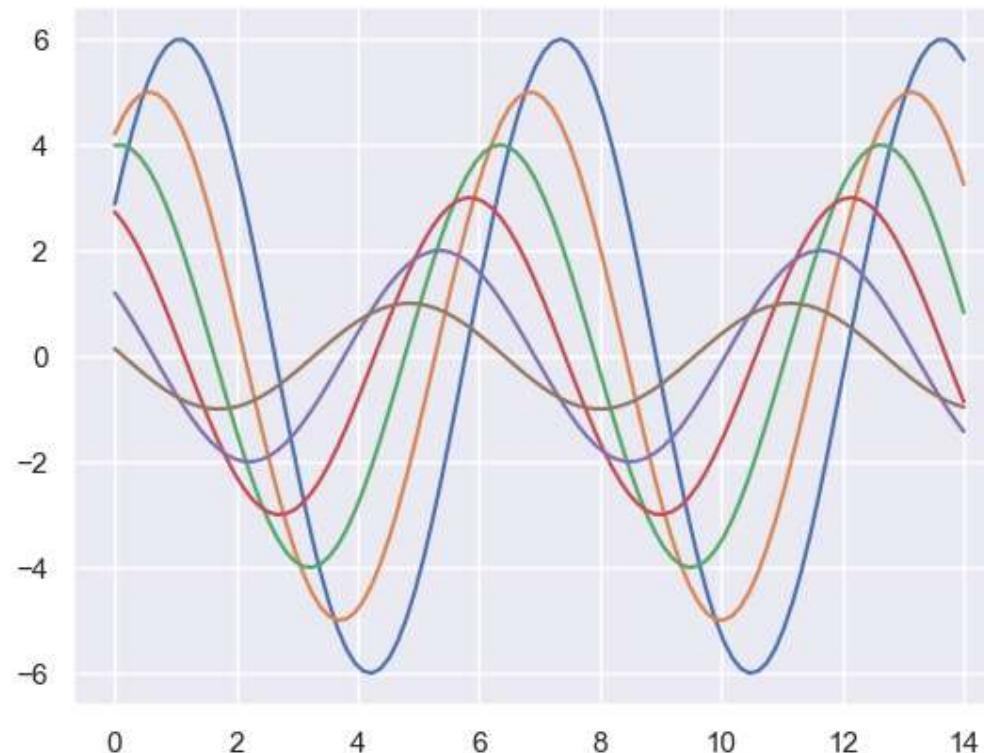


```
In [81]: def sinplot(flip=1):
    x = np.linspace(0, 14, 100)
    for i in range(1, 7):
        plt.plot(x, np.sin(x + i * .5) * (7 - i) * flip)
```

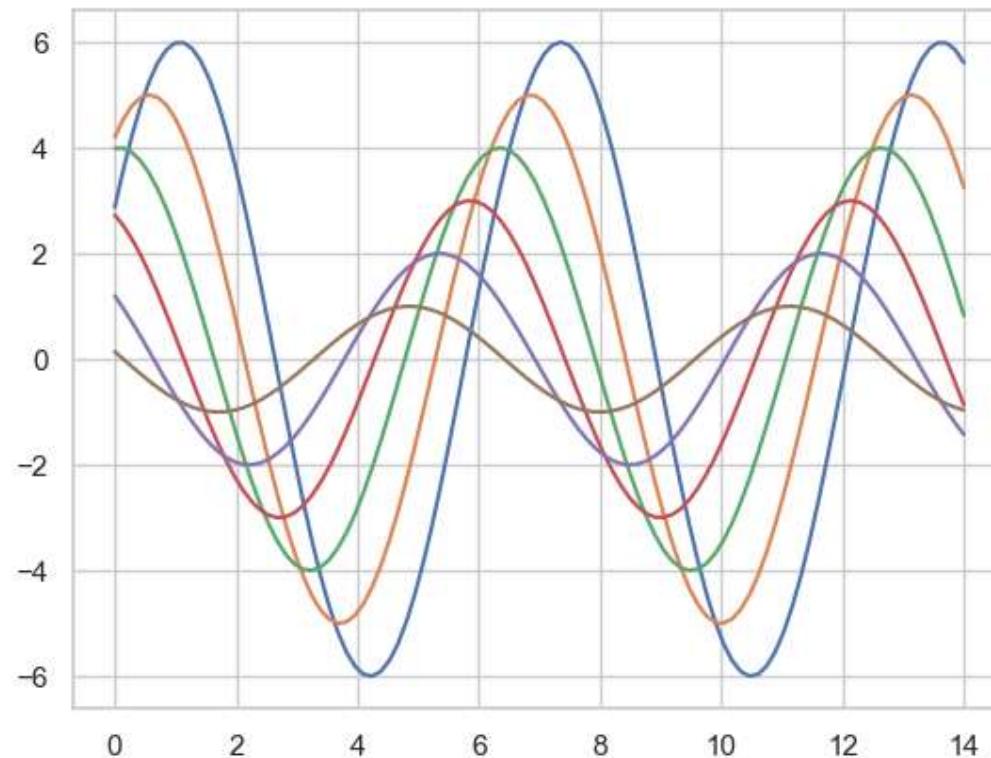
In [82]: sinplot()



