

```
In [1]: import numpy as np
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('kaggle\\input'):
    for filename in filenames:
        print(os.path.join(dirname, filename))
```

```
In [2]: import warnings
warnings.filterwarnings('ignore')
```

```
In [3]: fifa19=pd.read_csv(r"D:\\Data Science with AI\\FIFA.csv")
```

```
In [4]: fifa19
```

	Unnamed: 0	ID	Name	Age	Phc
0	0	158023	L. Messi	31	https://cdn.sofifa.org/players/4/19/158023.p
1	1	20801	Cristiano Ronaldo	33	https://cdn.sofifa.org/players/4/19/20801.p
2	2	190871	Neymar Jr	26	https://cdn.sofifa.org/players/4/19/190871.p
3	3	193080	De Gea	27	https://cdn.sofifa.org/players/4/19/193080.p
4	4	192985	K. De Bruyne	27	https://cdn.sofifa.org/players/4/19/192985.p
...
18202	18202	238813	J. Lundstram	19	https://cdn.sofifa.org/players/4/19/238813.p
18203	18203	243165	N. Christoffersson	19	https://cdn.sofifa.org/players/4/19/243165.p
18204	18204	241638	B. Worman	16	https://cdn.sofifa.org/players/4/19/241638.p
18205	18205	246268	D. Walker-Rice	17	https://cdn.sofifa.org/players/4/19/246268.p
18206	18206	246269	G. Nugent	16	https://cdn.sofifa.org/players/4/19/246269.p

18207 rows × 89 columns

In [5]: `fifa19.head()`

Out[5]:

	Unnamed: 0	ID	Name	Age	Photo	Nation
0	0	158023	L. Messi	31	https://cdn.sofifa.org/players/4/19/158023.png	Arg
1	1	20801	Cristiano Ronaldo	33	https://cdn.sofifa.org/players/4/19/20801.png	Po
2	2	190871	Neymar Jr	26	https://cdn.sofifa.org/players/4/19/190871.png	
3	3	193080	De Gea	27	https://cdn.sofifa.org/players/4/19/193080.png	
4	4	192985	K. De Bruyne	27	https://cdn.sofifa.org/players/4/19/192985.png	Be

5 rows × 89 columns

In [6]: `fifa19.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 18207 entries, 0 to 18206
Data columns (total 89 columns):
 #   Column           Non-Null Count Dtype
 --- 
 0   Unnamed: 0        18207 non-null  int64
 1   ID               18207 non-null  int64
 2   Name              18207 non-null  object
 3   Age               18207 non-null  int64
 4   Photo              18207 non-null  object
 5   Nationality       18207 non-null  object
 6   Flag               18207 non-null  object
 7   Overall            18207 non-null  int64
 8   Potential           18207 non-null  int64
 9   Club               17966 non-null  object
 10  Club Logo          18207 non-null  object
 11  Value              18207 non-null  object
 12  Wage               18207 non-null  object
 13  Special             18207 non-null  int64
 14  Preferred Foot     18159 non-null  object
 15  International Reputation 18159 non-null  float64
 16  Weak Foot          18159 non-null  float64
 17  Skill Moves         18159 non-null  float64
 18  Work Rate            18159 non-null  object
 19  Body Type            18159 non-null  object
 20  Real Face            18159 non-null  object
 21  Position             18147 non-null  object
 22  Jersey Number        18147 non-null  float64
 23  Joined              16654 non-null  object
 24  Loaned From          1264 non-null  object
 25  Contract Valid Until 17918 non-null  object
 26  Height              18159 non-null  object
 27  Weight              18159 non-null  object
 28  LS                  16122 non-null  object
 29  ST                  16122 non-null  object
 30  RS                  16122 non-null  object
 31  LW                  16122 non-null  object
 32  LF                  16122 non-null  object
 33  CF                  16122 non-null  object
 34  RF                  16122 non-null  object
 35  RW                  16122 non-null  object
 36  LAM                 16122 non-null  object
 37  CAM                 16122 non-null  object
 38  RAM                 16122 non-null  object
 39  LM                  16122 non-null  object
 40  LCM                 16122 non-null  object
 41  CM                  16122 non-null  object
 42  RCM                 16122 non-null  object
 43  RM                  16122 non-null  object
 44  LWB                 16122 non-null  object
 45  LDM                 16122 non-null  object
 46  CDM                 16122 non-null  object
 47  RDM                 16122 non-null  object
 48  RWB                 16122 non-null  object
 49  LB                  16122 non-null  object
 50  LCB                 16122 non-null  object
 51  CB                  16122 non-null  object
 52  RCB                 16122 non-null  object
 53  RB                  16122 non-null  object
 54  Crossing             18159 non-null  float64
```

```

55 Finishing           18159 non-null float64
56 HeadingAccuracy    18159 non-null float64
57 ShortPassing       18159 non-null float64
58 Volleys            18159 non-null float64
59 Dribbling          18159 non-null float64
60 Curve              18159 non-null float64
61 FKAccuracy         18159 non-null float64
62 LongPassing        18159 non-null float64
63 BallControl         18159 non-null float64
64 Acceleration       18159 non-null float64
65 SprintSpeed        18159 non-null float64
66 Agility             18159 non-null float64
67 Reactions           18159 non-null float64
68 Balance             18159 non-null float64
69 ShotPower           18159 non-null float64
70 Jumping             18159 non-null float64
71 Stamina             18159 non-null float64
72 Strength            18159 non-null float64
73 LongShots          18159 non-null float64
74 Aggression          18159 non-null float64
75 Interceptions      18159 non-null float64
76 Positioning         18159 non-null float64
77 Vision              18159 non-null float64
78 Penalties           18159 non-null float64
79 Composure           18159 non-null float64
80 Marking             18159 non-null float64
81 StandingTackle      18159 non-null float64
82 SlidingTackle       18159 non-null float64
83 GKDiving            18159 non-null float64
84 GKHandling          18159 non-null float64
85 GKKicking            18159 non-null float64
86 GKPositioning       18159 non-null float64
87 GKReflexes          18159 non-null float64
88 Release Clause      16643 non-null object
dtypes: float64(38), int64(6), object(45)
memory usage: 12.4+ MB

```

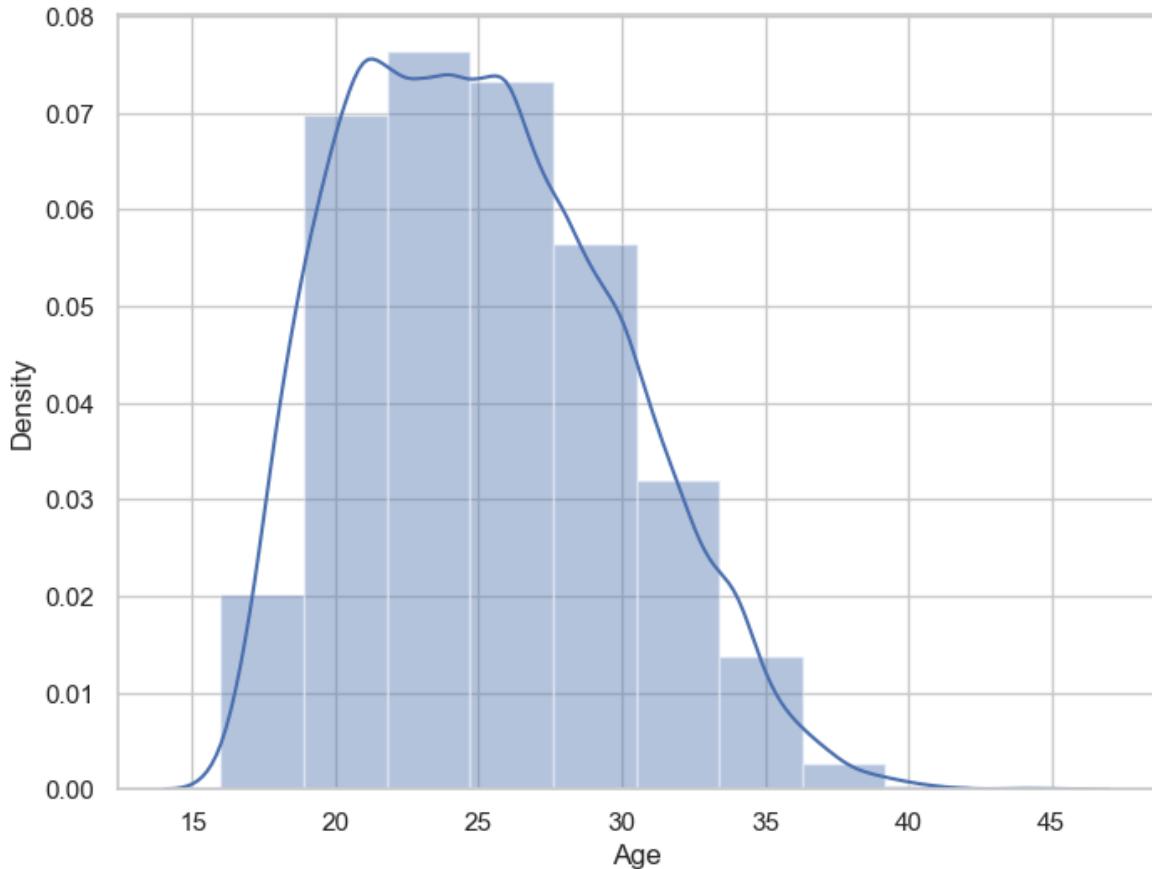
In [7]: `fifa19['Body Type'].value_counts()`

```

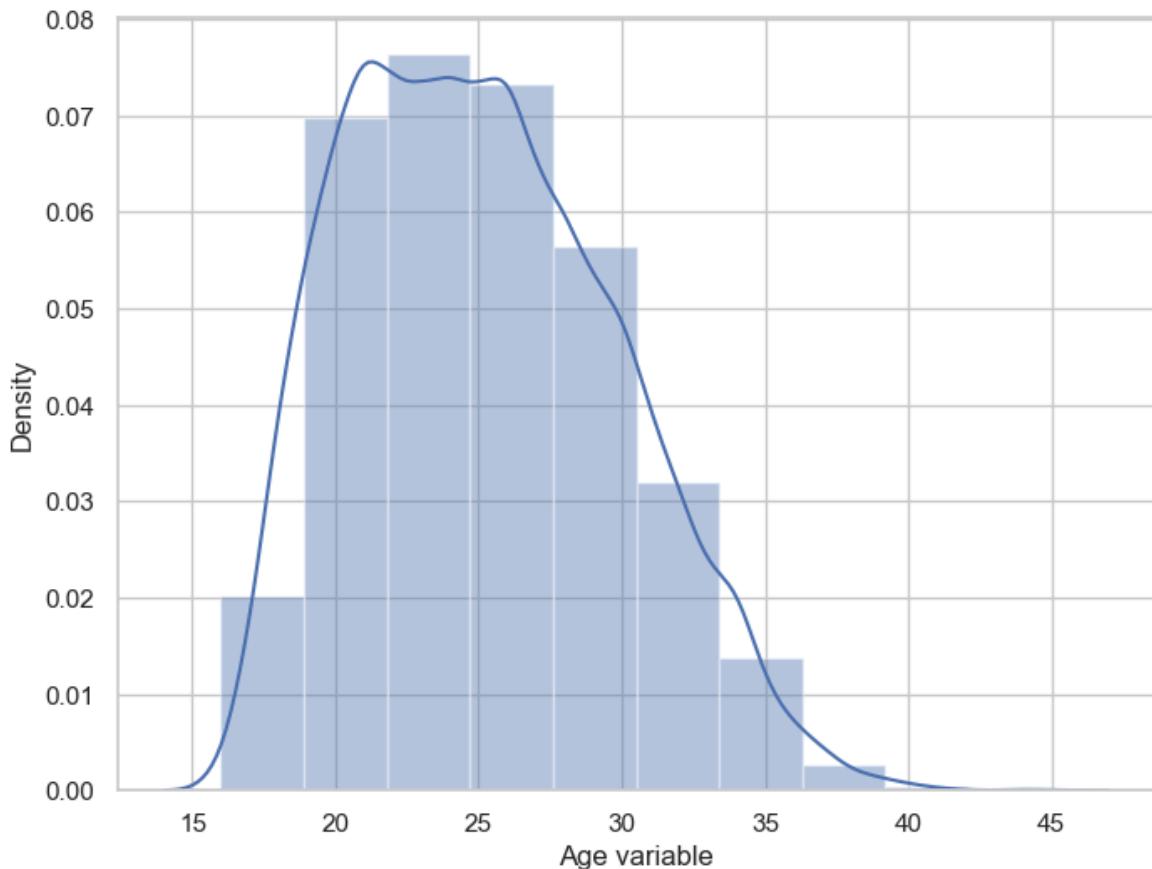
Out[7]: Body Type
Normal           10595
Lean              6417
Stocky            1140
Messi              1
C. Ronaldo        1
Neymar             1
Courtois           1
PLAYER_BODY_TYPE_25  1
Shaqiri            1
Akinfenwa          1
Name: count, dtype: int64

```

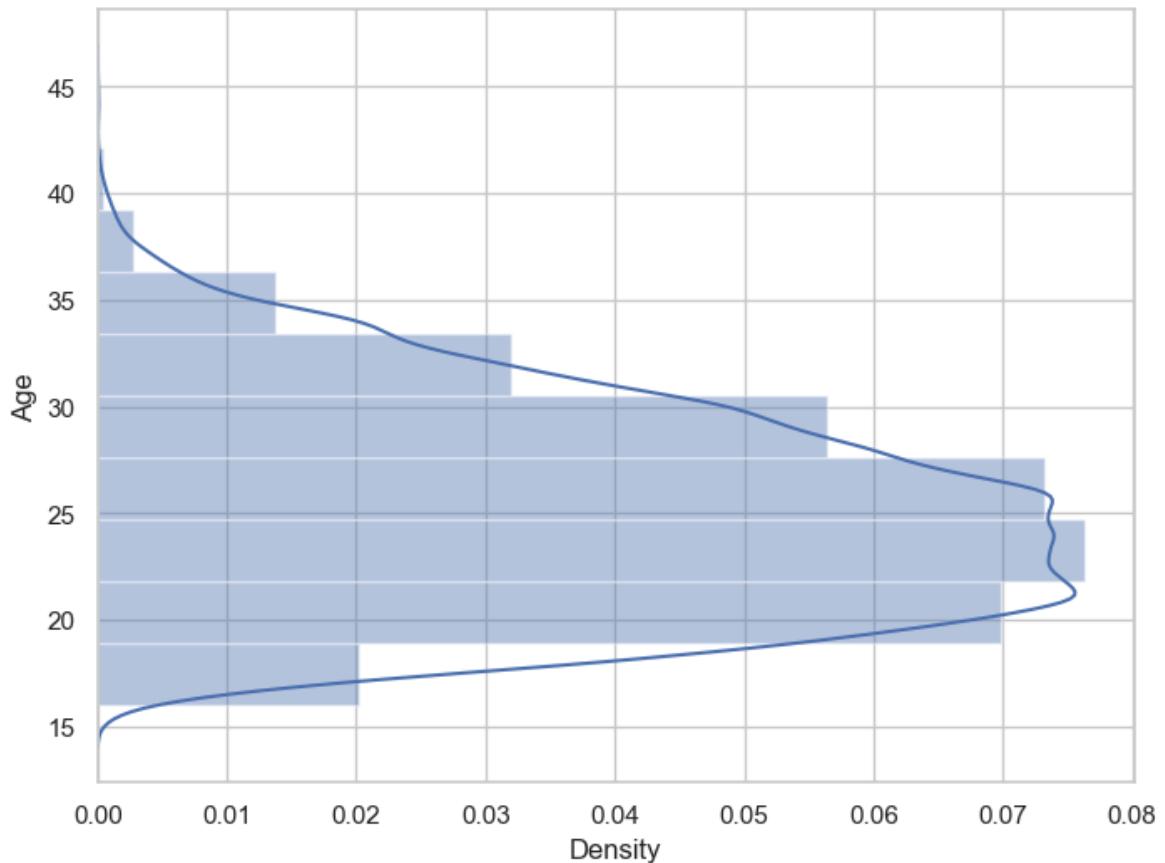
In [8]: `f,ax=plt.subplots(figsize=(8,6))
x=fifa19['Age']
ax=sns.distplot(x,bins=10)
plt.show()`



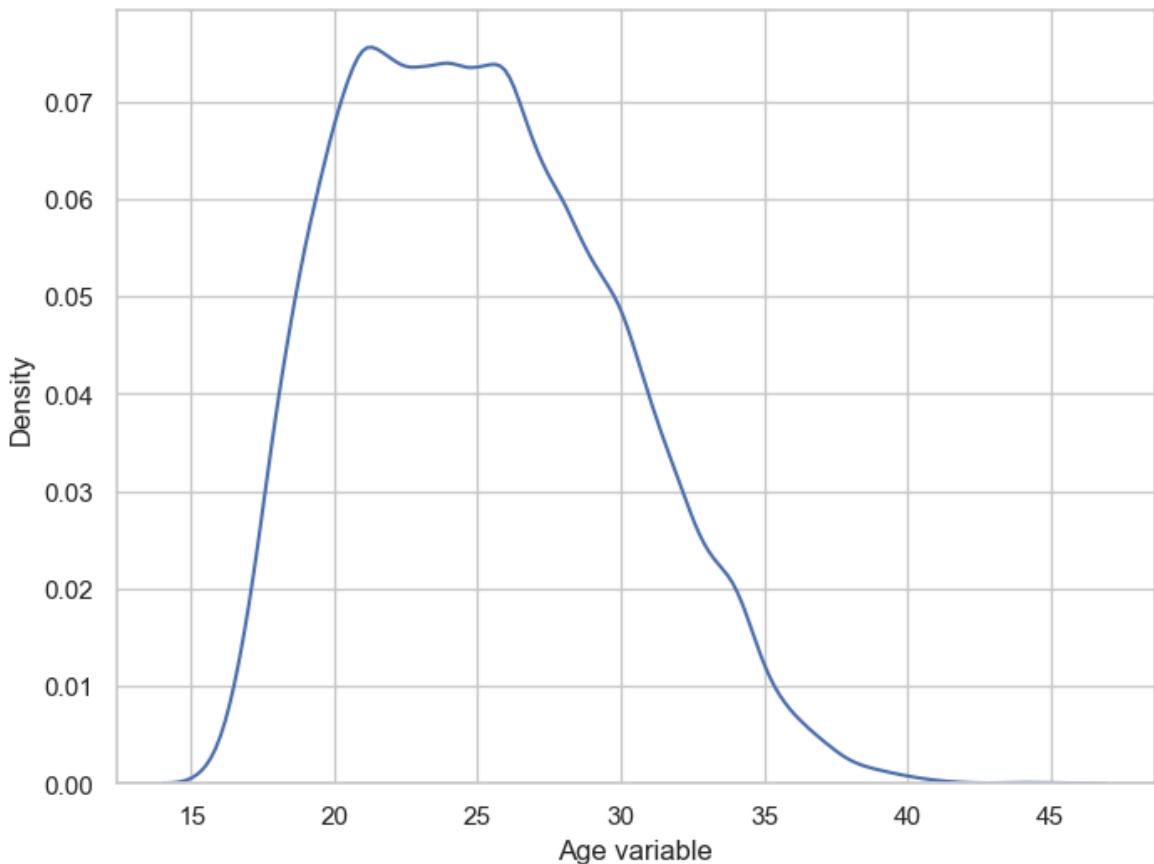
```
In [9]: f,ax=plt.subplots(figsize=(8,6))
x=fifa19['Age']
x=pd.Series(x,name="Age variable")
ax=sns.distplot(x,bins=10)
plt.show()
```



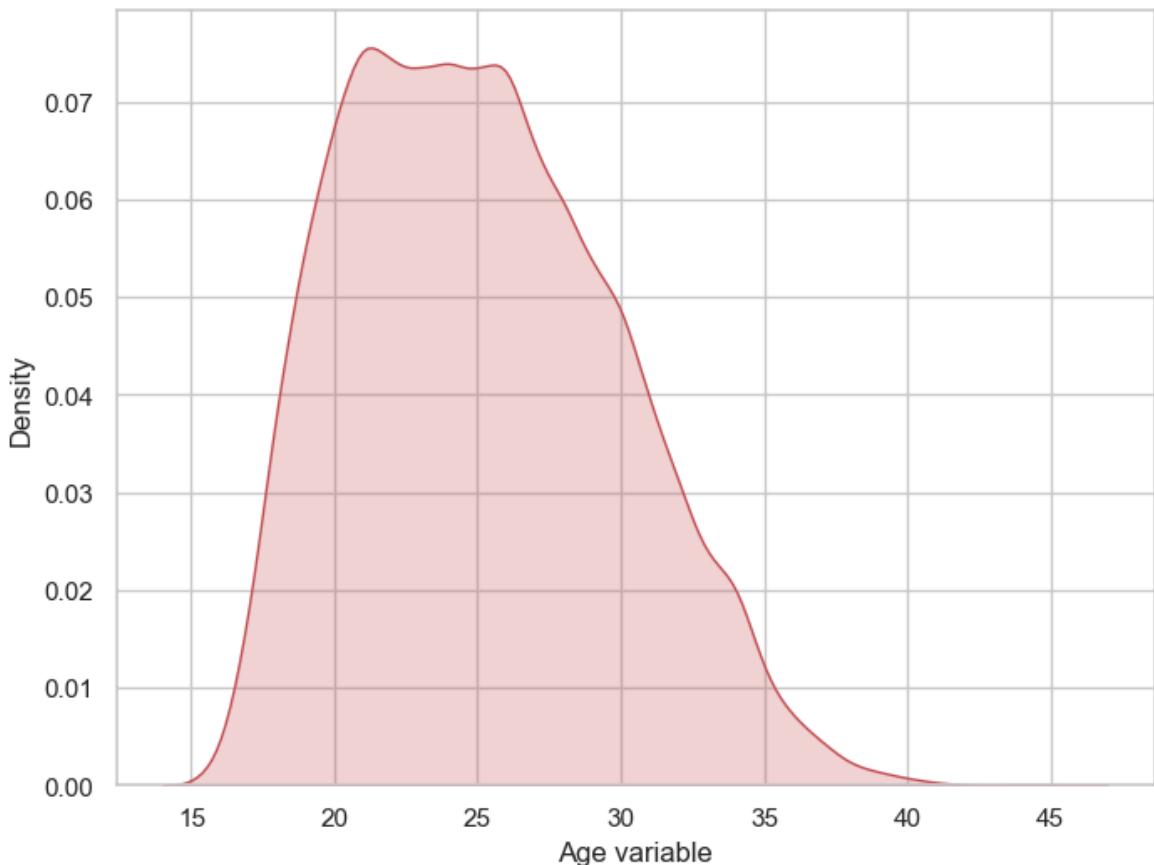
```
In [10]: f,ax=plt.subplots(figsize=(8,6))
x=fifa19['Age']
ax=sns.distplot(x,bins=10,vertical=True)
plt.show()
```



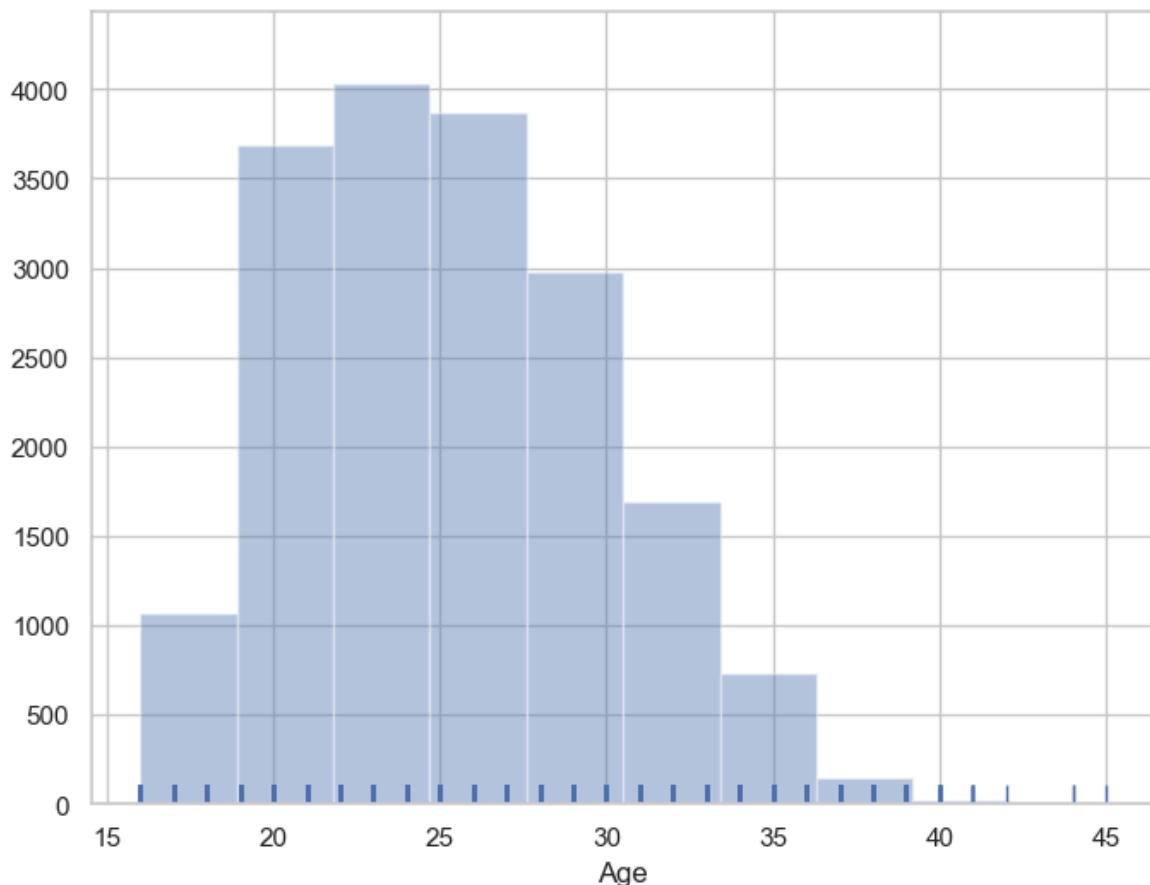
```
In [11]: f,ax=plt.subplots(figsize=(8,6))
x=fifa19['Age']
x=pd.Series(x,name="Age variable")
ax=sns.kdeplot(x)
plt.show()
```



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

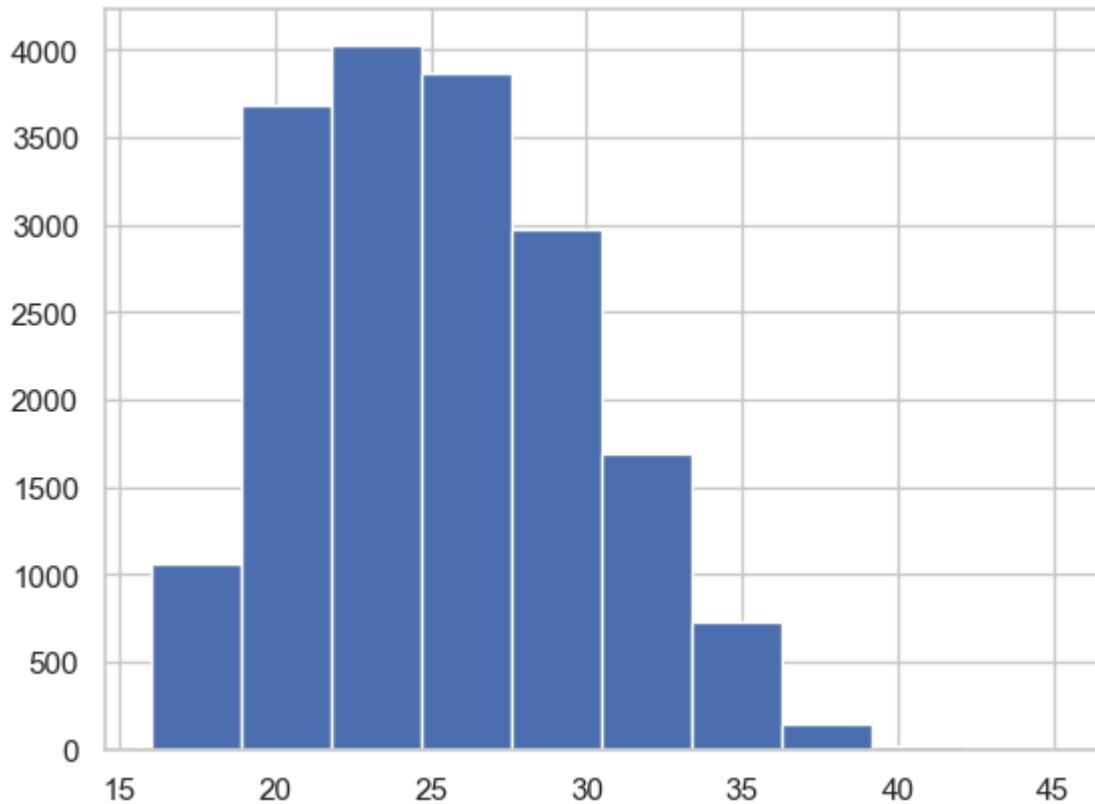