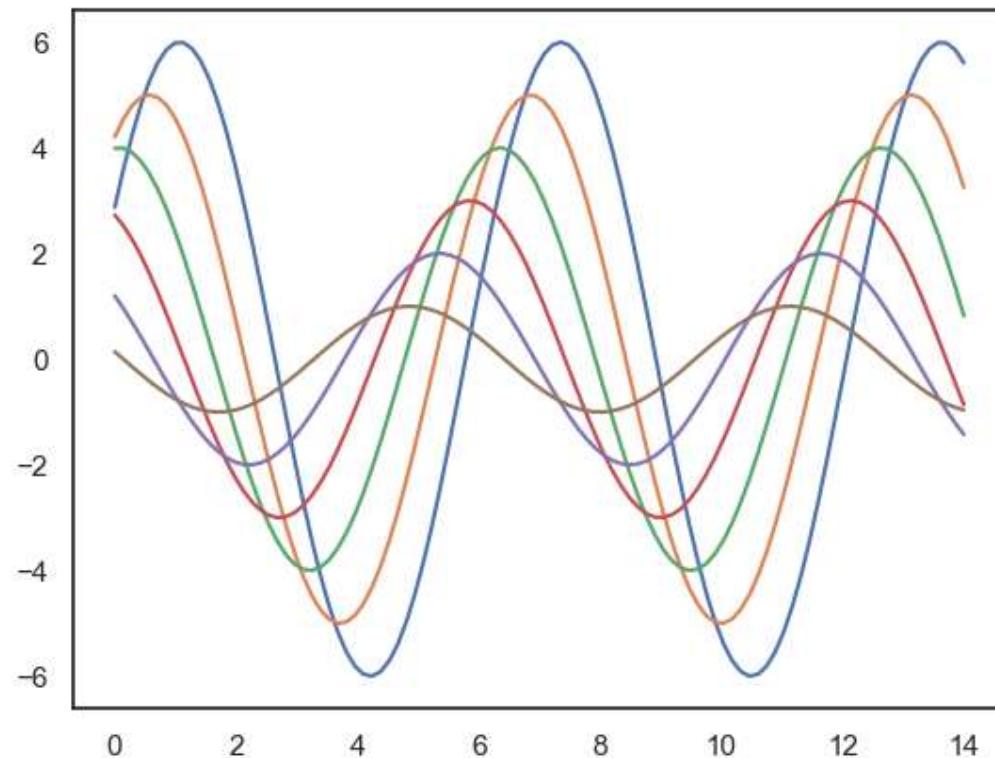
In [83]:  sns.set()
sinplot()



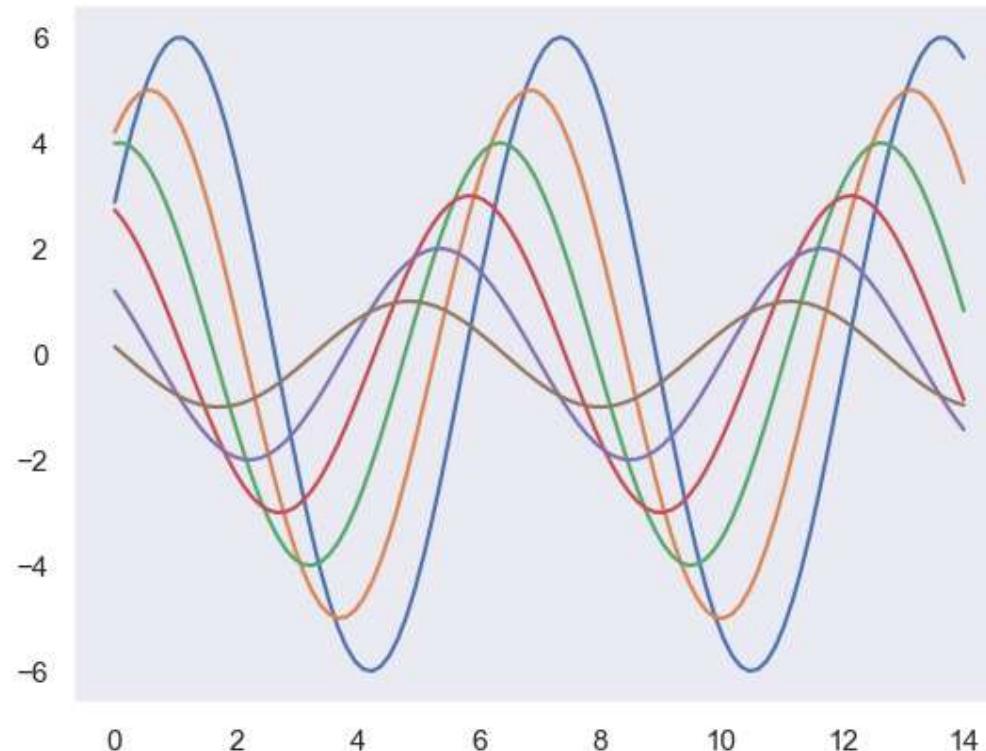
In [84]:  `sns.set_style("whitegrid")
sinplot()`



In [85]:  sns.set_style("white")
sinplot()



In [86]:  sns.set_style("dark")
sinplot()



In [87]:  sns.set_style("ticks")
sinplot()