```
In [14]: sns.hist(fifa19['Age'])
```

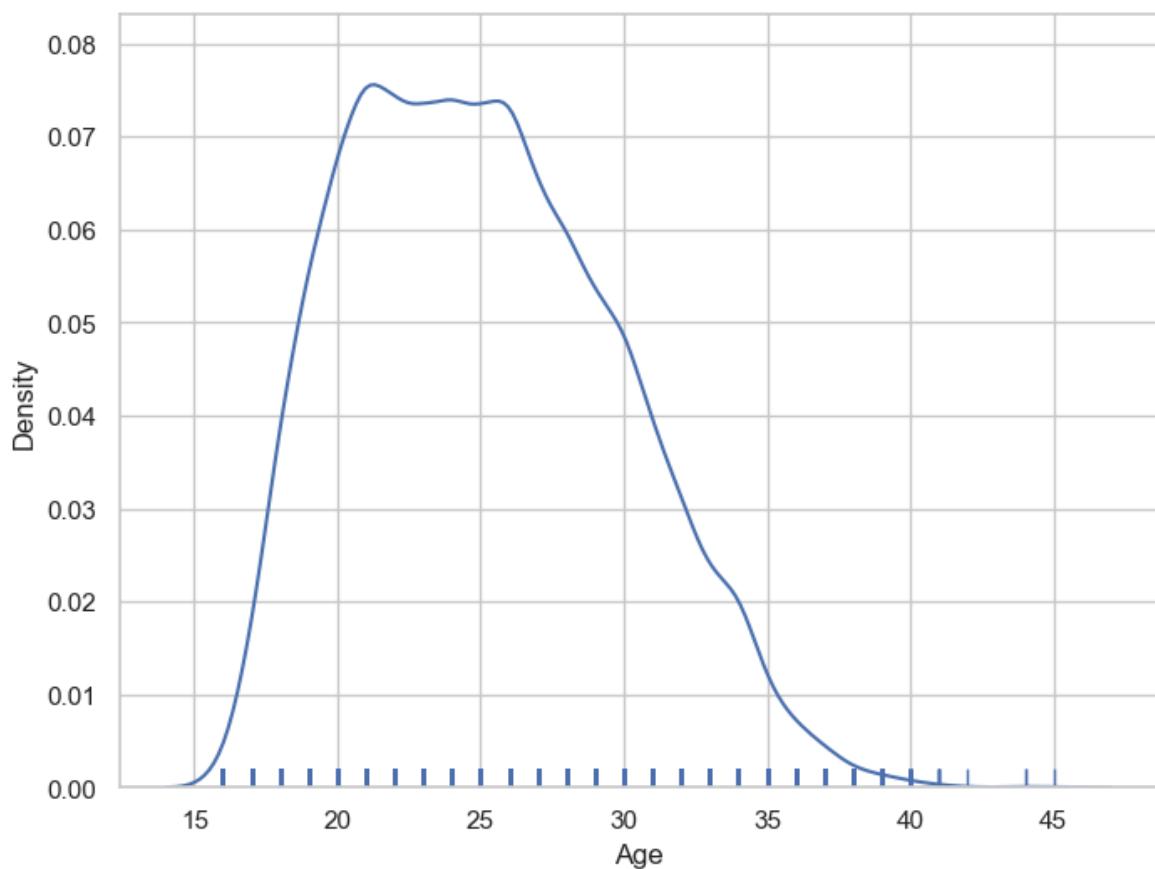
```
-----  
AttributeError                               Traceback (most recent call last)  
Cell In[14], line 1  
----> 1 sns.hist(fifa19['Age'])  
  
AttributeError: module 'seaborn' has no attribute 'hist'
```

```
In [15]: plt.hist(fifa19['Age'])
```

```
Out[15]: (array([1.063e+03, 3.687e+03, 4.030e+03, 3.868e+03, 2.977e+03, 1.689e+03,
   7.270e+02, 1.440e+02, 1.900e+01, 3.000e+00]),  
 array([16. , 18.9, 21.8, 24.7, 27.6, 30.5, 33.4, 36.3, 39.2, 42.1, 45. ]),  
 <BarContainer object of 10 artists>)
```



```
In [16]: f,ax=plt.subplots(figsize=(8,6))
x=fifa19['Age']
ax=sns.distplot(x,hist=False,rug=True,bins=10)
plt.show()
```



```
In [17]: fifa19['Preferred Foot'].nunique()
```

```

KeyError                                         Traceback (most recent call last)
File D:\New folder\Lib\site-packages\pandas\core\indexes\base.py:3805, in Index.get_loc(self, key)
    3804     try:
-> 3805         return self._engine.get_loc(casted_key)
    3806     except KeyError as err:
        ...
File index.pyx:167, in pandas._libs.index.IndexEngine.get_loc()

File index.pyx:196, in pandas._libs.index.IndexEngine.get_loc()

File pandas\\_libs\\hashtable_class_helper.pxi:7081, in pandas._libs.hashtable.PyObjectHashTable.get_item()

File pandas\\_libs\\hashtable_class_helper.pxi:7089, in pandas._libs.hashtable.PyObjectHashTable.get_item()

KeyError: 'Preferred Foot'

The above exception was the direct cause of the following exception:

KeyError                                         Traceback (most recent call last)
Cell In[17], line 1
----> 1 fifa19[...].nunique()

File D:\New folder\Lib\site-packages\pandas\core\frame.py:4102, in DataFrame.__getitem__(self, key)
    4100     if self.columns.nlevels > 1:
    4101         return self._getitem_multilevel(key)
-> 4102     indexer = self.columns.get_loc(key)
    4103     if is_integer(indexer):
    4104         indexer = [indexer]

File D:\New folder\Lib\site-packages\pandas\core\indexes\base.py:3812, in Index.get_loc(self, key)
    3807     if isinstance(casted_key, slice) or (
    3808         isinstance(casted_key, abc.Iterable)
    3809         and any(isinstance(x, slice) for x in casted_key)
    3810     ):
    3811         raise InvalidIndexError(key)
-> 3812     raise KeyError(key) from err
    3813 except TypeError:
    3814     # If we have a listlike key, _check_indexing_error will raise
    3815     # InvalidIndexError. Otherwise we fall through and re-raise
    3816     # the TypeError.
    3817     self._check_indexing_error(key)

KeyError: 'Preferred Foot'

```

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

In []: `fifa19['Preferred Foot']`

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

```
In [18]: f,ax=plt.subplots(figsize=(8,6))
sns.countplot(x="preferred Foot",data=fifa19,color="c")
plt.show()
```

```

-----  

ValueError                                     Traceback (most recent call last)  

Cell In[18], line 2  

    1 f,ax=plt.subplots(figsize=(8,6))  

----> 2 sns.countplot(x=                      ,data=fifa19,color=      )  

    3 plt.show()  

File D:\New folder\Lib\site-packages\seaborn\categorical.py:2631, in countplot(da  

ta, x, y, hue, order, hue_order, orient, color, palette, saturation, fill, hue_no  

rm, stat, width, dodge, gap, log_scale, native_scale, formatter, legend, ax, **kw  

args)  

2628 elif x is not None and y is not None:  

2629     raise TypeError("Cannot pass values for both `x` and `y`.")  

-> 2631 p = _CategoricalAggPlotter(  

2632     data=data,  

2633     variables=dict(x=x, y=y, hue=hue),  

2634     order=order,  

2635     orient=orient,  

2636     color=color,  

2637     legend=legend,  

2638 )  

2640 if ax is None:  

2641     ax = plt.gca()  

File D:\New folder\Lib\site-packages\seaborn\categorical.py:67, in _CategoricalPl  

otter.__init__(self, data, variables, order, orient, require_numeric, color, lege  

nd)  

56 def __init__(  

57     self,  

58     data=None,  

(...):  

64     legend="auto",  

65 ):  

---> 67     super().__init__(data=data, variables=variables)  

69     # This method takes care of some bookkeeping that is necessary because  

e the  

70     # original categorical plots (prior to the 2021 refactor) had some rules  

that  

71     # don't fit exactly into VectorPlotter logic. It may be wise to have  

a second  

(...):  

76     # default VectorPlotter rules. If we do decide to make orient  

part of the  

77     # _base variable assignment, we'll want to figure out how to express  

that.  

78     if self.input_format == "wide" and orient in ["h", "y"]:  

File D:\New folder\Lib\site-packages\seaborn\_base.py:634, in VectorPlotter.__in  
it__(self, data, variables)  

629 # var_ordered is relevant only for categorical axis variables, and may  

630 # be better handled by an internal axis information object that tracks  

631 # such information and is set up by the scale_* methods. The analogous  

632 # information for numeric axes would be information about log scales.  

633 self._var_ordered = {"x": False, "y": False} # alt., used DefaultDict  

--> 634 self.assign_variables(data, variables)  

636 # TODO Lots of tests assume that these are called to initialize the  

637 # mappings to default values on class initialization. I'd prefer to  

638 # move away from that and only have a mapping when explicitly called.  

639 for var in ["hue", "size", "style"]:  

File D:\New folder\Lib\site-packages\seaborn\_base.py:679, in VectorPlotter.assign  
_variables(self, data, variables)

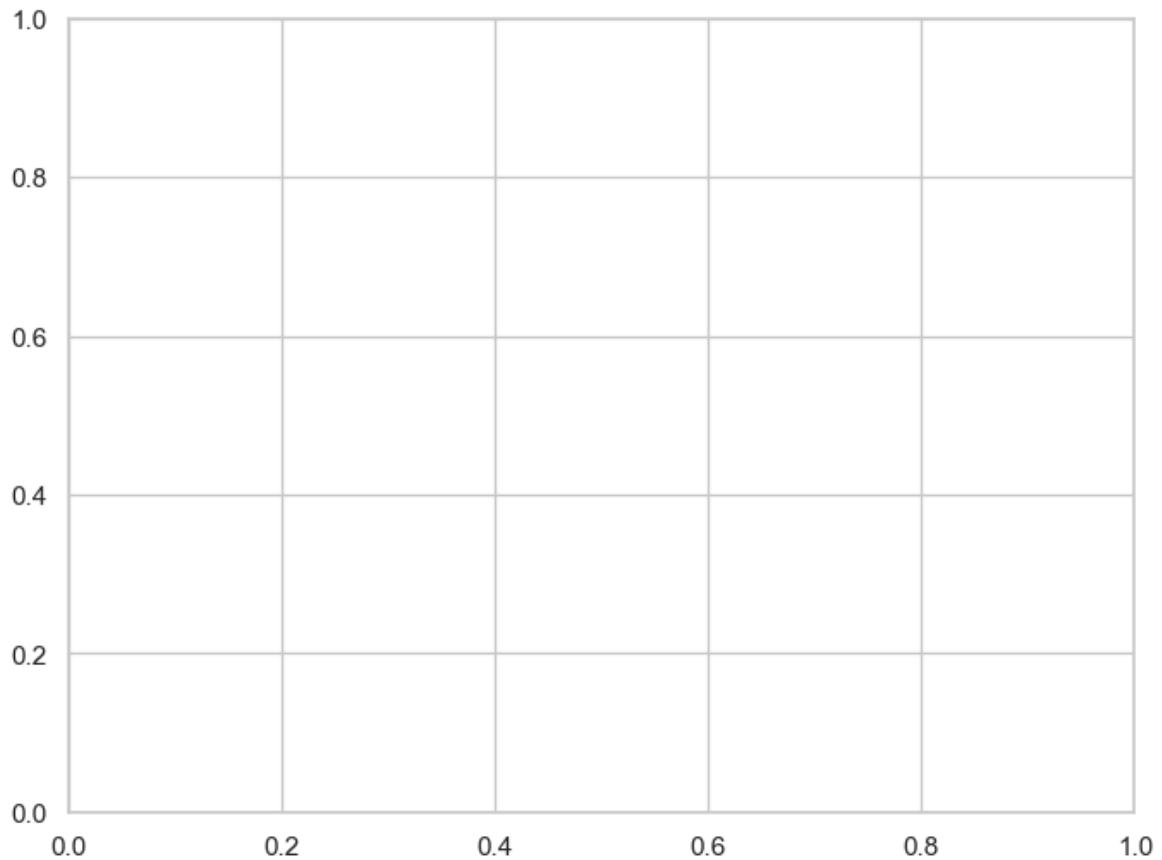
```

```
674 else:
675     # When dealing with long-form input, use the newer PlotData
676     # object (internal but introduced for the objects interface)
677     # to centralize / standardize data consumption logic.
678     self.input_format = "long"
--> 679     plot_data = PlotData(data, variables)
680     frame = plot_data.frame
681     names = plot_data.names

File D:\New folder\Lib\site-packages\seaborn\_core\data.py:58, in PlotData.__init__(self, data, variables)
  51 def __init__(
  52     self,
  53     data: DataSource,
  54     variables: dict[str, VariableSpec],
  55 ):
  56     data = handle_data_source(data)
--> 58     frame, names, ids = self._assign_variables(data, variables)
  59     self.frame = frame
  60     self.names = names

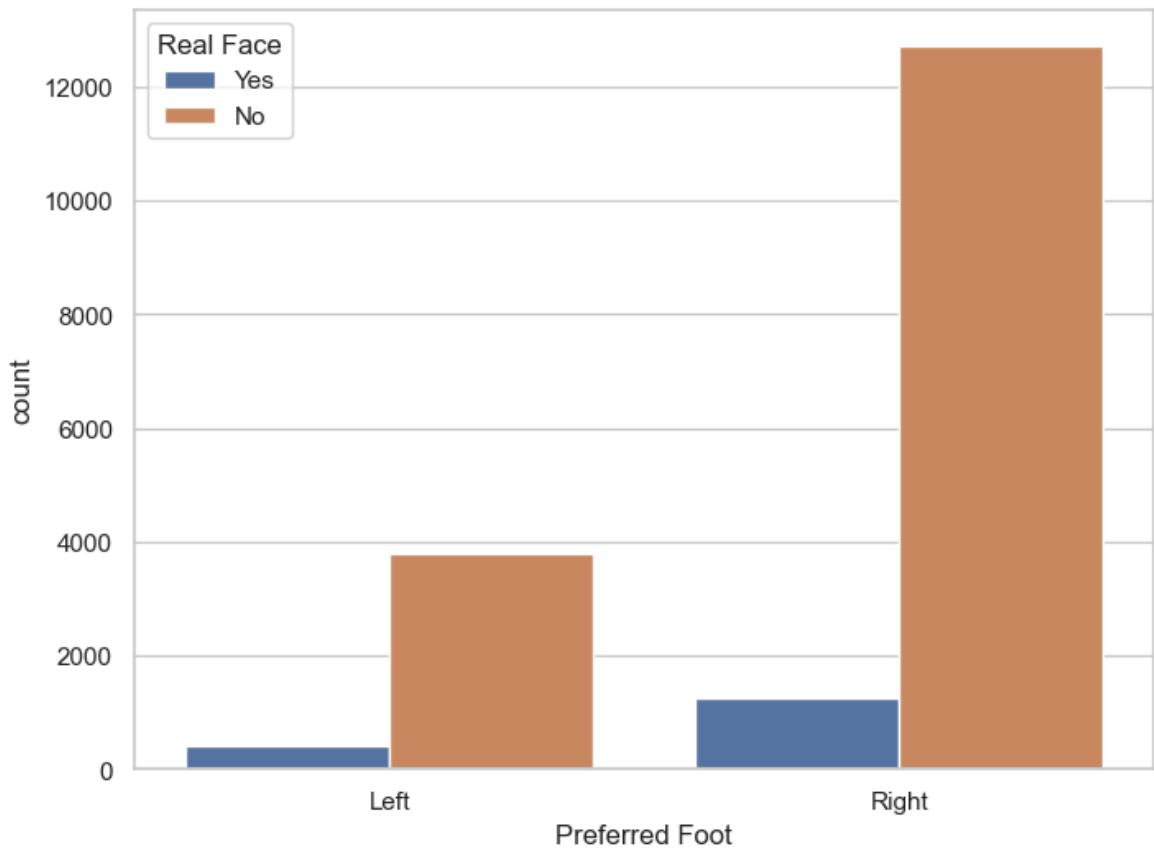
File D:\New folder\Lib\site-packages\seaborn\_core\data.py:232, in PlotData._assign_variables(self, data, variables)
 230     else:
 231         err += "An entry with this name does not appear in `data`."
--> 232     raise ValueError(err)
 233 else:
 234     # Otherwise, assume the value somehow represents data
 235
 236     # Ignore empty data structures
 237     if isinstance(val, Sized) and len(val) == 0:
```

ValueError: Could not interpret value `preferred_Foot` for `x`. An entry with this name does not appear in `data`.

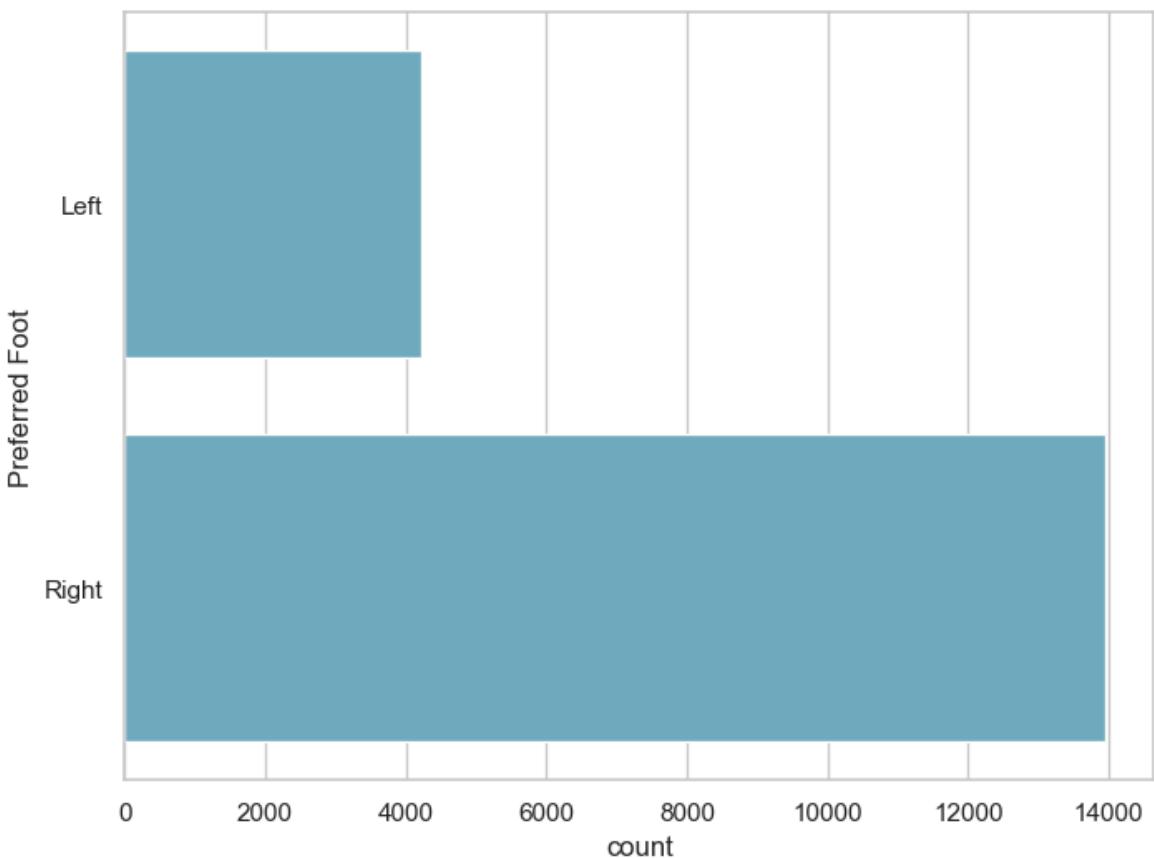


```
In [ ]: f,ax=plt.subplots(figsize=(8,6))
sns.countplot(data=fifa19,x="Preferred Foot",color="c")
plt.show()
```

```
In [19]: f,ax=plt.subplots(figsize=(8,6))
sns.countplot(x='Preferred Foot',data=fifa19,hue="Real Face")
plt.show()
```



```
In [20]: f,ax=plt.subplots(figsize=(8,6))
sns.countplot(y="Preferred Foot",data=fifa19,color="c")
plt.show()
```



```
In [21]: sns.countplot(data=fifa19,vertical=True,color="c")
plt.show()
```

```

-----
AttributeError                                     Traceback (most recent call last)
Cell In[21], line 1
----> 1 sns.countplot(data=fifa19,vertical=True,color=    )
      2 plt.show()

File D:\New folder\Lib\site-packages\seaborn\categorical.py:2675, in countplot(da
ta, x, y, hue, order, hue_order, orient, color, palette, saturation, fill, hue_no
rm, stat, width, dodge, gap, log_scale, native_scale, formatter, legend, ax, **kw
args)
    2671     p.plot_data[count_axis] /= len(p.plot_data) / denom
    2673 aggregator = EstimateAggregator("sum", errorbar=None)
-> 2675 p.plot_bars(
    2676     aggregator=aggregator,
    2677     dodge=dodge,
    2678     width=width,
    2679     gap=gap,
    2680     color=color,
    2681     fill=fill,
    2682     capsize=0,
    2683     err_kws={},
    2684     plot_kws=kwargs,
    2685 )
    2687 p._add_axis_labels(ax)
    2688 p._adjust_cat_axis(ax, axis=p.orient)

File D:\New folder\Lib\site-packages\seaborn\categorical.py:1315, in _Categorical
Plotter.plot_bars(self, aggregator, dodge, gap, width, fill, color, capsize, err_
kws, plot_kws)
    1312 else:
    1313     kws.update(color=main_color, edgecolor=main_color, facecolor="none")
-> 1315 bar_func(**{**kws, **plot_kws})
    1317 if aggregator.error_method is not None:
    1318     self.plot_errorbars(
    1319         ax, agg_data, capsize,
    1320         {"color": ".26" if fill else main_color, **err_kws}
    1321     )

File D:\New folder\Lib\site-packages\matplotlib\__init__.py:1521, in _preprocess_
data.<locals>.inner(ax, data, *args, **kwargs)
    1518 @functools.wraps(func)
    1519 def inner(ax, *args, data=None, **kwargs):
    1520     if data is None:
-> 1521         return func(
    1522             ax,
    1523             *map(cbook.sanitize_sequence, args),
    1524             **{k: cbook.sanitize_sequence(v) for k, v in kwargs.items()})
    1526     bound = new_sig.bind(ax, *args, **kwargs)
    1527     auto_label = (bound.arguments.get(label_namer)
    1528                   or bound.kwargs.get(label_namer))

File D:\New folder\Lib\site-packages\matplotlib\axes\_axes.py:2643, in Axes.bar(s
elf, x, height, width, bottom, align, **kwargs)
    2634 for l, b, w, h, c, e, lw, htch, lbl in args:
    2635     r = mpatches.Rectangle(
    2636         xy=(l, b), width=w, height=h,
    2637         facecolor=c,
    (...)> 2641         hatch=htch,
    2642     )
-> 2643     r._internal_update(kwargs)

```

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2644     r.get_path().__interpolation_steps = 100
2645     if orientation == 'vertical':
2646
2647         File D:\New folder\Lib\site-packages\matplotlib\artist.py:1233, in Artist._internal_update(self, kwargs)
2648             def _internal_update(self, kwargs):
2649                 """
2650                     Update artist properties without prenormalizing them, but generating
2651                     errors as if calling `set`.
2652
2653                     The lack of prenormalization is to maintain backcompatibility.
2654
2655
2656             -> 1233     return self._update_props(
2657                         kwargs, {cls.__name__}
2658
2659
2660             1235         {prop_name!r} )
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AttributeError                                     Traceback (most recent call last)
Cell In[22], line 1
----> 1 sns.countplot(fifa19[                 ],vertical=True)

File D:\New folder\Lib\site-packages\seaborn\categorical.py:2661, in countplot(da
ta, x, y, hue, order, hue_order, orient, color, palette, saturation, fill, hue_no
rm, stat, width, dodge, gap, log_scale, native_scale, formatter, legend, ax, **kw
args)
    2659 saturation = saturation if fill else 1
    2660 p.map_hue(palette=palette, order=hue_order, norm=hue_norm, saturation=sat
uration)
-> 2661 color = _default_color(ax.bar, hue, color, kwargs, saturation)
    2663 count_axis = {"x": "y", "y": "x"}[p.orient]
    2664 if p.input_format == "wide":

File D:\New folder\Lib\site-packages\seaborn\utils.py:127, in _default_color(meth
od, hue, color, kws, saturation)
    122     scout.remove()
    124 elif method.__name__ == "bar":
    125
    126     # bar() needs masked, not empty data, to generate a patch
--> 127     scout, = method([np.nan], [np.nan], **kws)
    128     color = to_rgb(scout.get_facecolor())
    129     scout.remove()

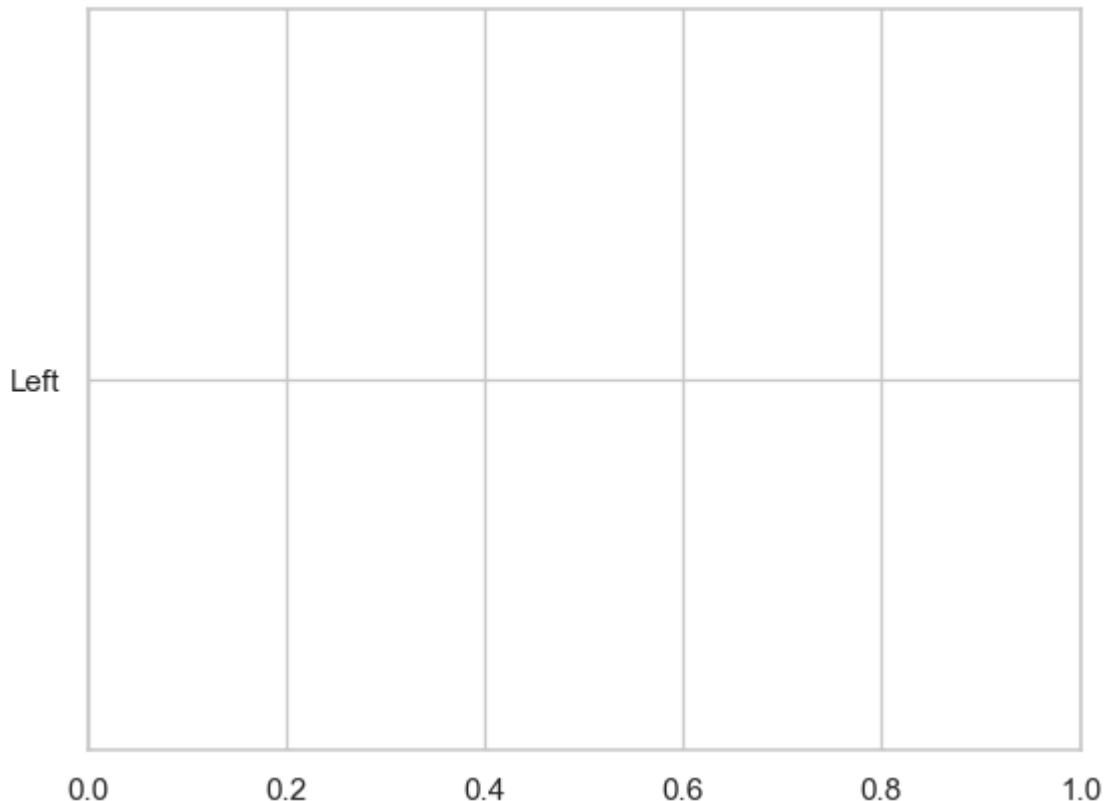
File D:\New folder\Lib\site-packages\matplotlib\__init__.py:1521, in _preprocess_
data.<locals>.inner(ax, data, *args, **kwargs)
    1518 @functools.wraps(func)
    1519 def inner(ax, *args, data=None, **kwargs):
    1520     if data is None:
-> 1521         return func(
    1522             ax,
    1523             *map(cbook.sanitize_sequence, args),
    1524             **{k: cbook.sanitize_sequence(v) for k, v in kwargs.items()})
    1525     bound = new_sig.bind(ax, *args, **kwargs)
    1526     auto_label = (bound.arguments.get(label_namer)
    1527                   or bound.kwargs.get(label_namer))

File D:\New folder\Lib\site-packages\matplotlib\axes\_axes.py:2643, in Axes.bar(s
elf, x, height, width, bottom, align, **kwargs)
    2634 for l, b, w, h, c, e, lw, htch, lbl in args:
    2635     r = mpatches.Rectangle(
    2636         xy=(l, b), width=w, height=h,
    2637         facecolor=c,
    (...)> 2641         hatch=htch,
    2642     )
-> 2643     r._internal_update(kwargs)
    2644     r.get_path().interpolation_steps = 100
    2645     if orientation == 'vertical':

File D:\New folder\Lib\site-packages\matplotlib\artist.py:1233, in Artist._intern
al_update(self, kwargs)
    1226 def _internal_update(self, kwargs):
    1227     """
    1228     Update artist properties without prenormalizing them, but generating
    1229     errors as if calling `set`.
    1230
    1231     The lack of prenormalization is to maintain backcompatibility.
    1232     """

```

```
-> 1233     return self._update_props(
1234         kwargs, {cls.__name__}
1235             {prop_name!r} )
1236
File D:\New folder\Lib\site-packages\matplotlib\artist.py:1206, in Artist._update_props(self, props, errfmt)
1204         func = getattr(self, f"set_{k}", None)
1205         if not callable(func):
-> 1206             raise AttributeError(
1207                 errfmt.format(cls=type(self), prop_name=k),
1208                 name=k)
1209         ret.append(func(v))
1210 if ret:
AttributeError: Rectangle.set() got an unexpected keyword argument 'vertical'
```



```
In [23]: sns.distplot(fifa19['Preferred Foot'], vertical=True)
```

```

-----
```

ValueError Traceback (most recent call last)

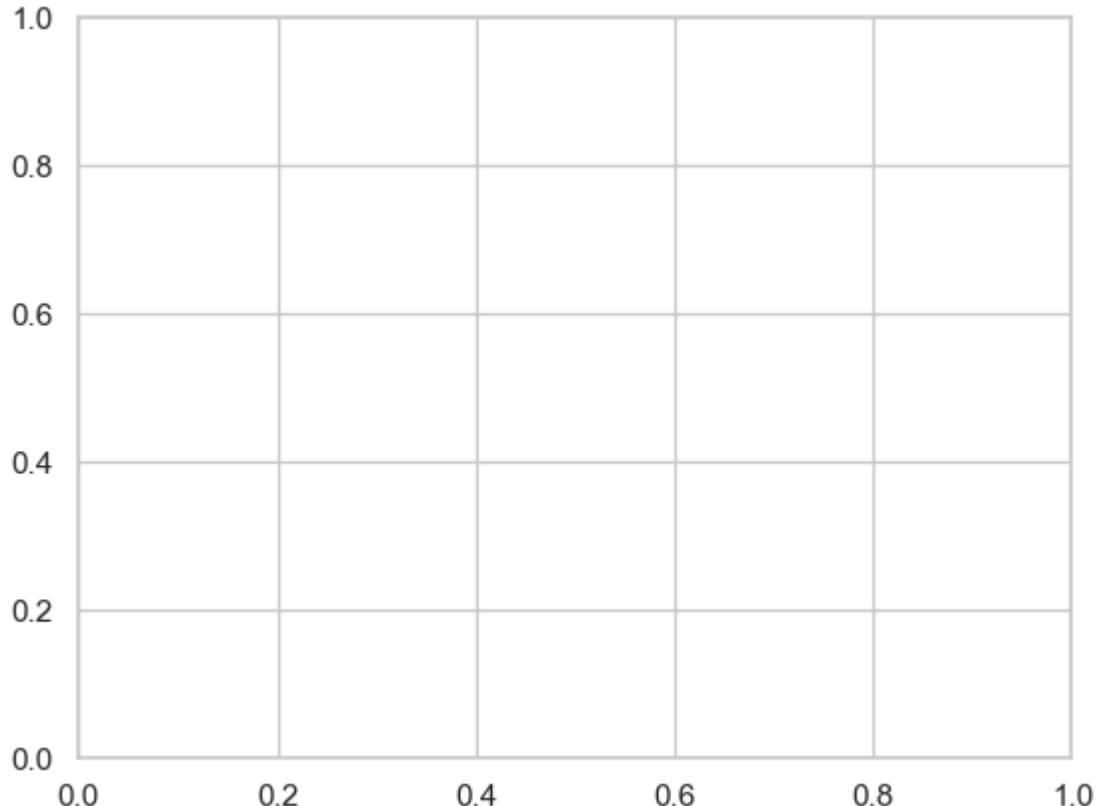
Cell In[23], line 1
----> 1 sns.distplot(fifa19[], vertical=True)

File D:\New folder\Lib\site-packages\seaborn\distributions.py:2443, in distplot(a, bins, hist, kde, rug, fit, hist_kws, kde_kws, rug_kws, fit_kws, color, vertical, norm_hist, xlabel, label, ax, x)
2440 a = x
2441 # Make a a 1-d float array
-> 2443 a = np.asarray(a, float)
2444 if a.ndim > 1:
2445 a = a.squeeze()

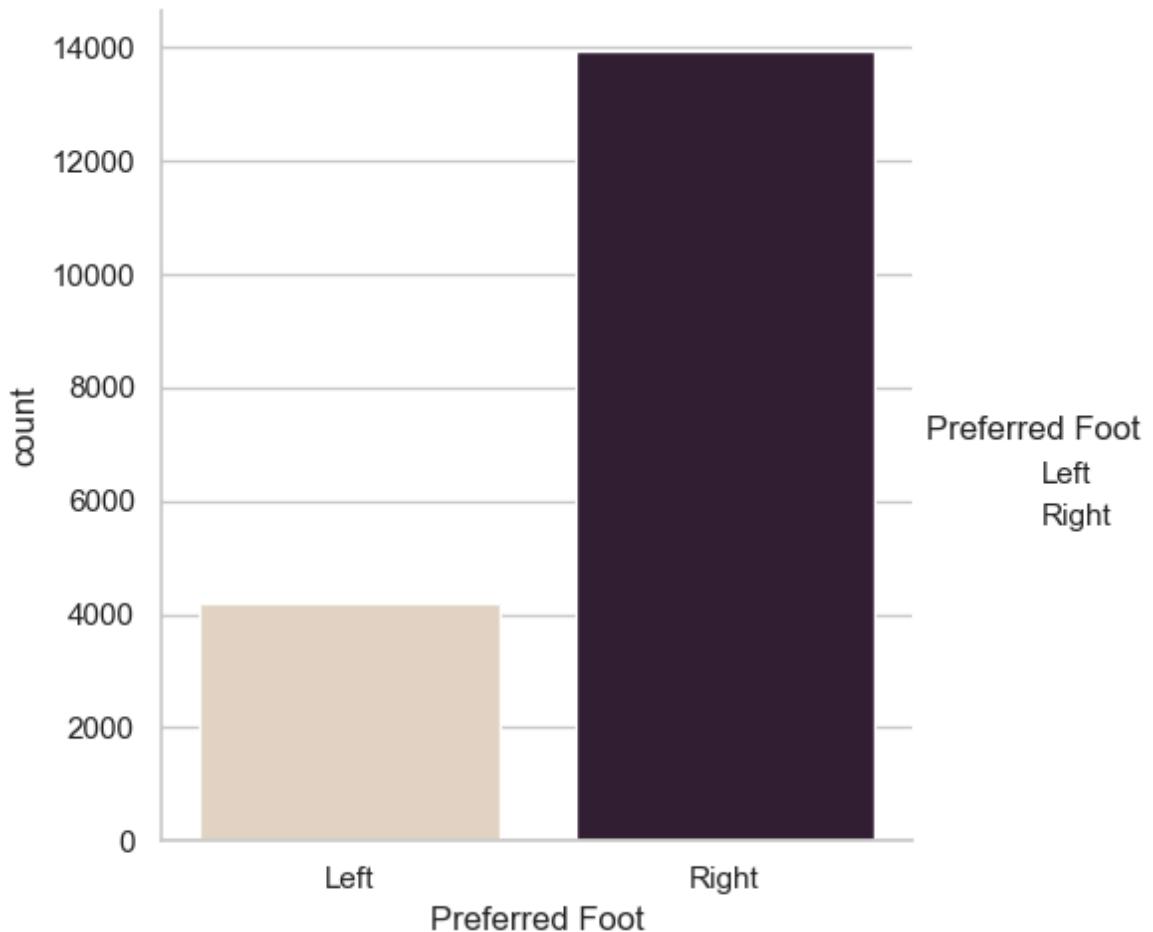
File D:\New folder\Lib\site-packages\pandas\core\series.py:1031, in Series._array_(self, dtype, copy)
981 """
982 Return the values as a NumPy array.
983
(...)

1028 dtype='datetime64[ns]')
1029 """
1030 values = self._values
-> 1031 arr = np.asarray(values, dtype=dtype)
1032 if using_copy_on_write() and astype_is_view(values.dtype, arr.dtype):
1033 arr = arr.view()

ValueError: could not convert string to float: 'Left'



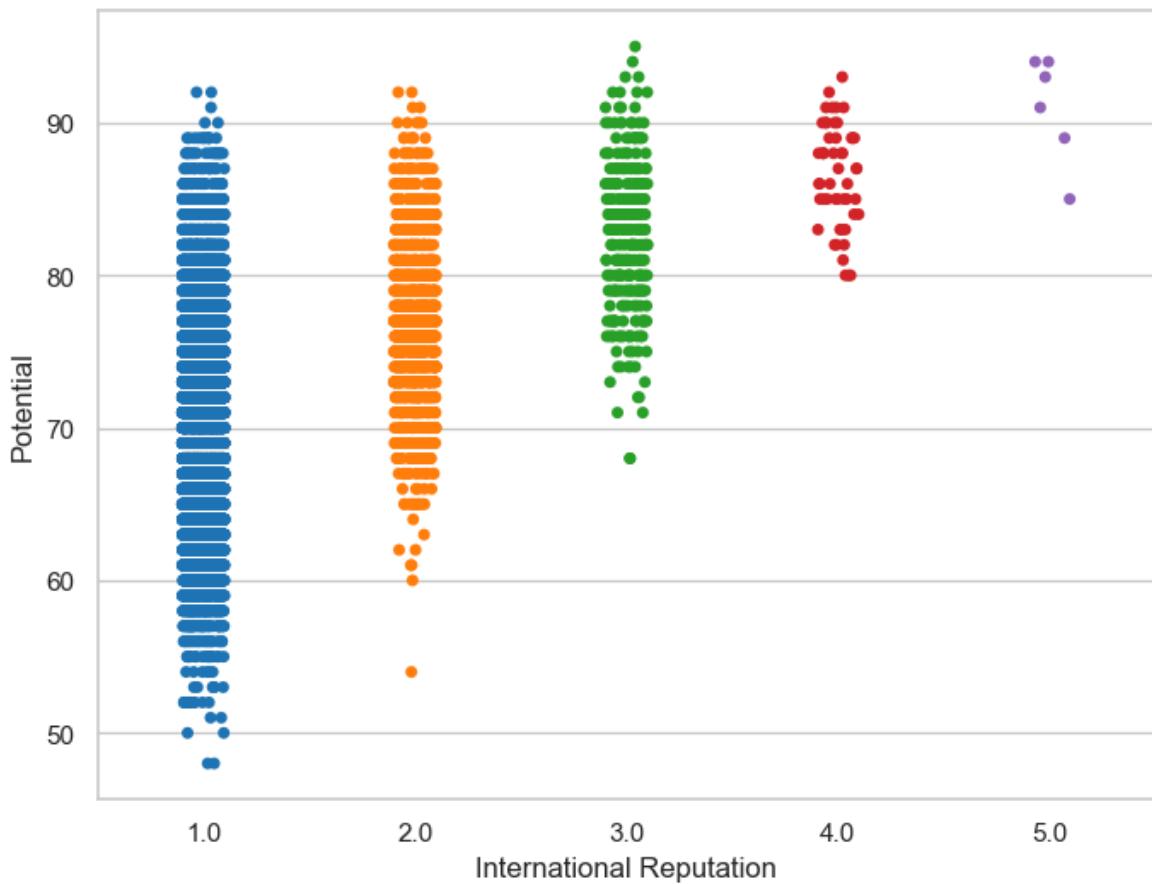
In [24]: g=sns.catplot(x="Preferred Foot", kind="count", palette="ch:.25", data=fifa19)
plt.show()



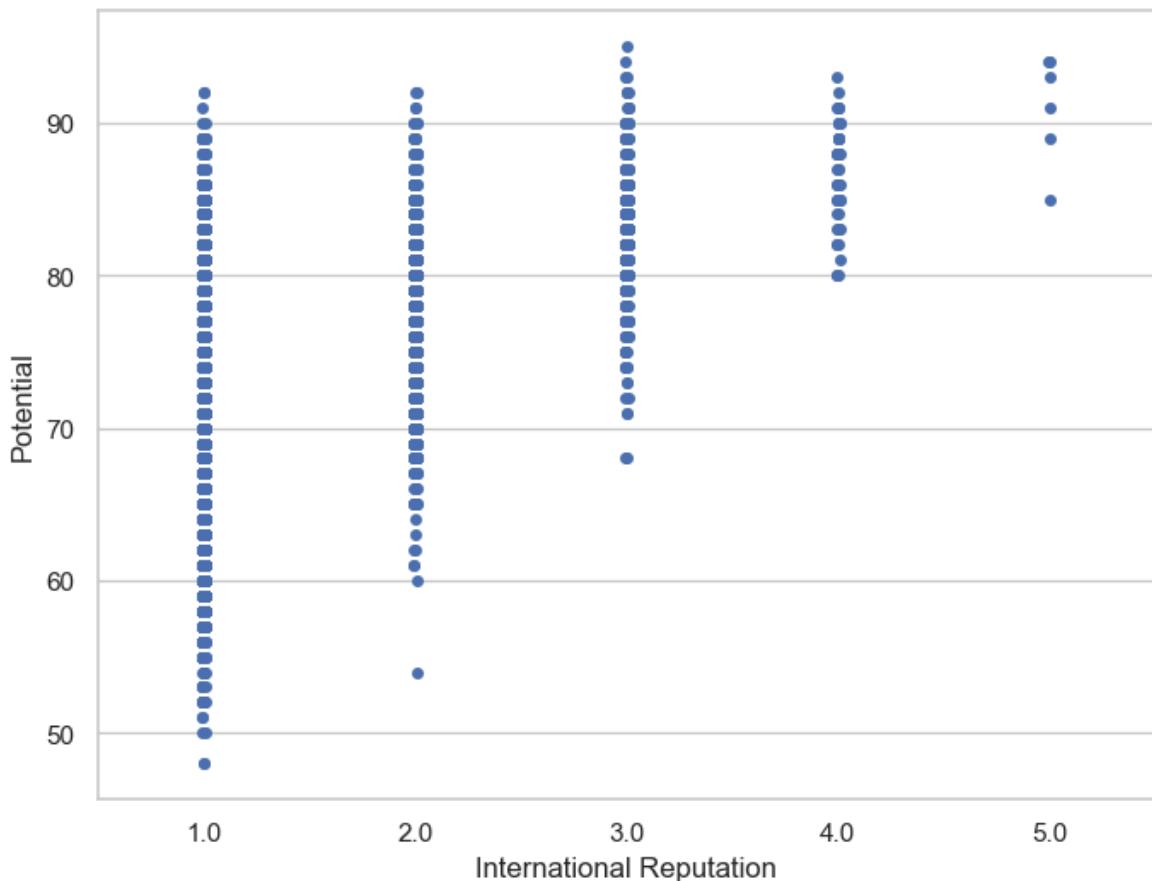
```
In [25]: fifa19['International Reputation'].value_counts()
```

```
Out[25]: International Reputation
1.0    16532
2.0    1261
3.0     309
4.0      51
5.0      6
Name: count, dtype: int64
```

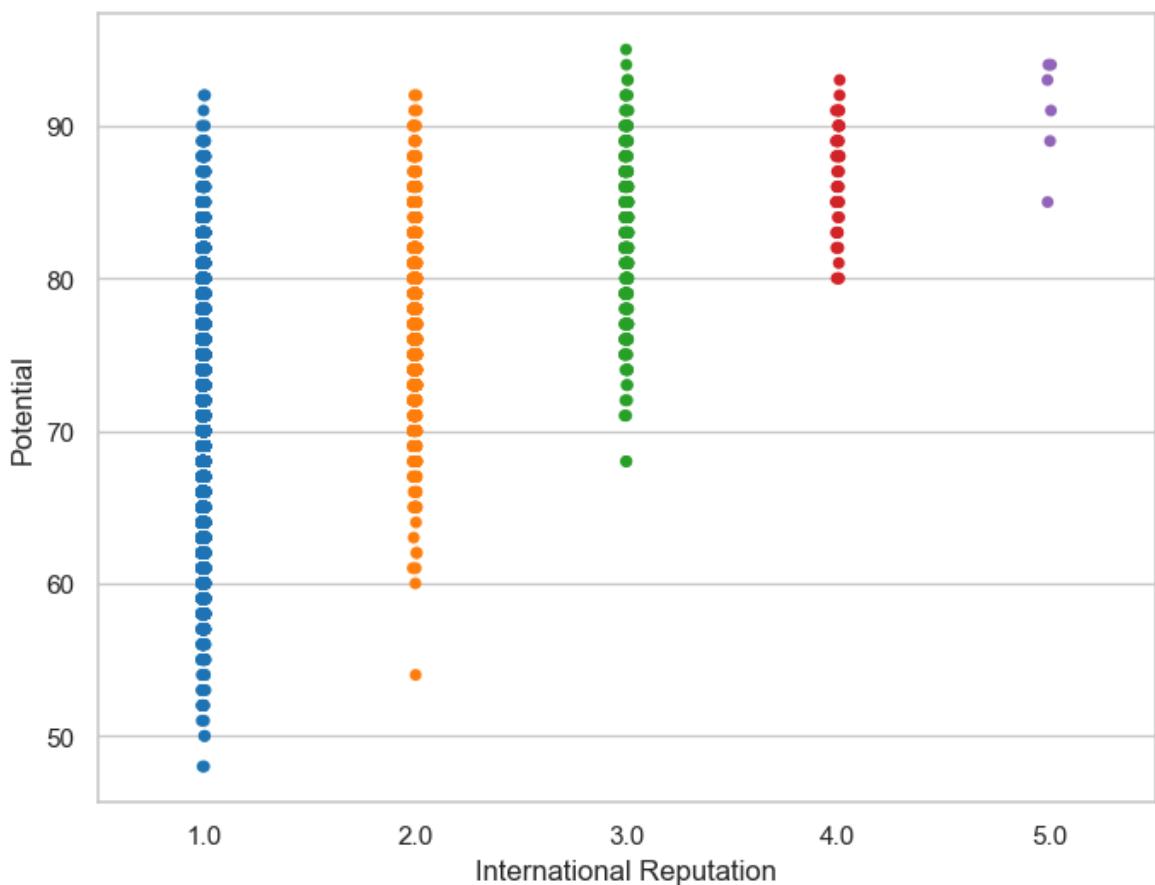
```
In [26]: f,ax=plt.subplots(figsize=(8,6))
x=sns.stripplot(x="International Reputation",y="Potential",data=fifa19,palette=""
plt.show()
```



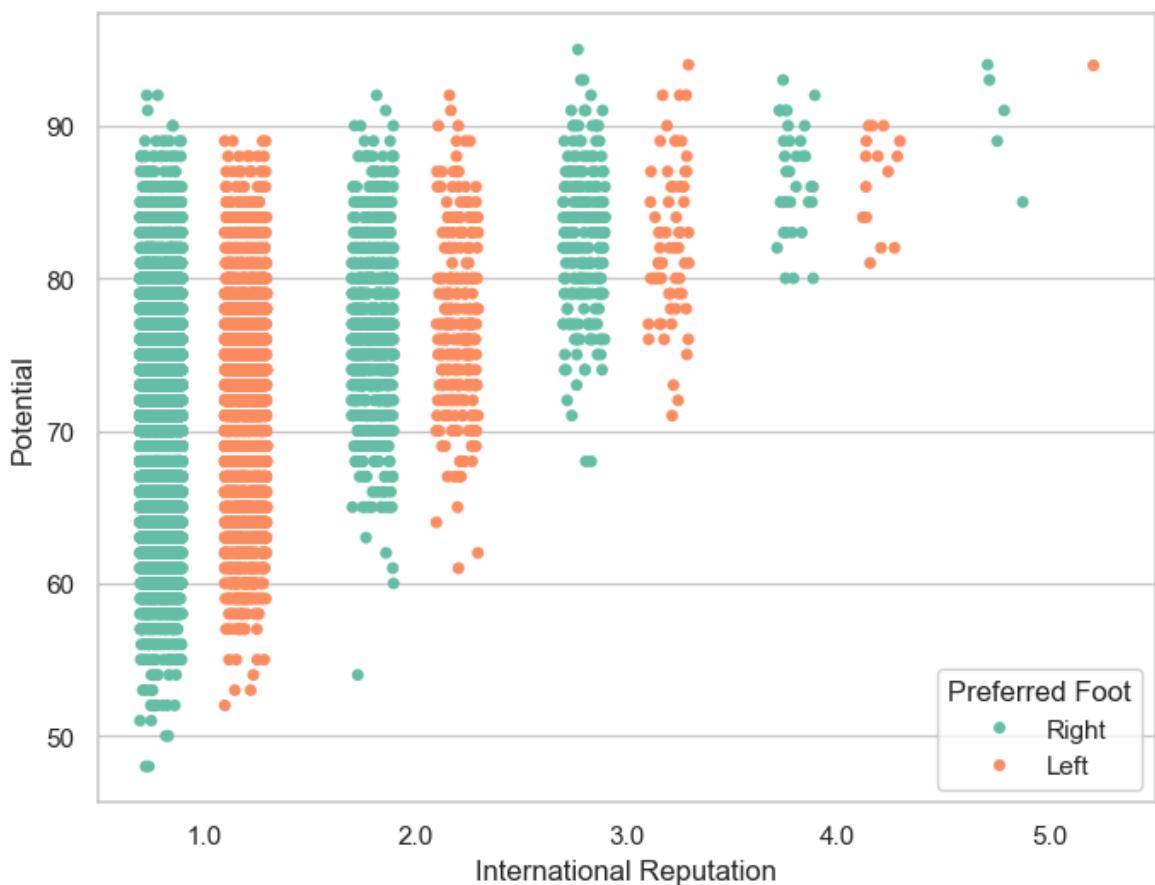
```
In [27]: f,ax=plt.subplots(figsize=(8,6))
sns.stripplot(x="International Reputation",y="Potential",data=fifa19,jitter=0.01
plt.show()
```



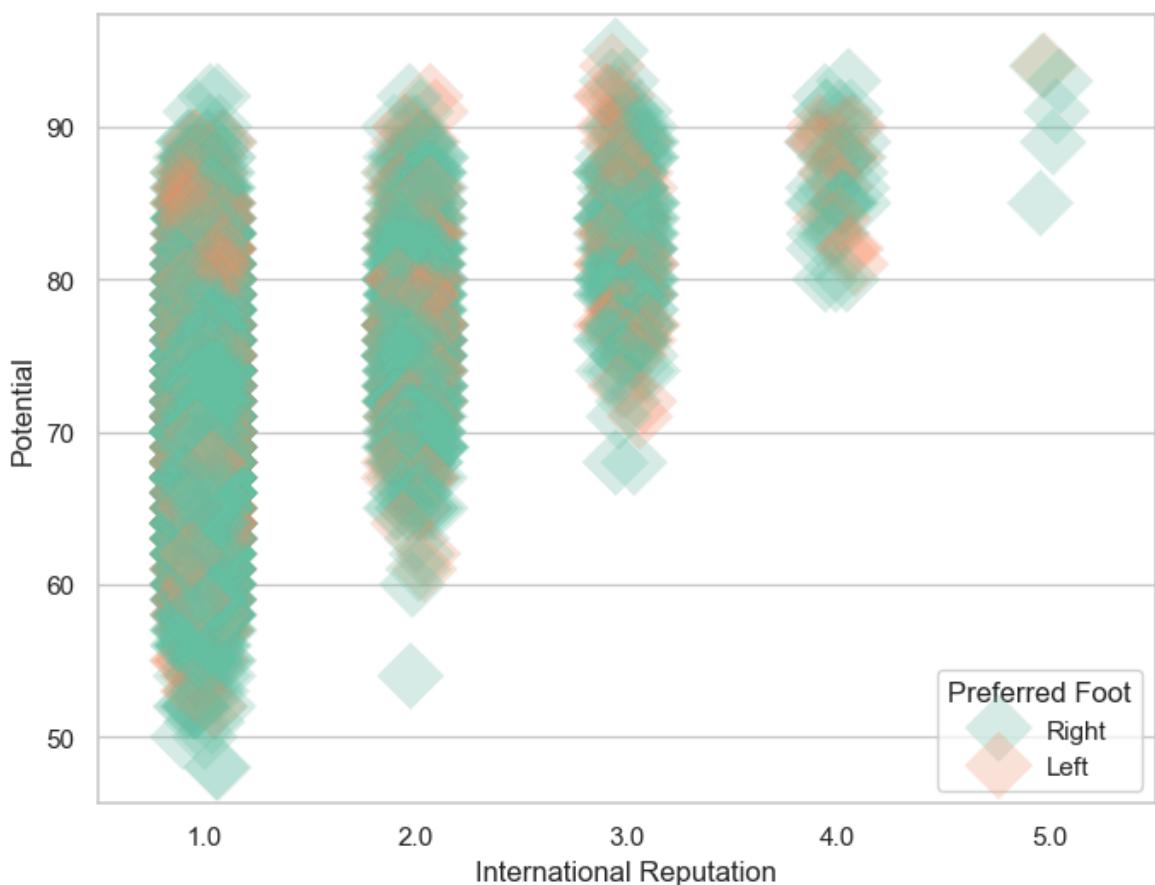
```
In [28]: f,ax=plt.subplots(figsize=(8,6))
sns.stripplot(x="International Reputation",y="Potential",data=fifa19,jitter=0.01)
plt.show()
```



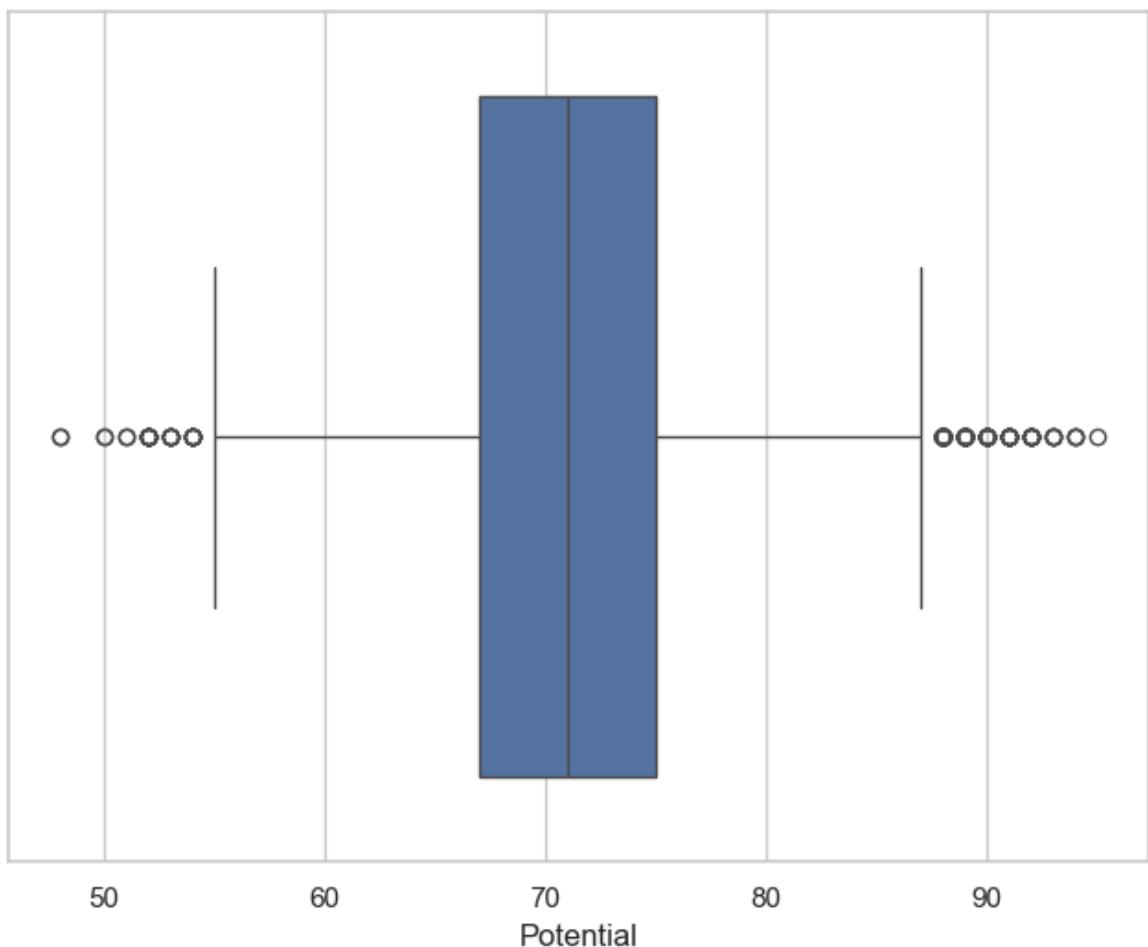
```
In [29]: f,ax=plt.subplots(figsize=(8,6))
sns.stripplot(x="International Reputation",y="Potential",hue="Preferred Foot",
               data=fifa19,jitter=0.2,palette="Set2",dodge=True)
plt.show()
```



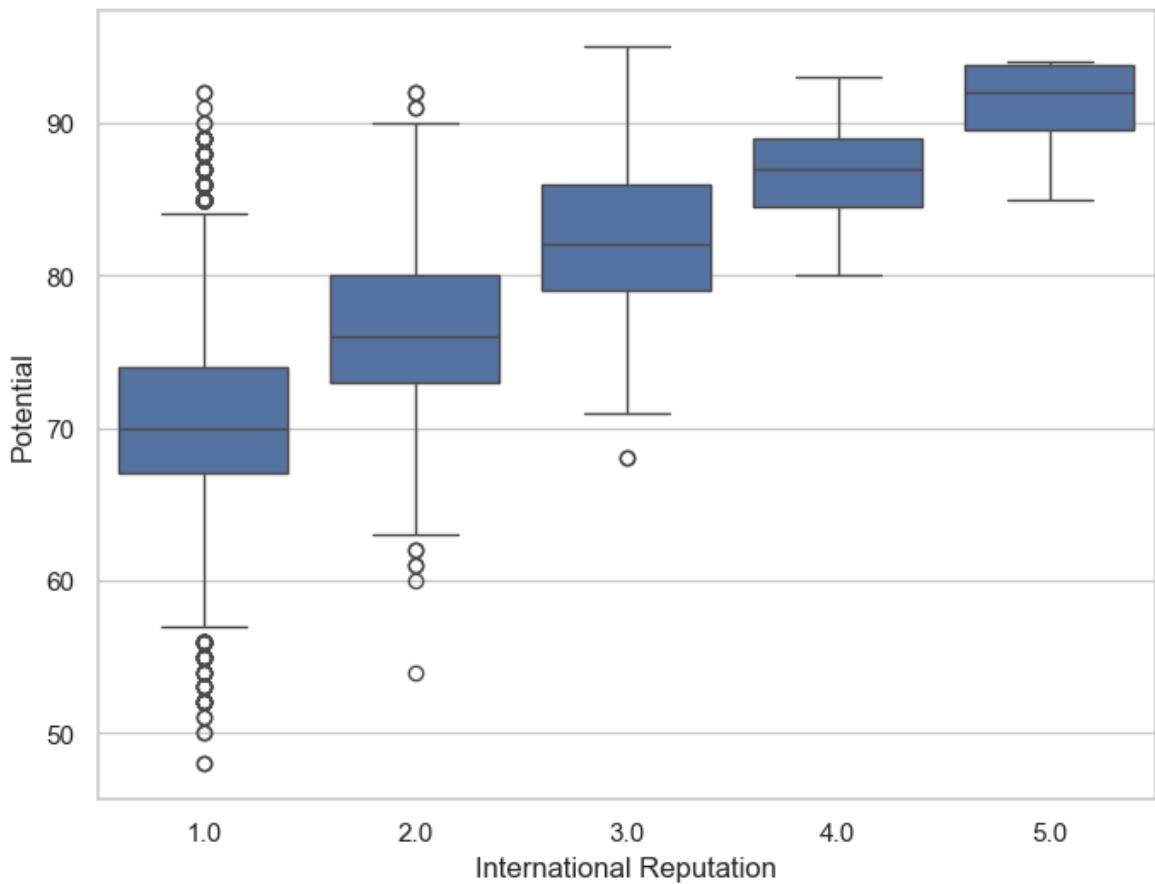
```
In [30]: f,ax=plt.subplots(figsize=(8,6))
sns.stripplot(x="International Reputation",y="Potential",hue="Preferred Foot",
               data=fifa19,palette="Set2",size=20,marker="D",edgecolor="gray",alpha=0.5)
plt.show()
```



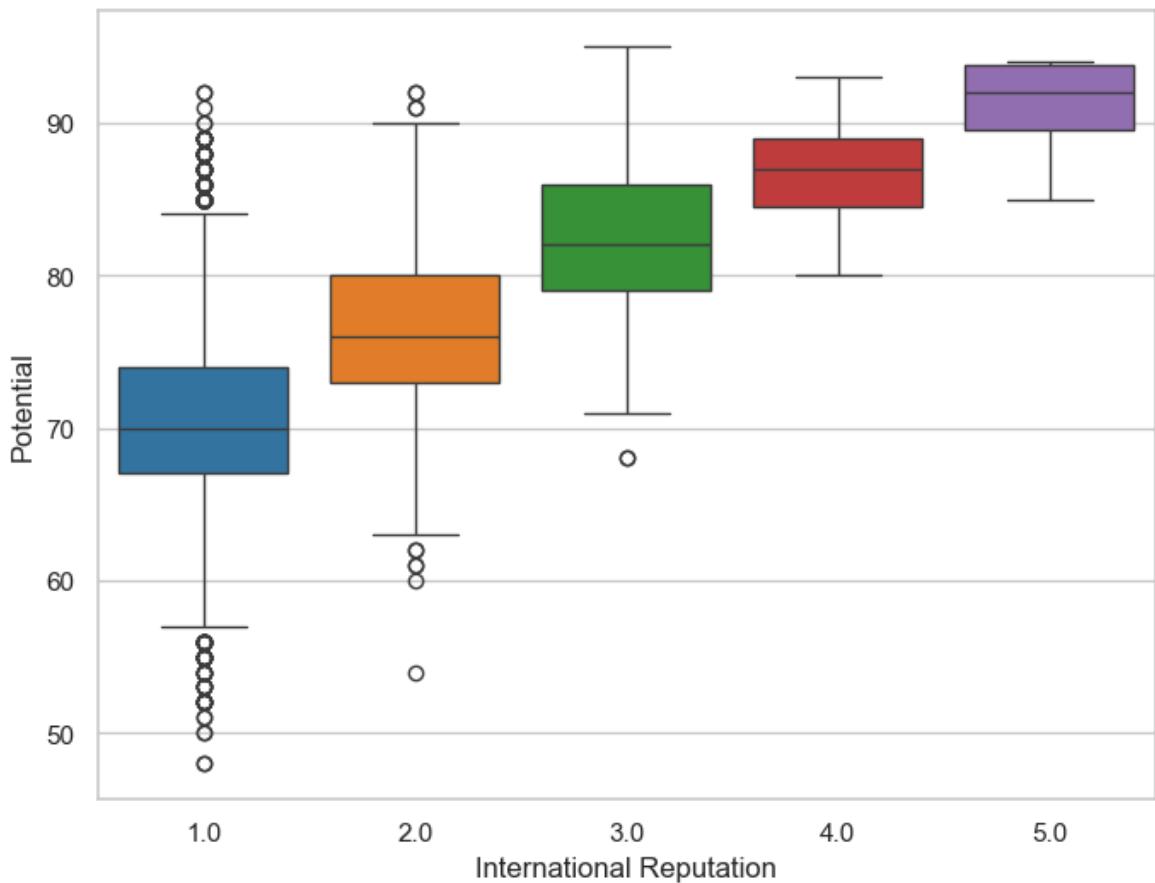
```
In [31]: f,ax=plt.subplots(figsize=(8,6))
sns.boxplot(x=fifa19['Potential'])
plt.show()
```



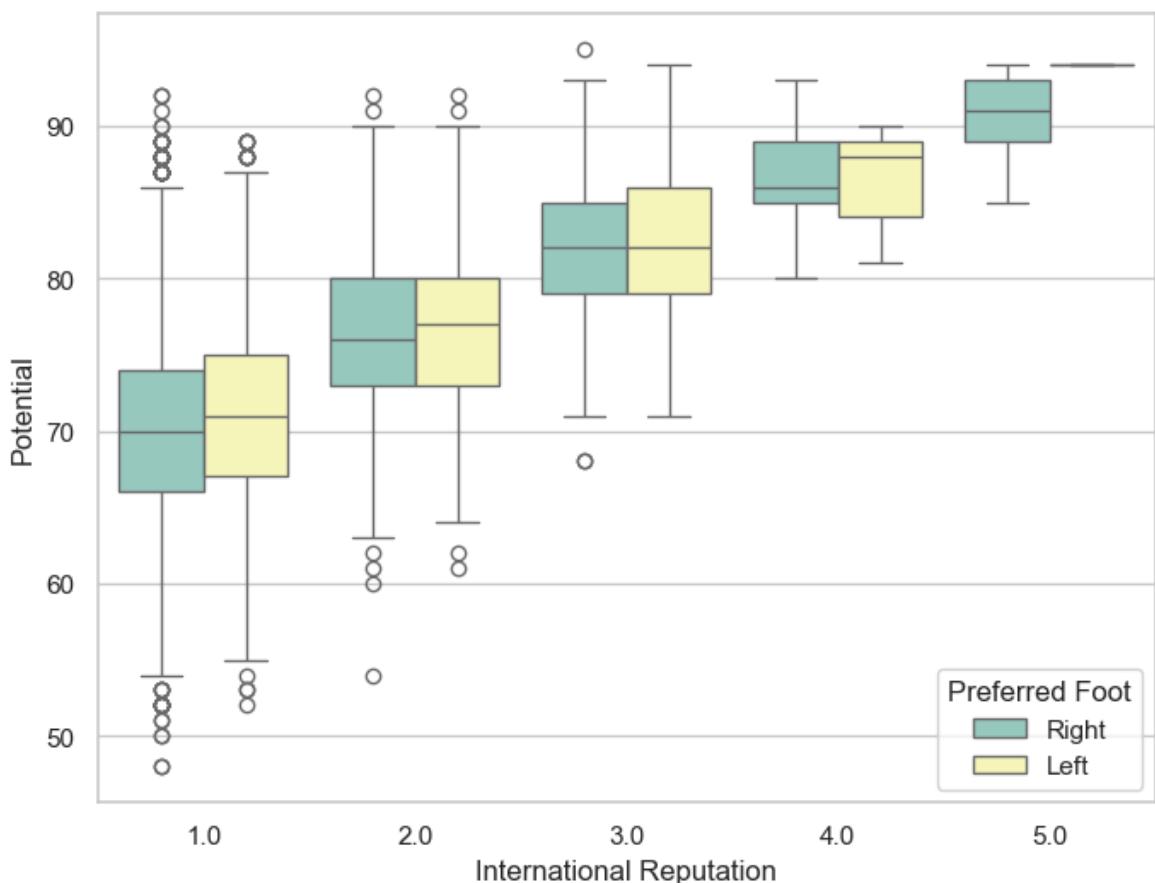
```
In [32]: f,ax=plt.subplots(figsize=(8,6))
sns.boxplot(x="International Reputation",y="Potential",data=fifa19)
plt.show()
```



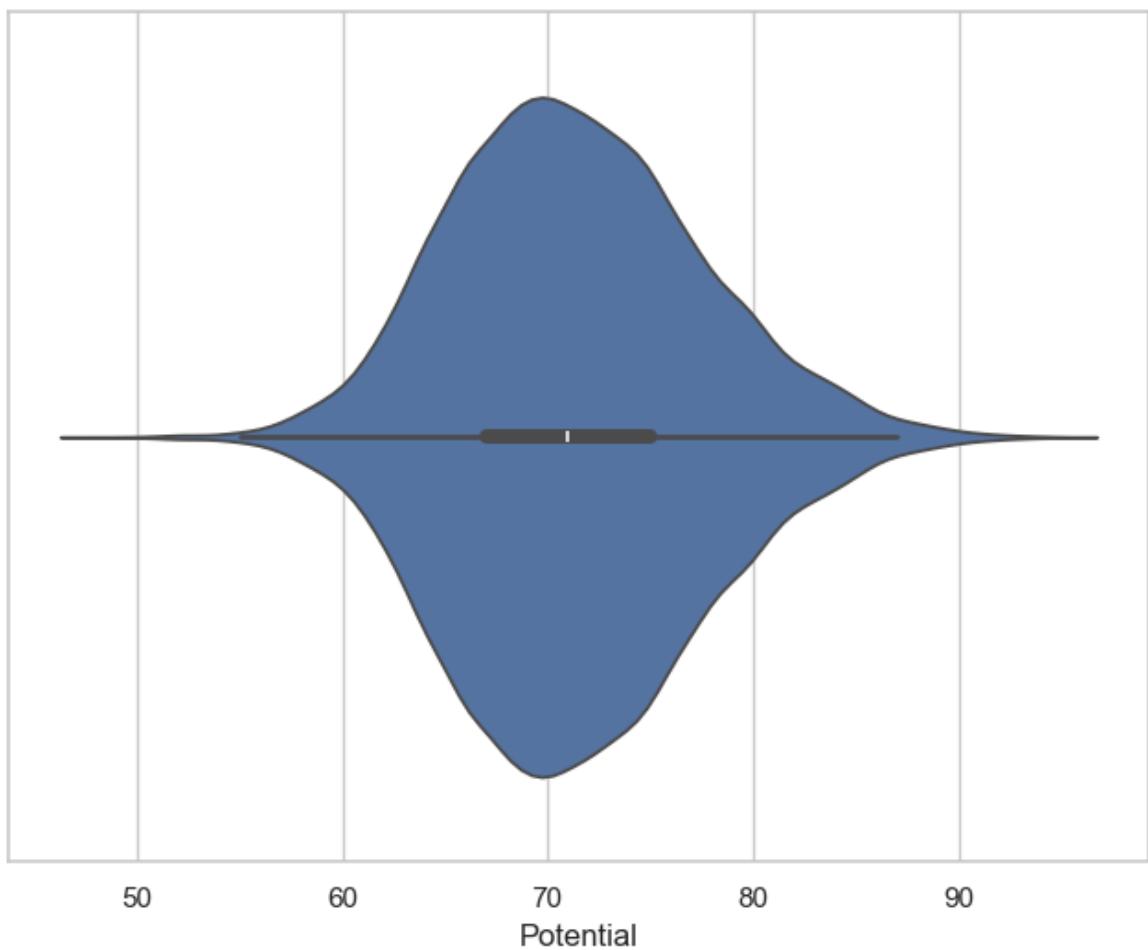
```
In [33]: f,ax=plt.subplots(figsize=(8,6))
sns.boxplot(x="International Reputation",y="Potential",data=fifa19,palette="tab10")
plt.show()
```



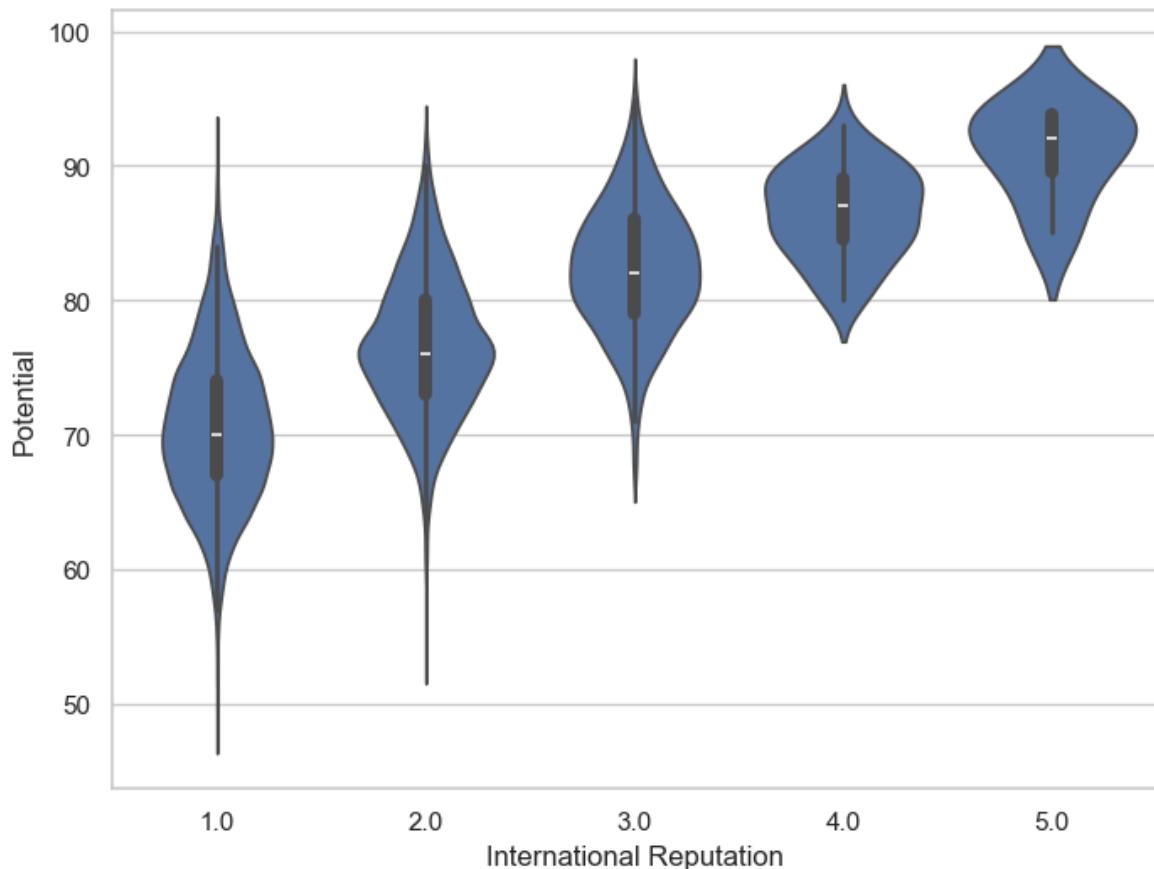
```
In [34]: f,ax=plt.subplots(figsize=(8,6))
sns.boxplot(x="International Reputation",y="Potential",hue="Preferred Foot",data=fifa19)
plt.show()
```



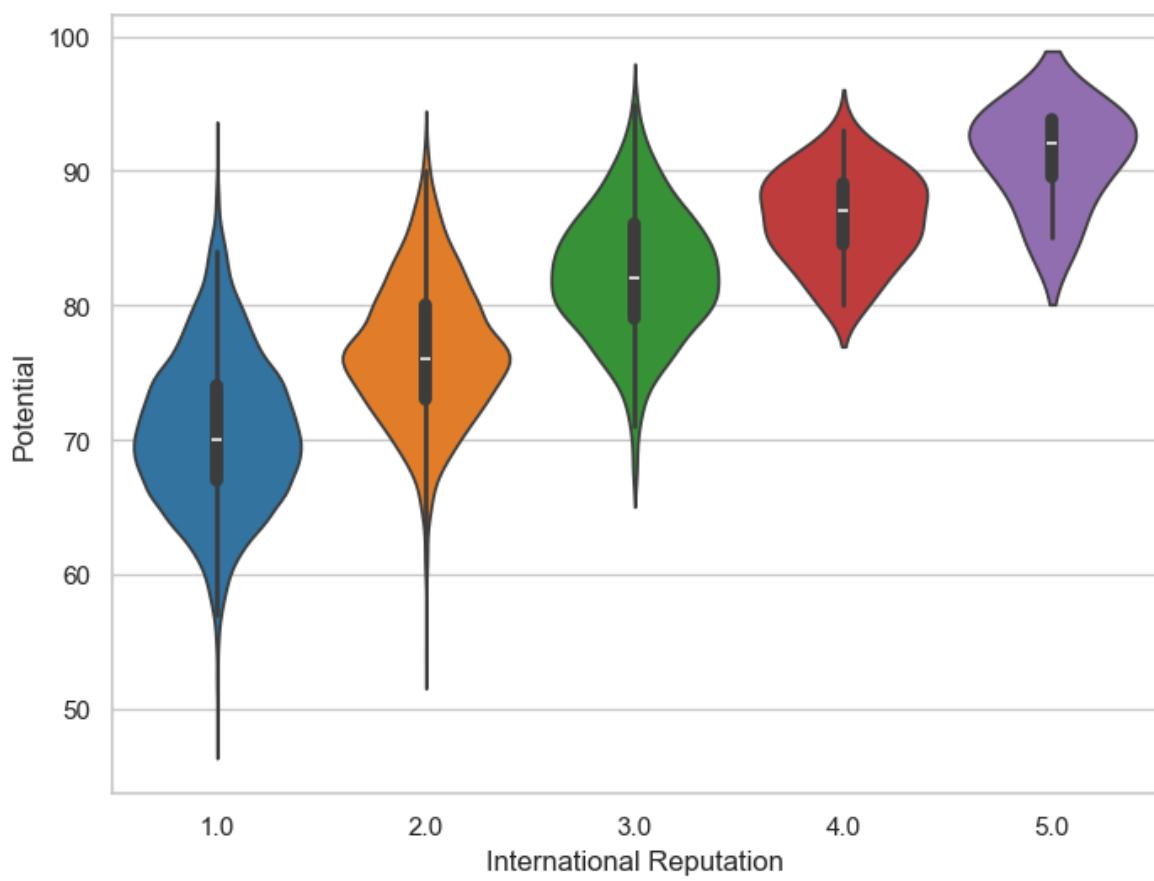
```
In [35]: f,ax=plt.subplots(figsize=(8,6))
sns.violinplot(x=fifa19["Potential"])
plt.show()
```



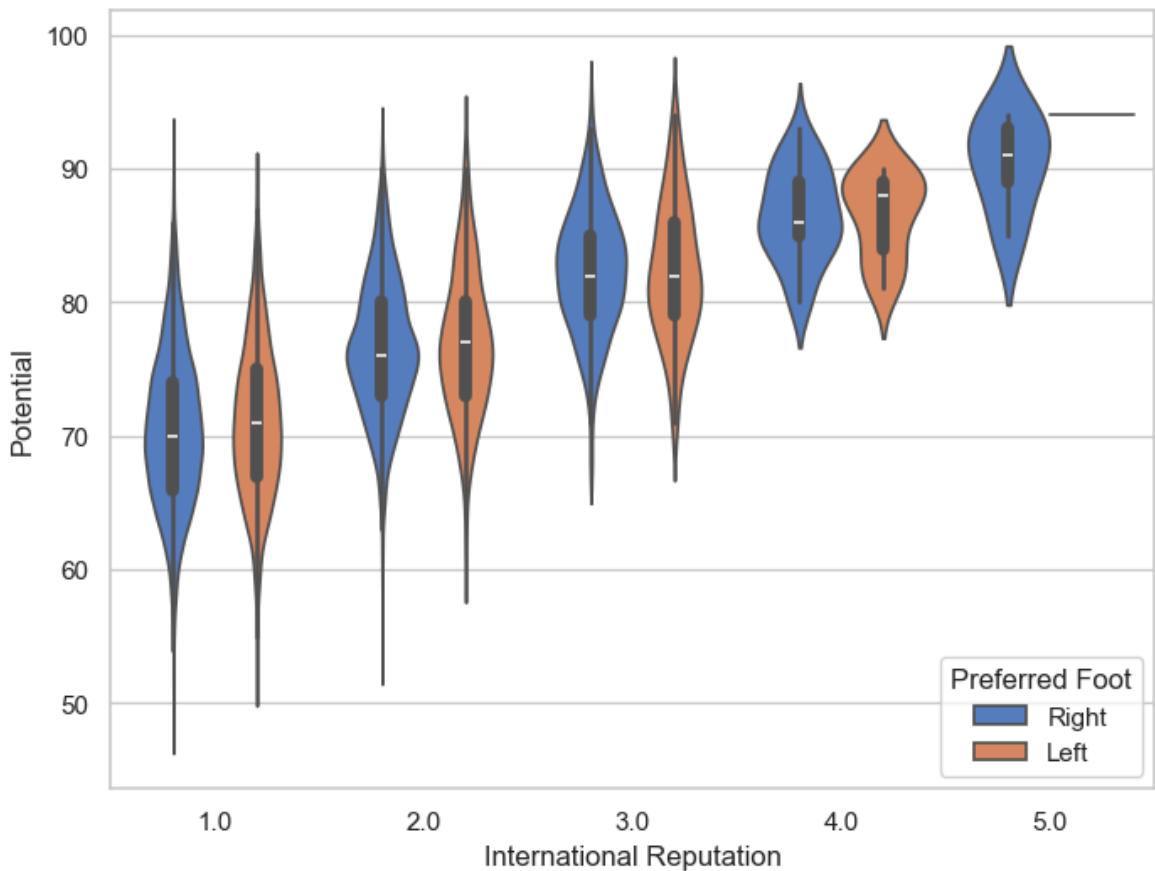
```
In [36]: f,ax=plt.subplots(figsize=(8,6))
sns.violinplot(x="International Reputation",y="Potential",data=fifa19)
plt.show()
```



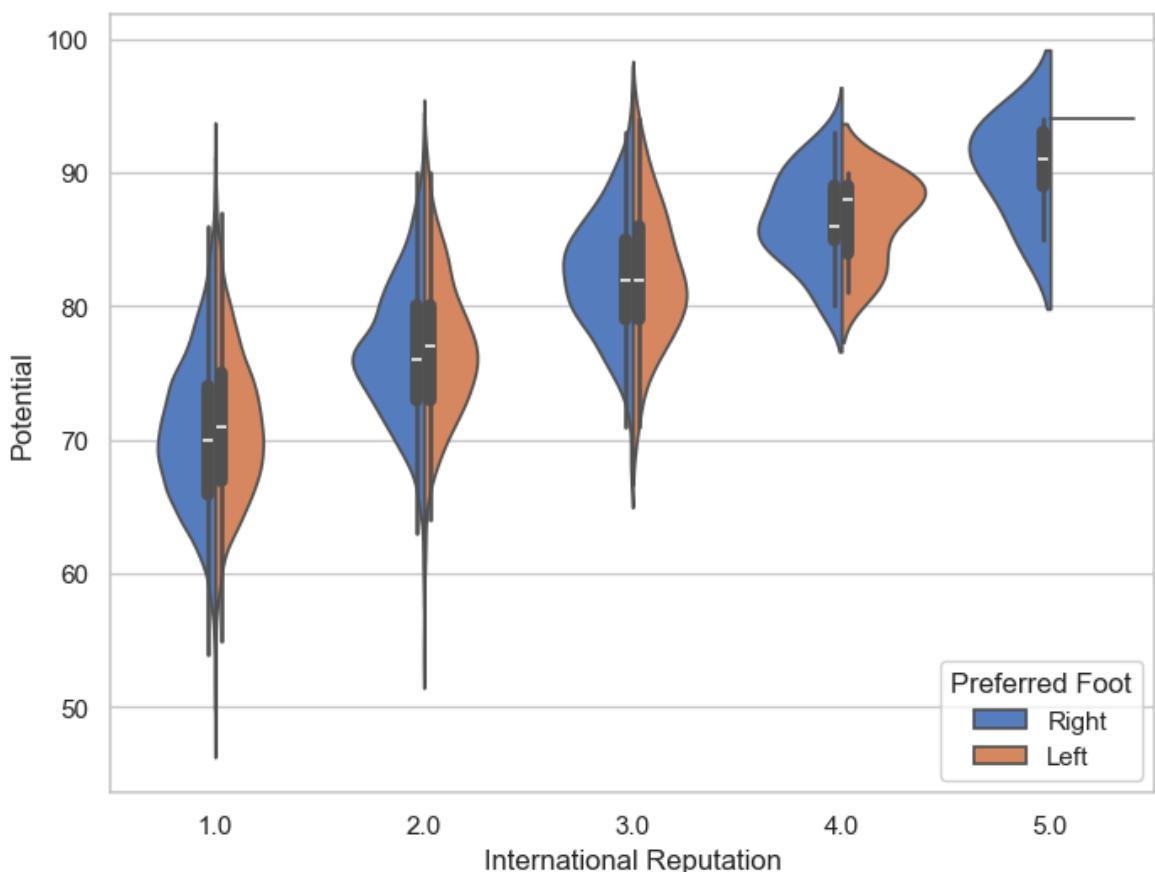
```
In [37]: f,ax=plt.subplots(figsize=(8,6))
sns.violinplot(x="International Reputation",y="Potential",data=fifa19,palette="tab10")
plt.show()
```



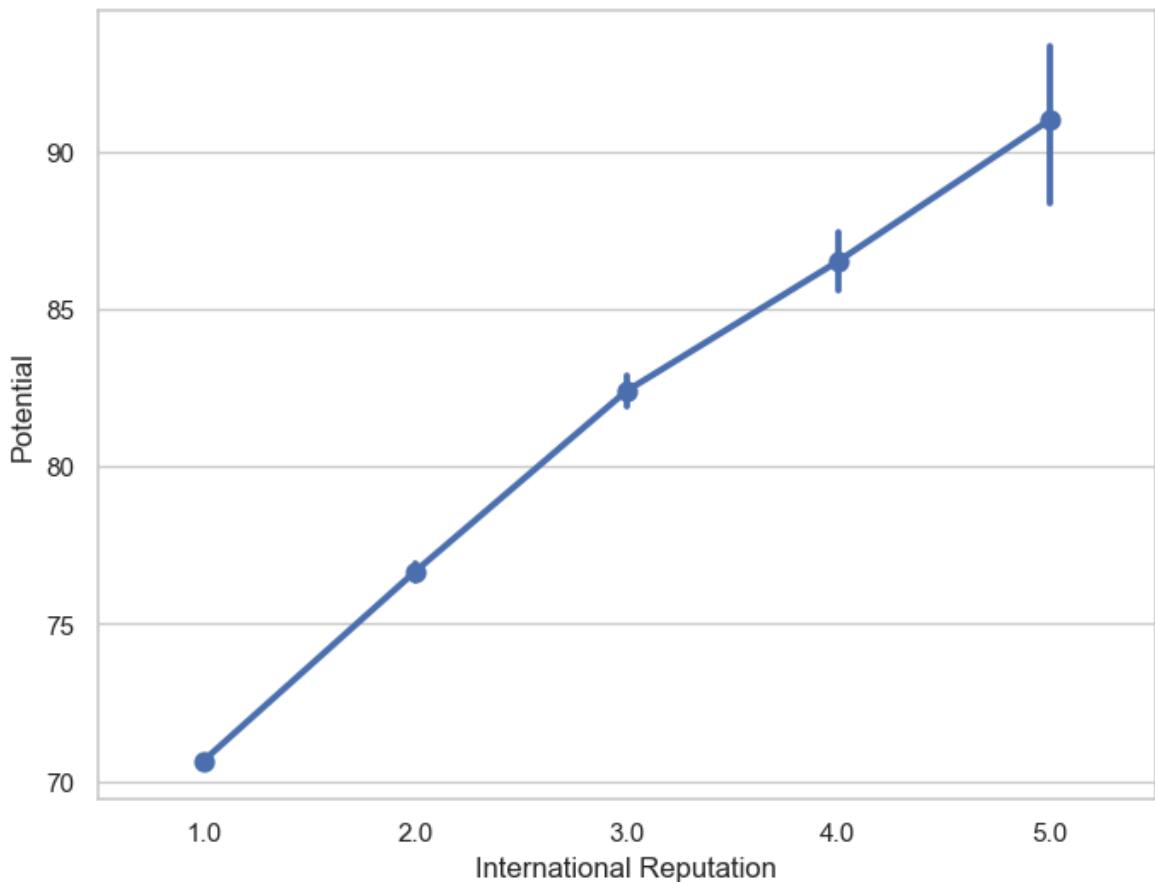
```
In [38]: f,ax=plt.subplots(figsize=(8,6))
sns.violinplot(x="International Reputation",y="Potential",hue='Preferred Foot',data=fifa19)
plt.show()
```



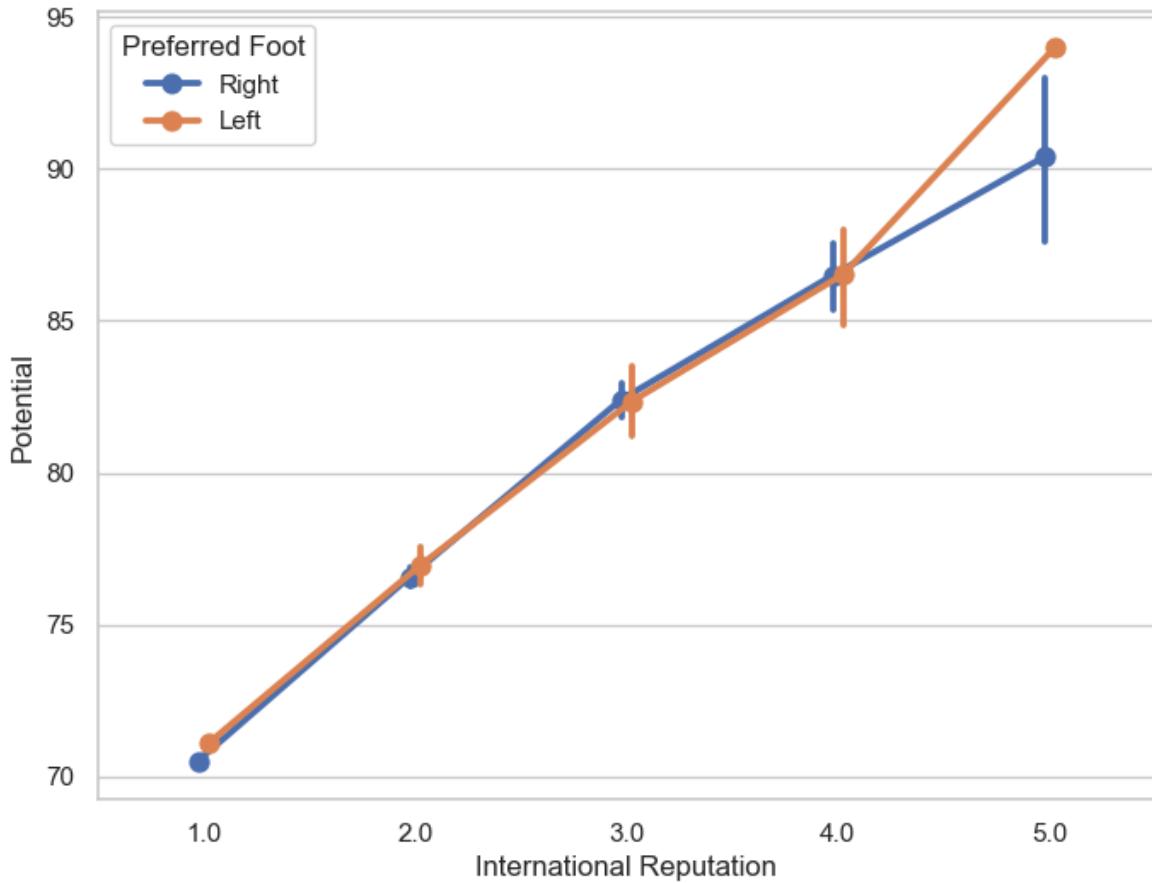
```
In [39]: f,ax=plt.subplots(figsize=(8,6))
sns.violinplot(x="International Reputation",y="Potential",hue="Preferred Foot",
                 data=fifa19,palette="muted",split=True)
plt.show()
```



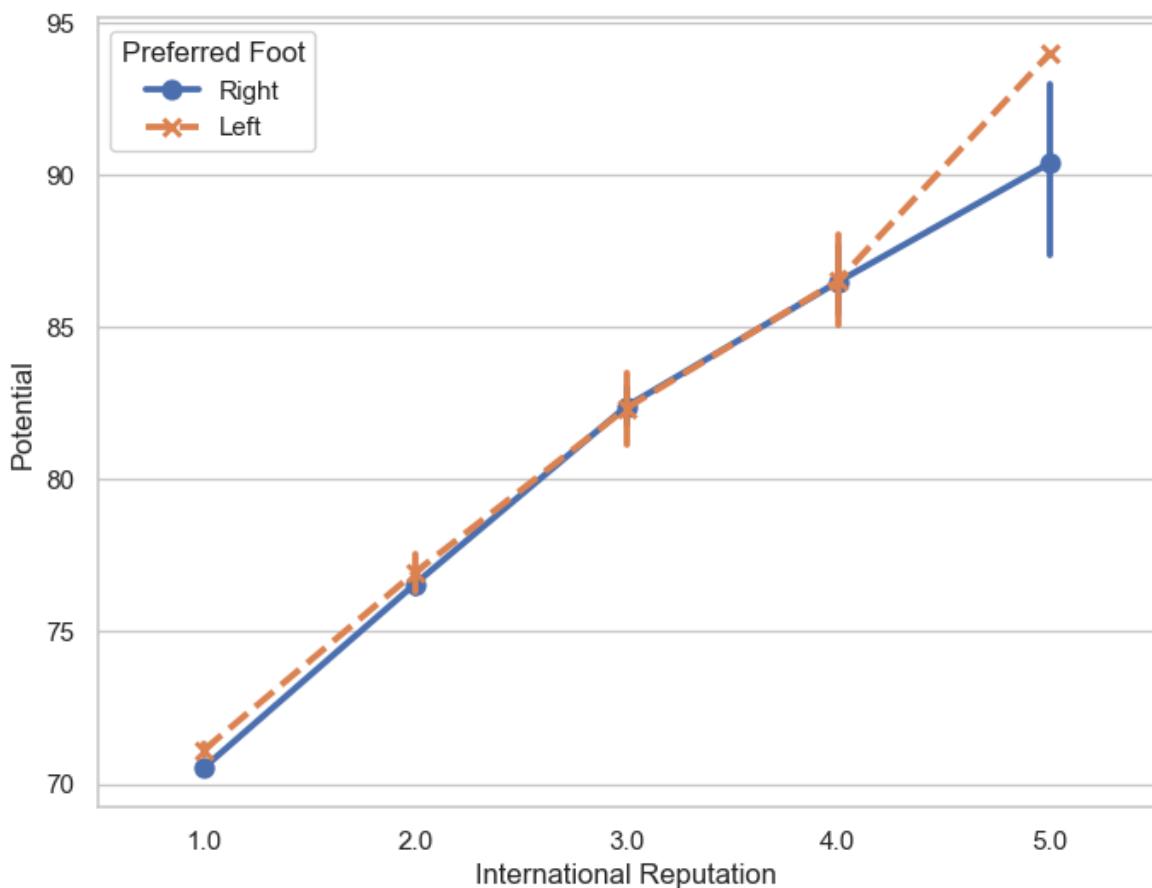
```
In [40]: f,ax=plt.subplots(figsize=(8,6))
sns.pointplot(x="International Reputation",y="Potential",data=fifa19)
plt.show()
```



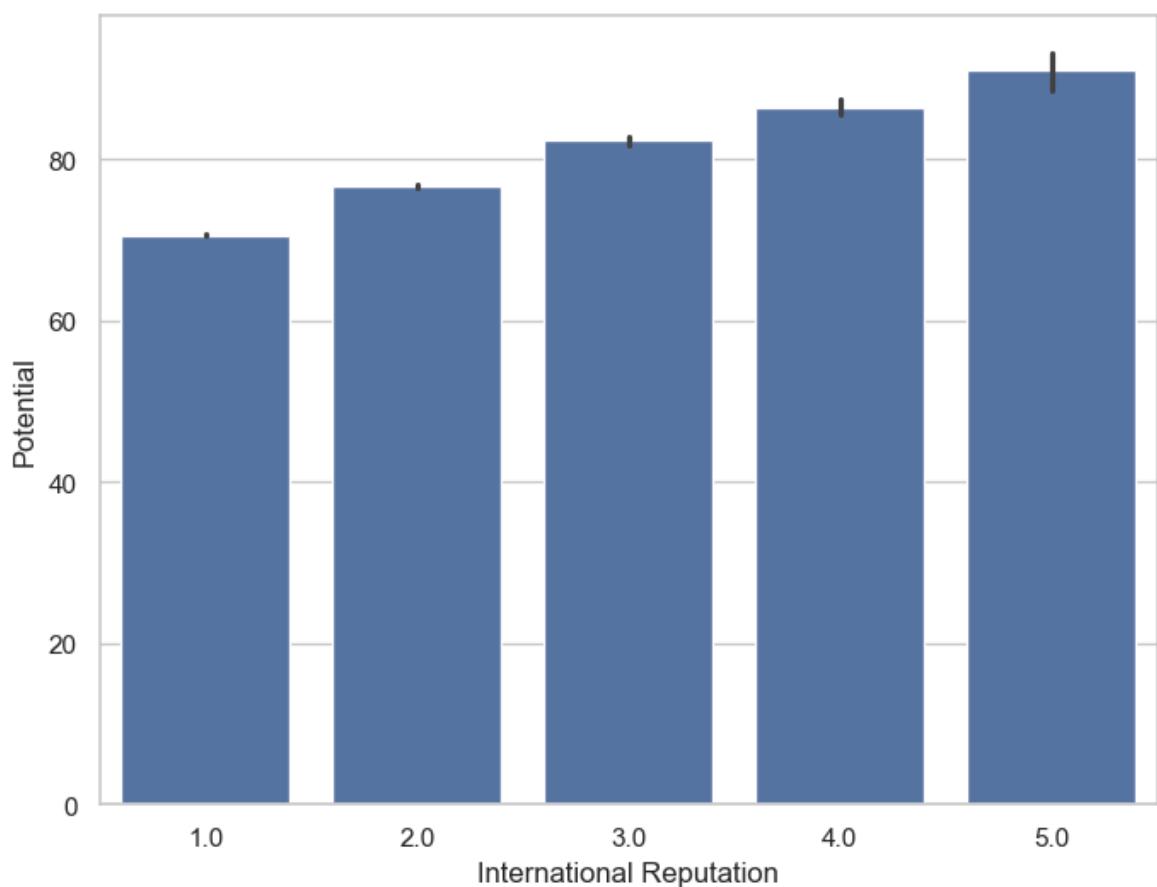
```
In [41]: f,ax=plt.subplots(figsize=(8,6))
sns.pointplot(x="International Reputation",y="Potential",hue="Preferred Foot",da
plt.show()
```



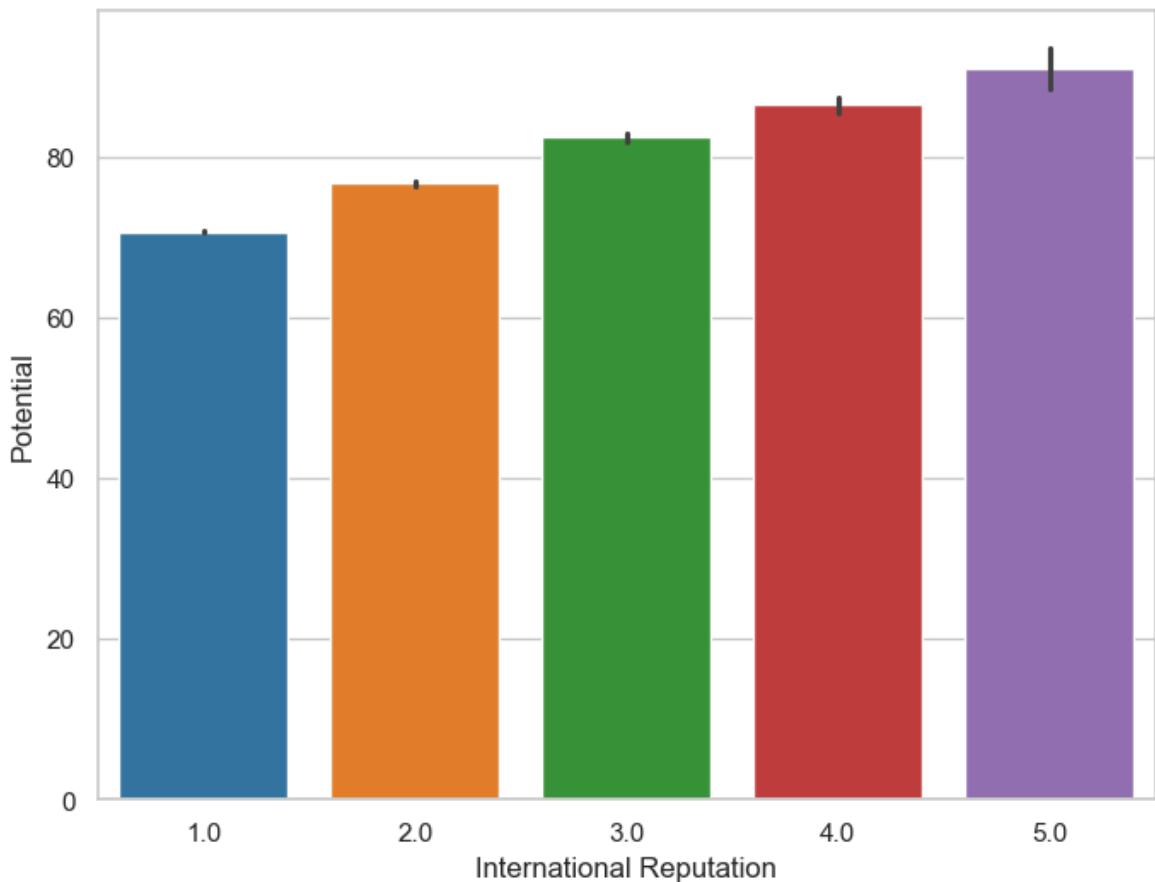
```
In [42]: f,ax=plt.subplots(figsize=(8,6))
sns.pointplot(x="International Reputation",y="Potential",hue="Preferred Foot",
               data=fifa19,markers=["o","x"],linestyles=["-","--"])
plt.show()
```



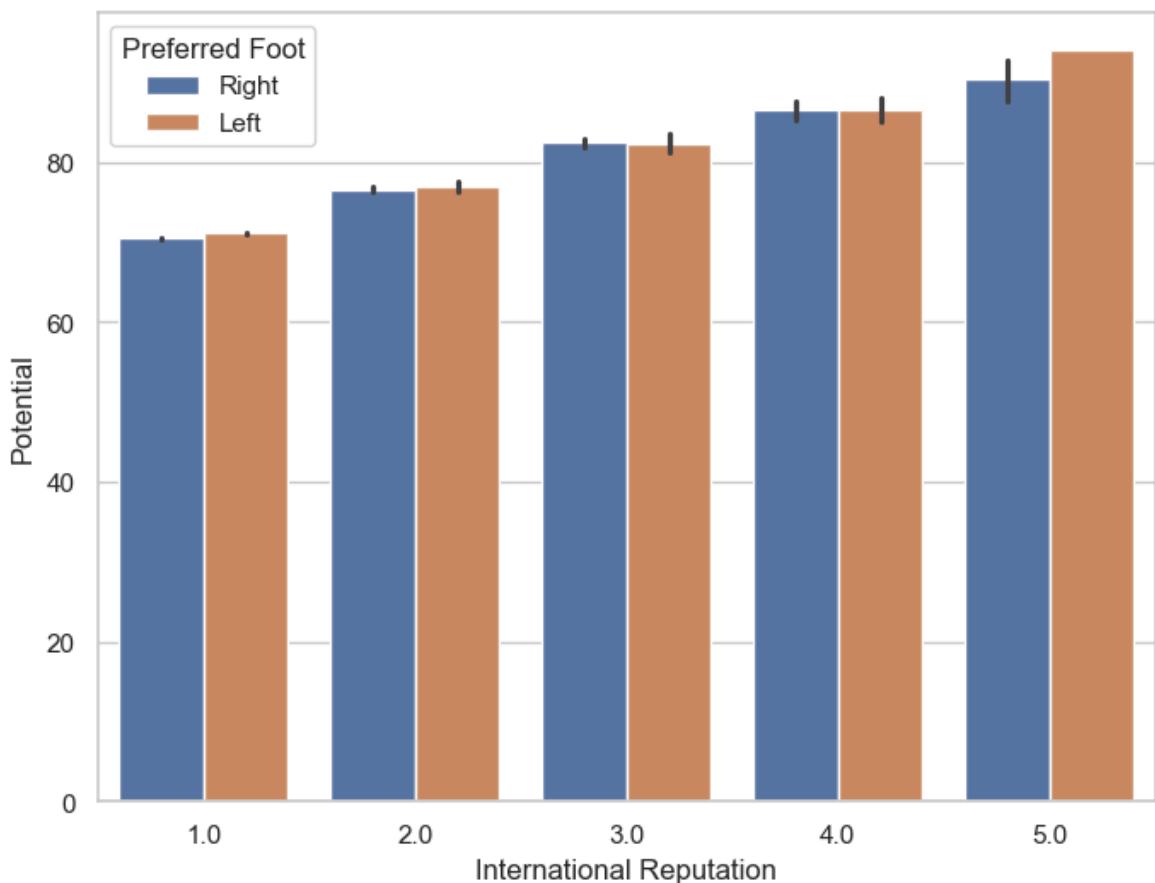
```
In [43]: f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19)
plt.show()
```



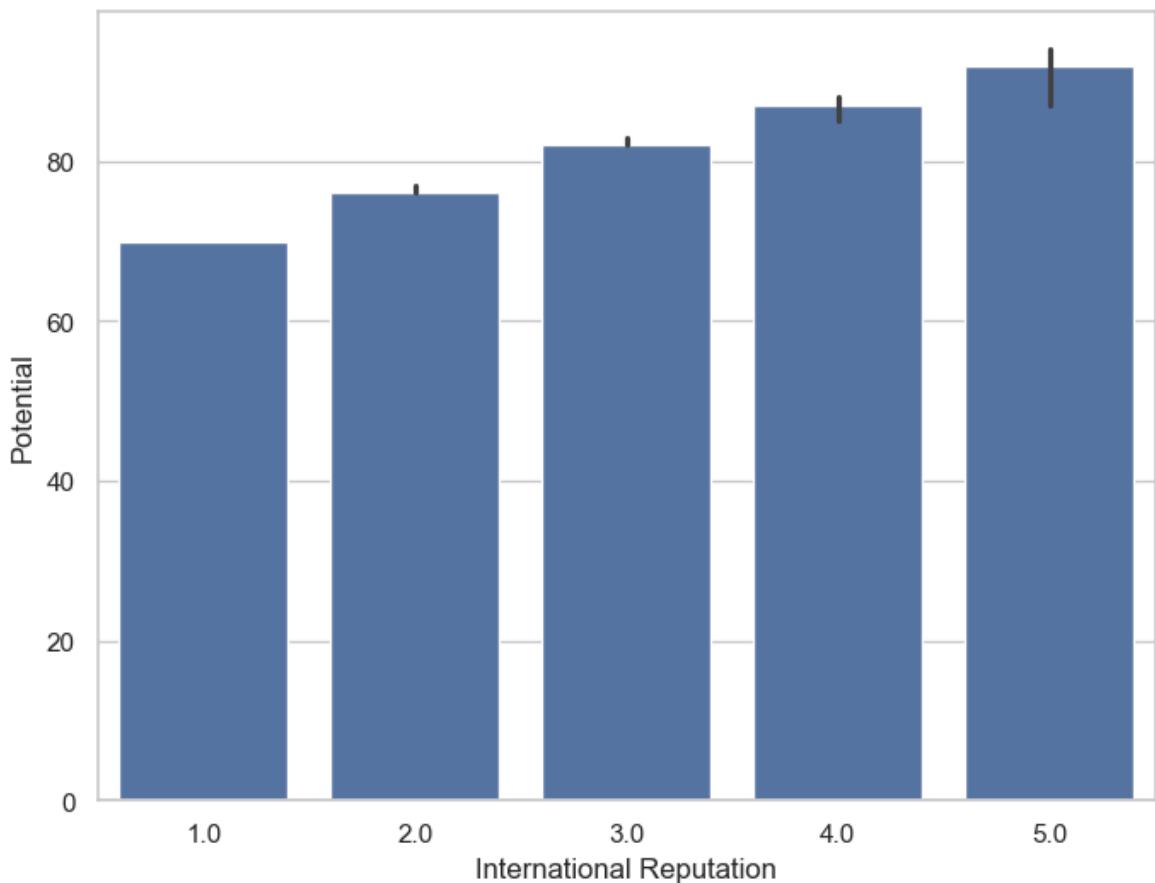
```
In [44]: f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19,palette="tab1
plt.show()
```



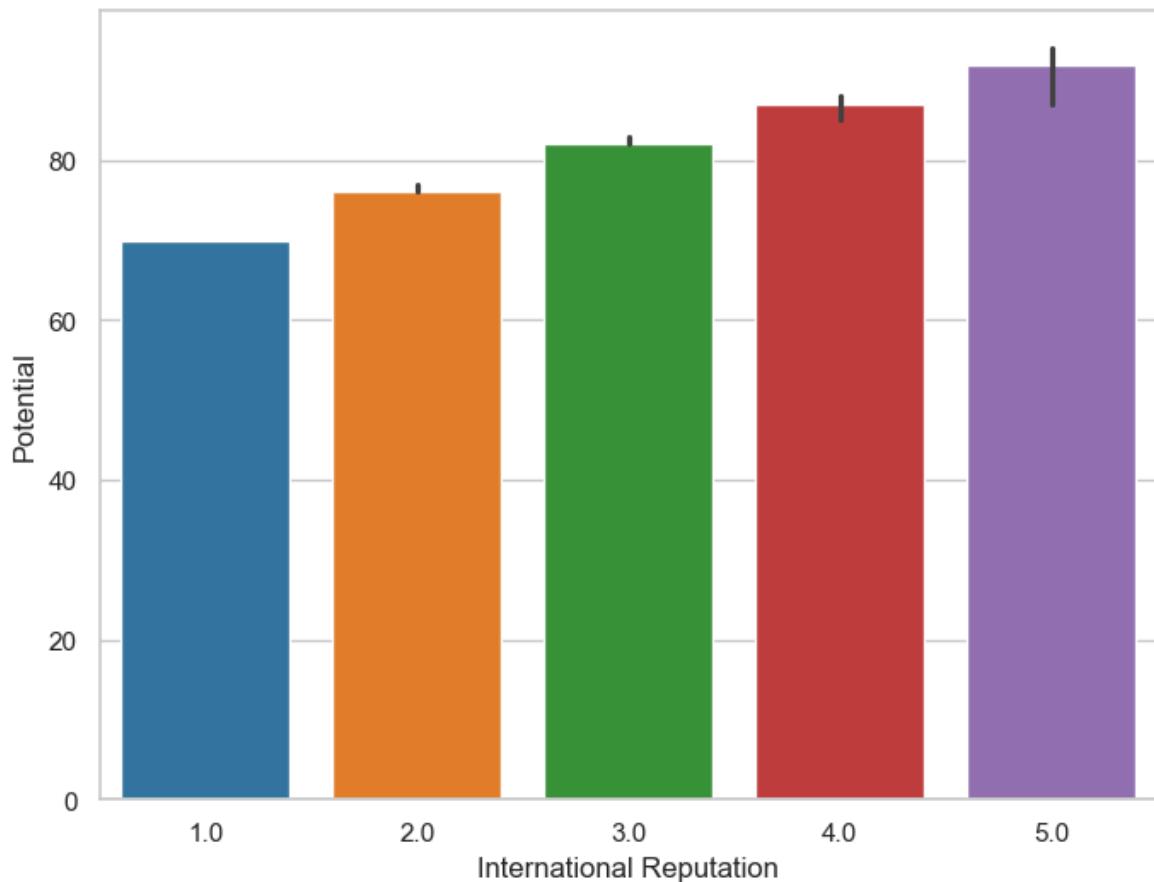
```
In [45]: f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",hue="Preferred Foot",data
plt.show()
```



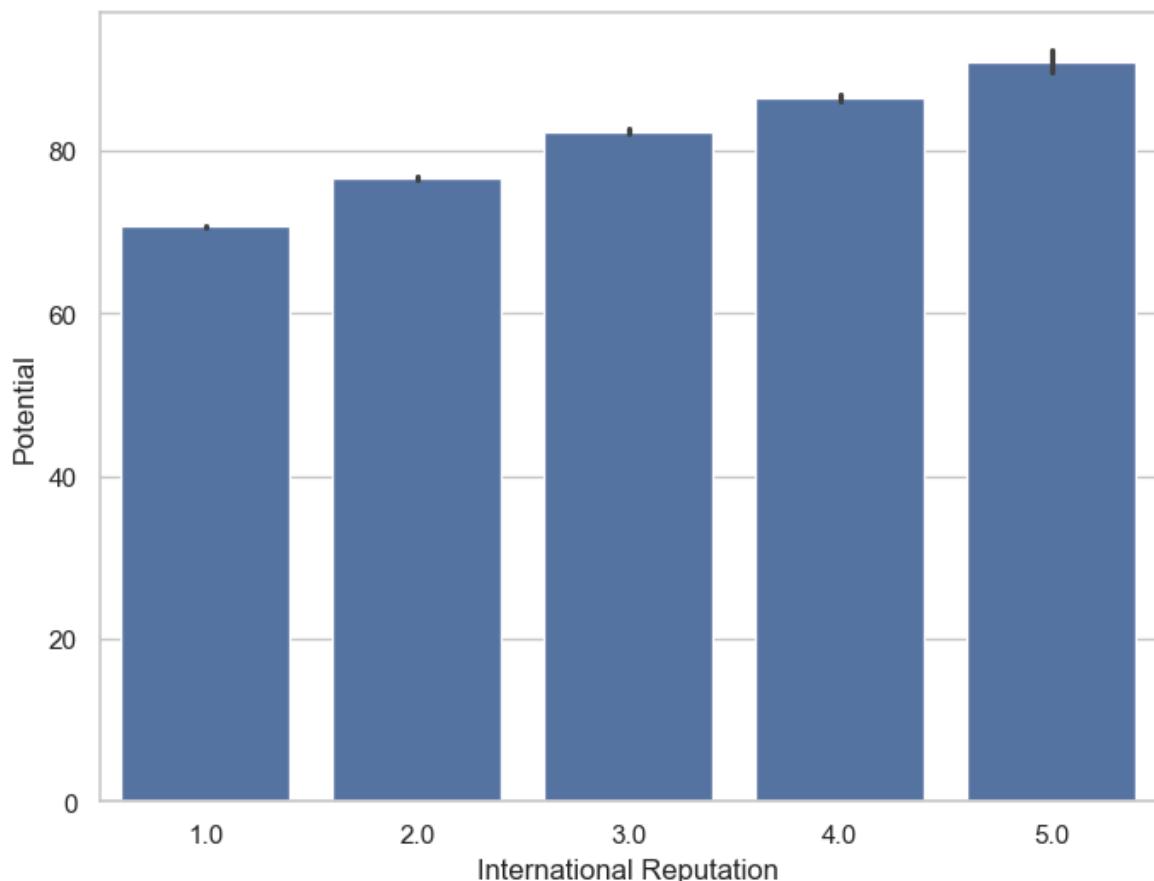
```
In [46]: from numpy import median
f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19,estimator=median)
plt.show()
```



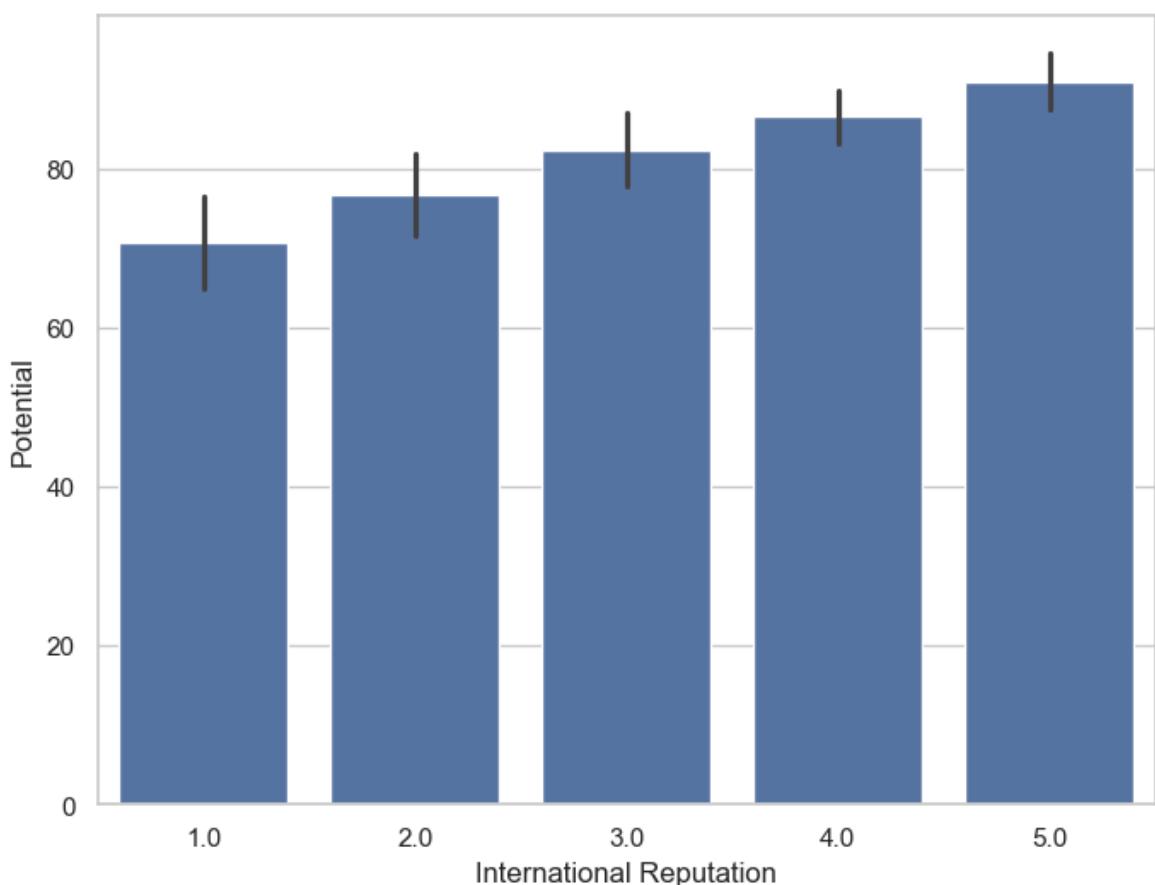
```
In [47]: from numpy import median
f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19,estimator=median)
plt.show()
```



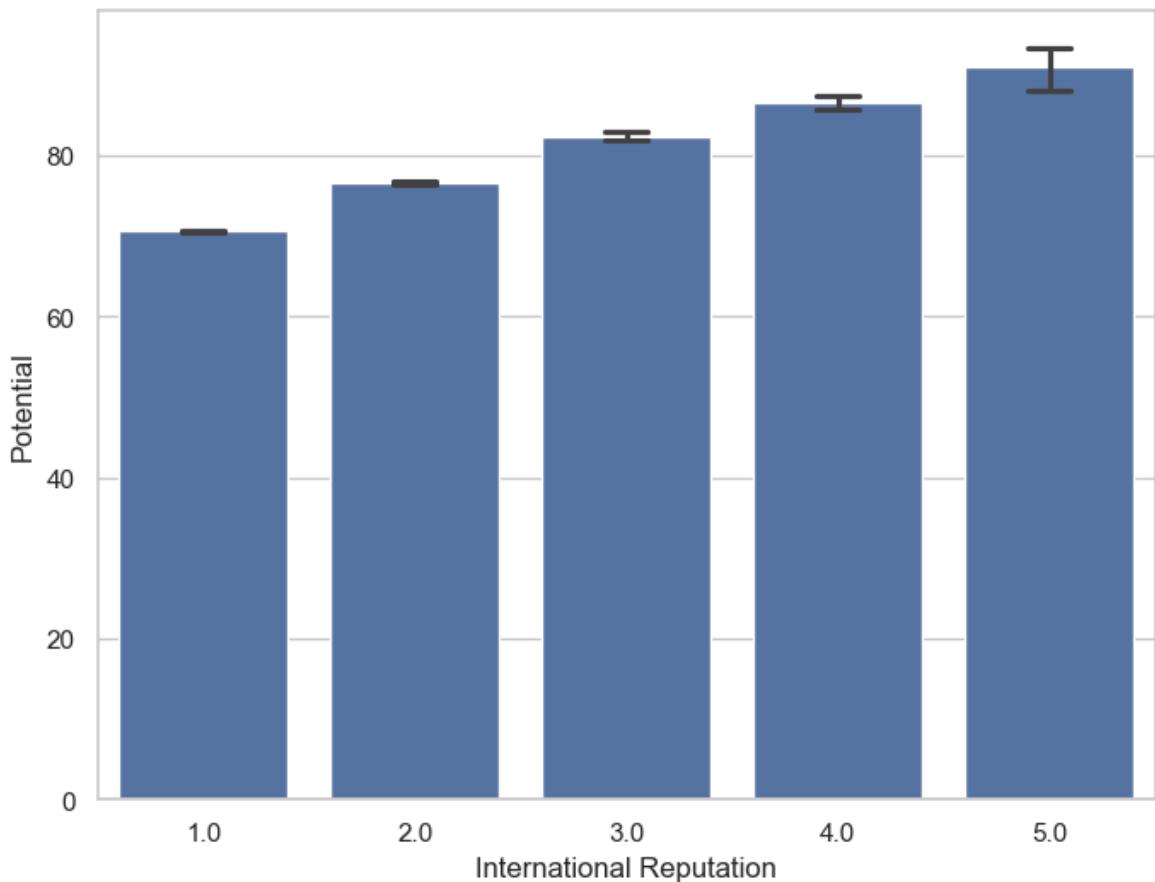
```
In [48]: f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19,ci=68)
plt.show()
```



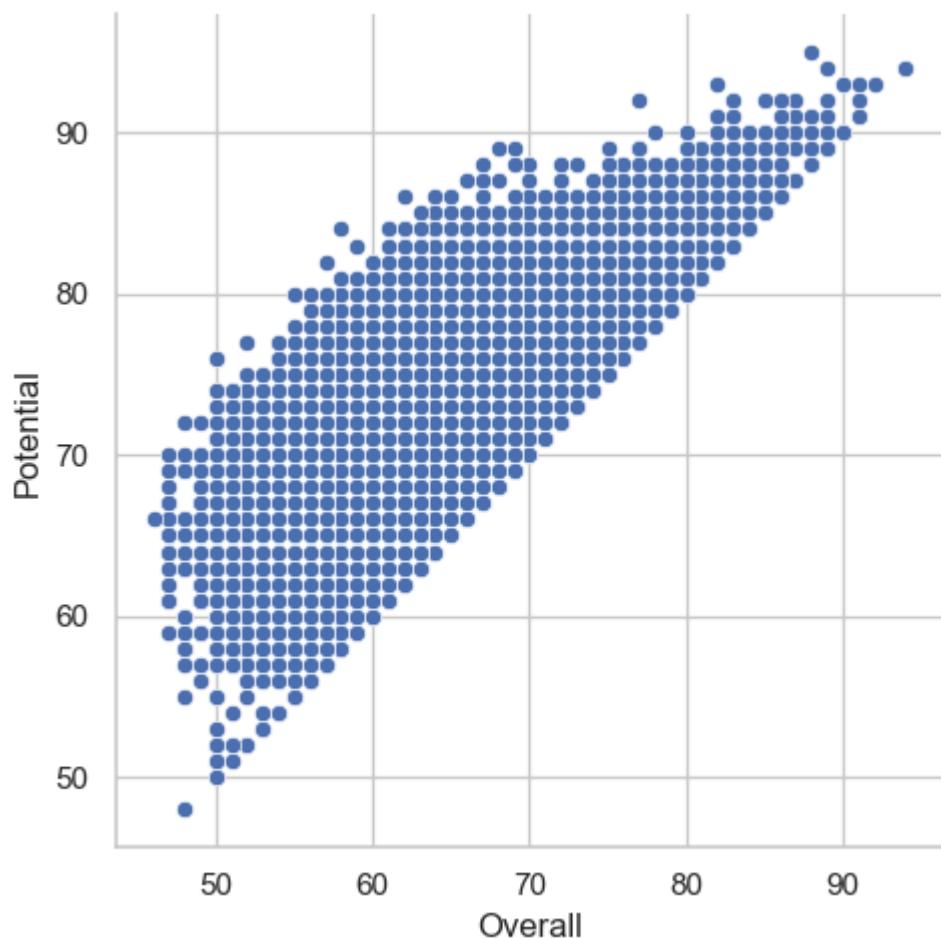
```
In [49]: f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19,ci="sd")
plt.show()
```



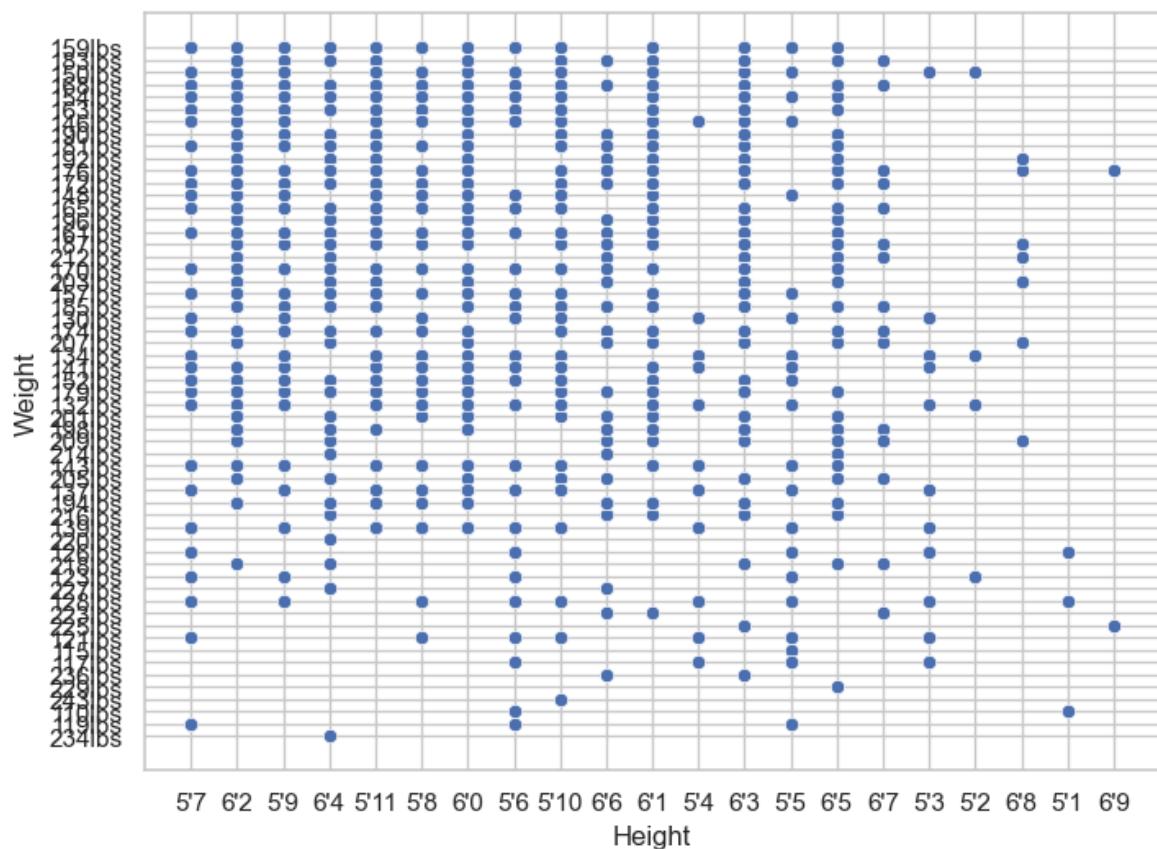
```
In [50]: f,ax=plt.subplots(figsize=(8,6))
sns.barplot(x="International Reputation",y="Potential",data=fifa19,capsize=0.2)
plt.show()
```



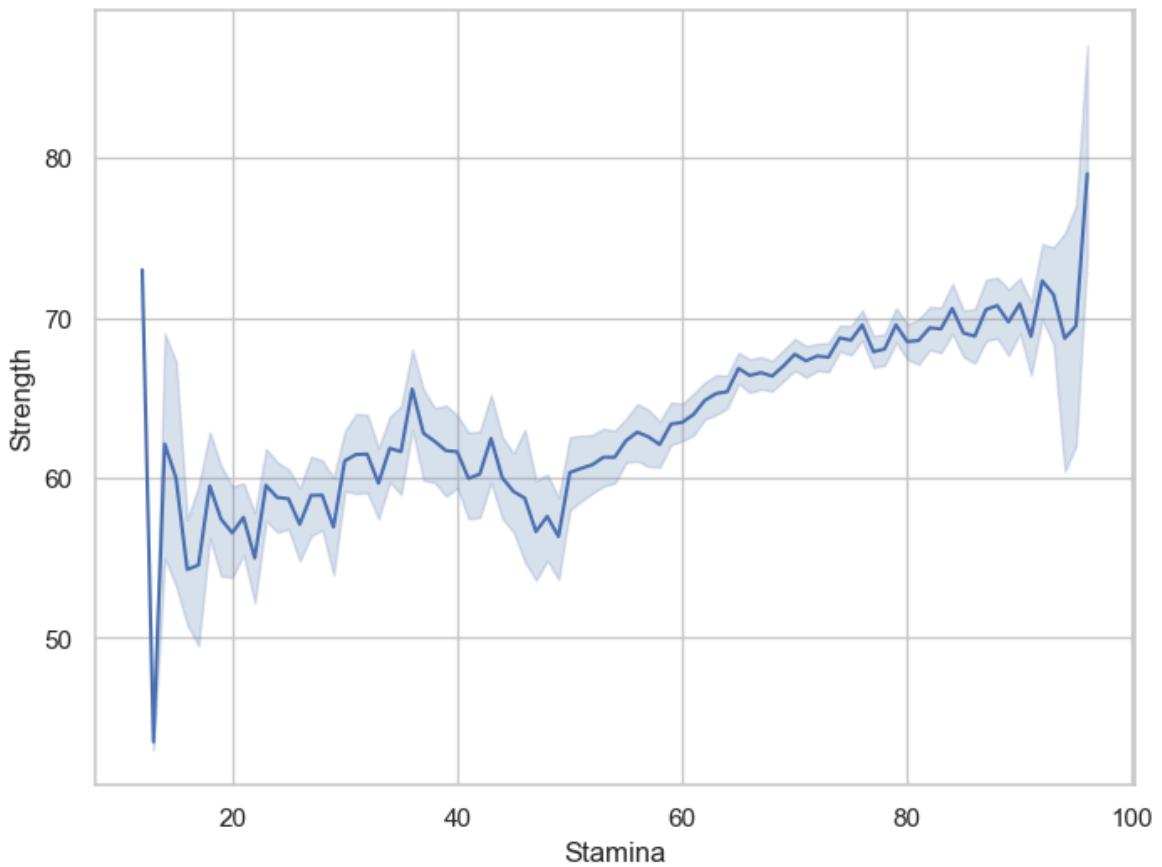
```
In [51]: g=sns.relplot(x="Overall",y="Potential",data=fifa19)  
plt.show()
```



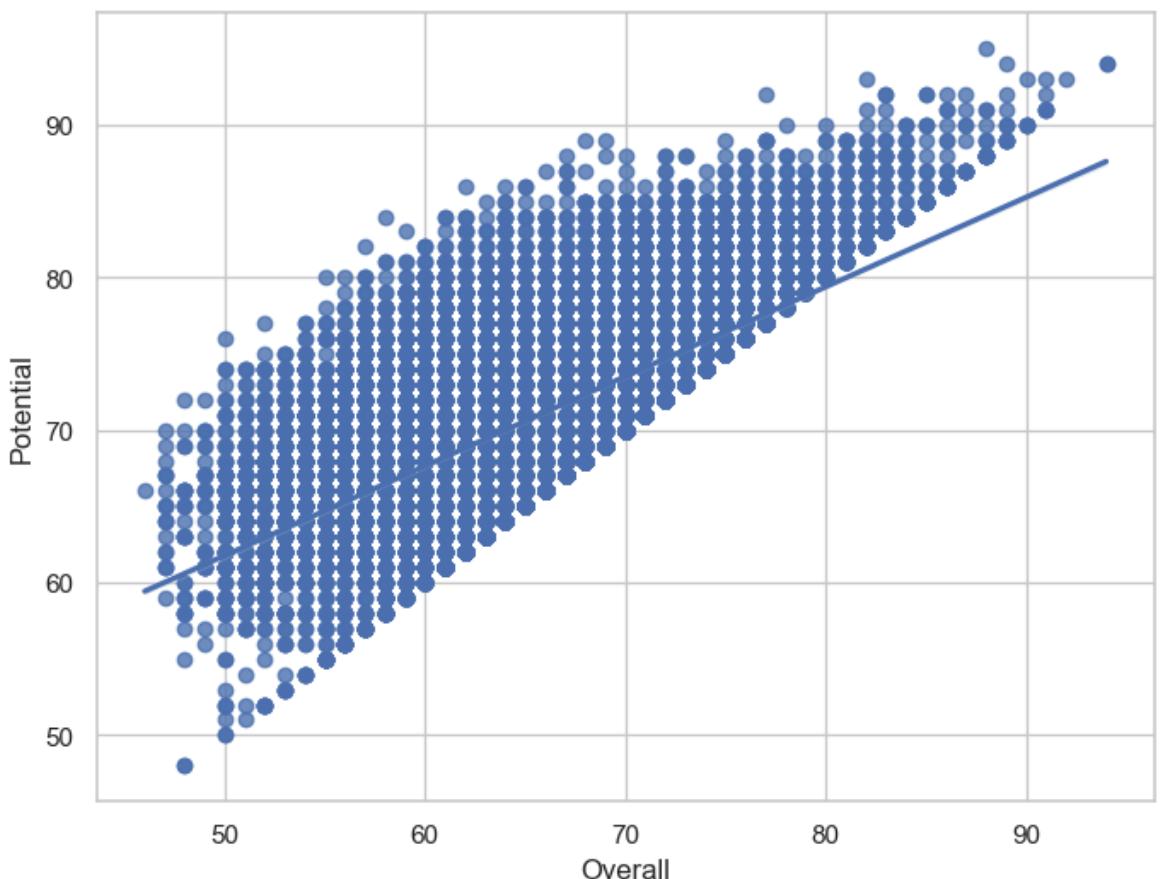
```
In [52]: f,ax=plt.subplots(figsize=(8,6))
sns.scatterplot(x="Height",y="Weight",data=fifa19)
plt.show()
```



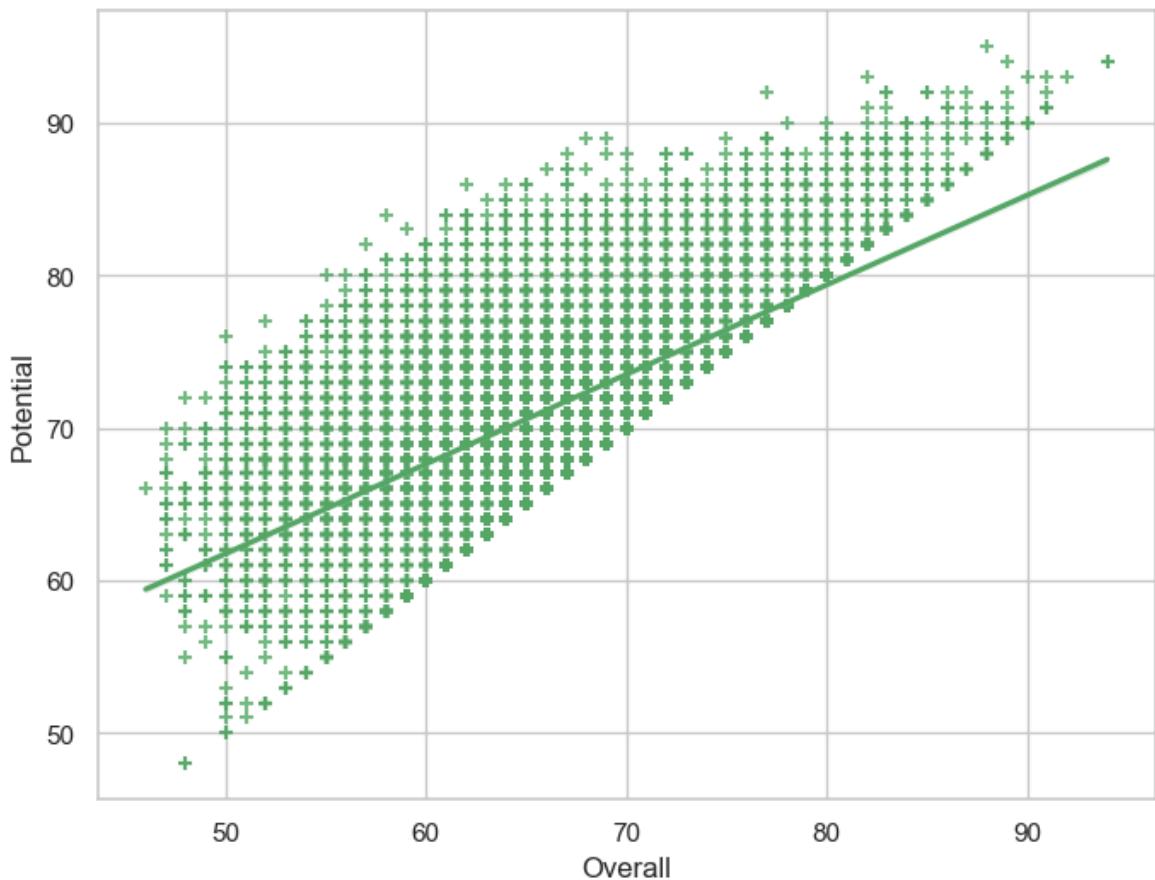
```
In [53]: f,ax=plt.subplots(figsize=(8,6))
ax=sns.lineplot(x="Stamina",y="Strength",data=fifa19)
plt.show()
```



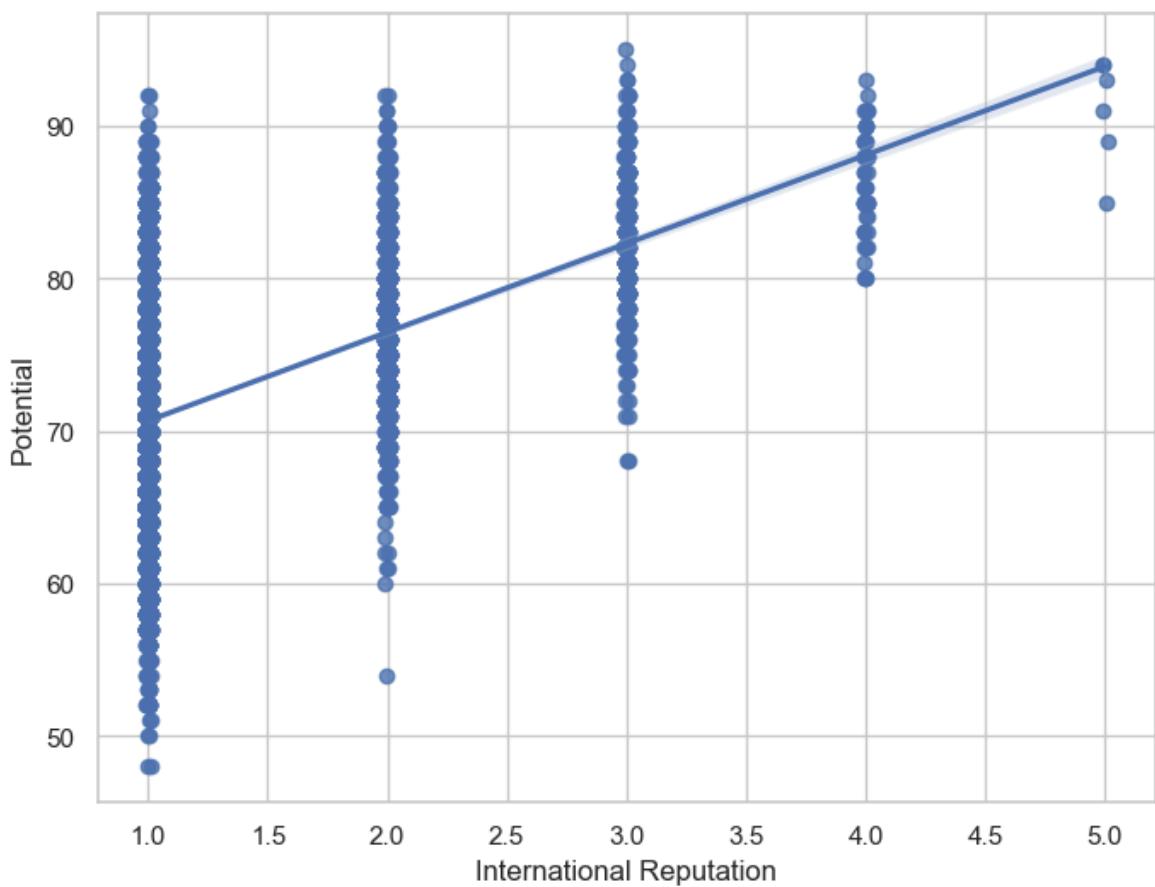
```
In [54]: f,ax=plt.subplots(figsize=(8,6))
ax=sns.regplot(x="Overall",y="Potential",data=fifa19)
plt.show()
```



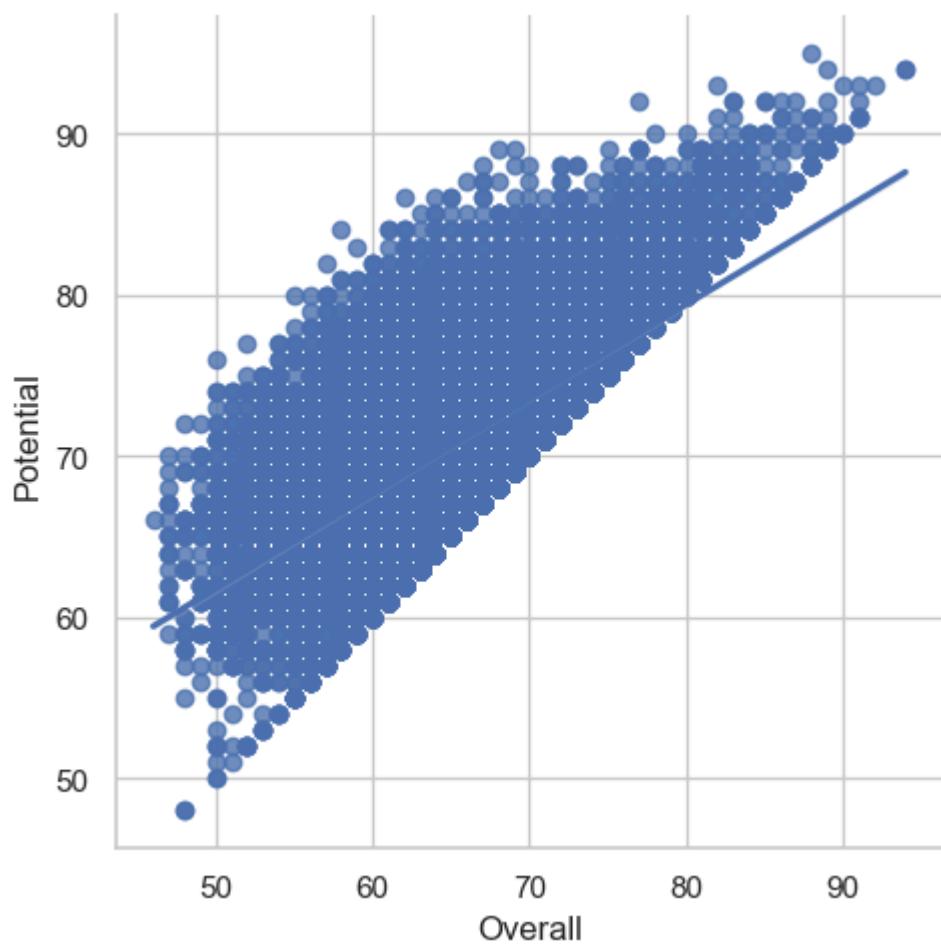
```
In [55]: f,ax=plt.subplots(figsize=(8,6))
ax=sns.regplot(x="Overall",y="Potential",data=fifa19,color='g',marker="+")
plt.show()
```



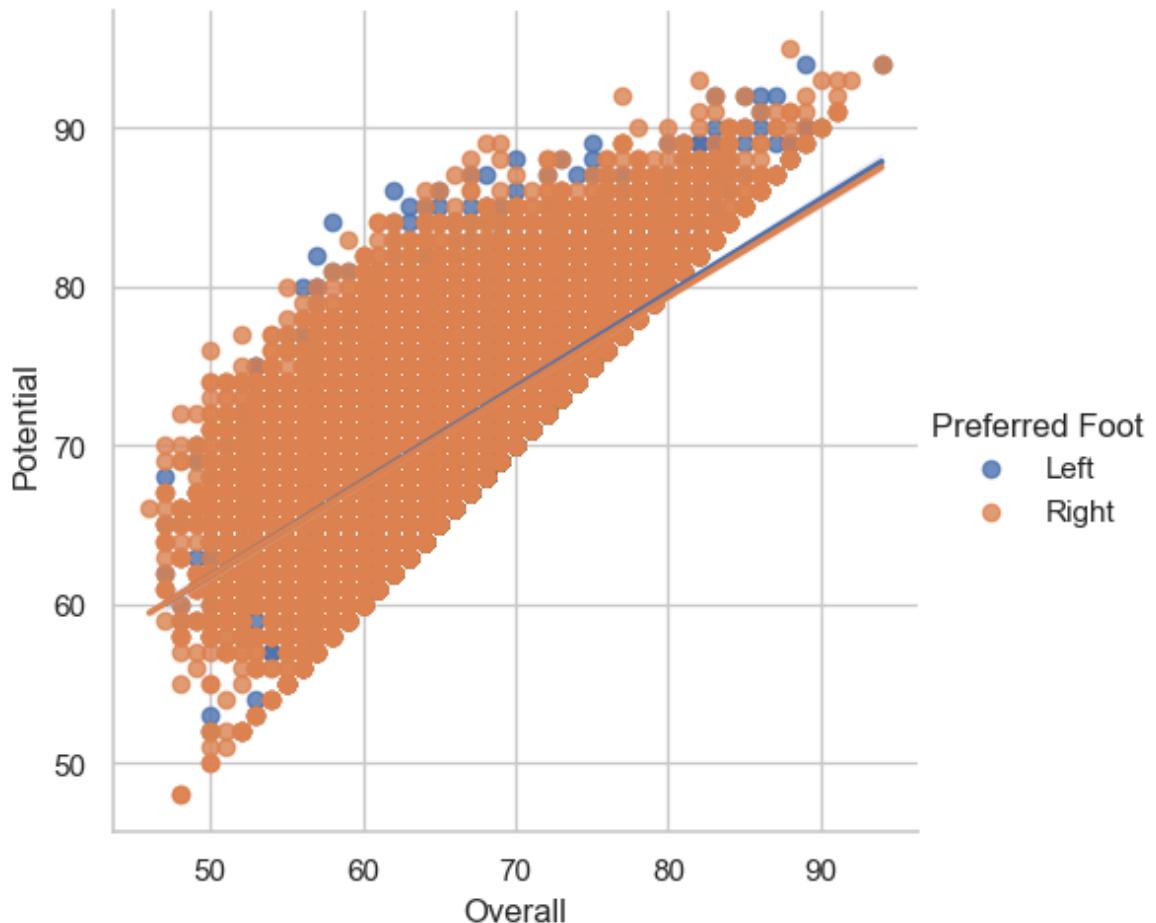
```
In [56]: f,ax=plt.subplots(figsize=(8,6))
sns.regplot(x="International Reputation",y="Potential",data=fifa19,x_jitter=.01)
plt.show()
```



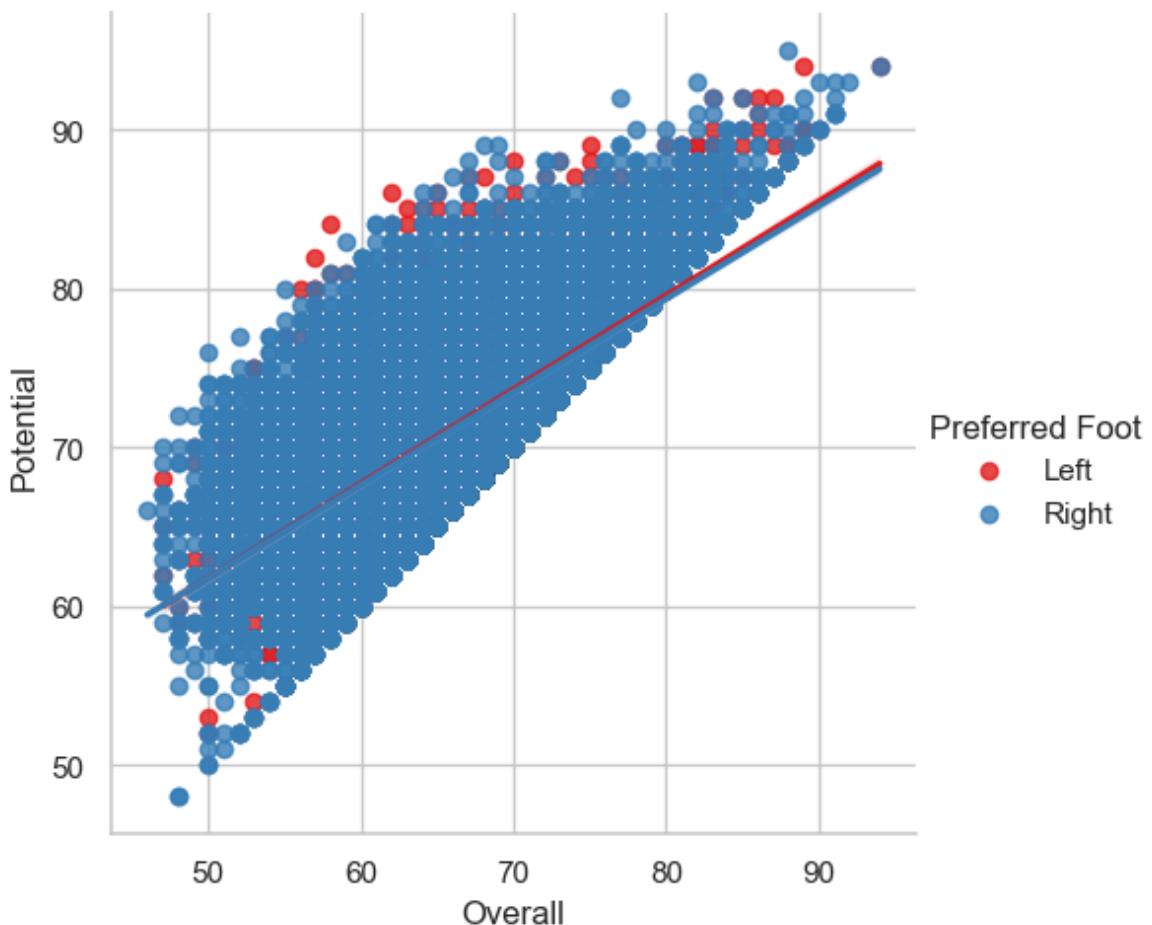
```
In [57]: g=sns.lmplot(x="Overall",y="Potential",data=fifa19)  
plt.show()
```



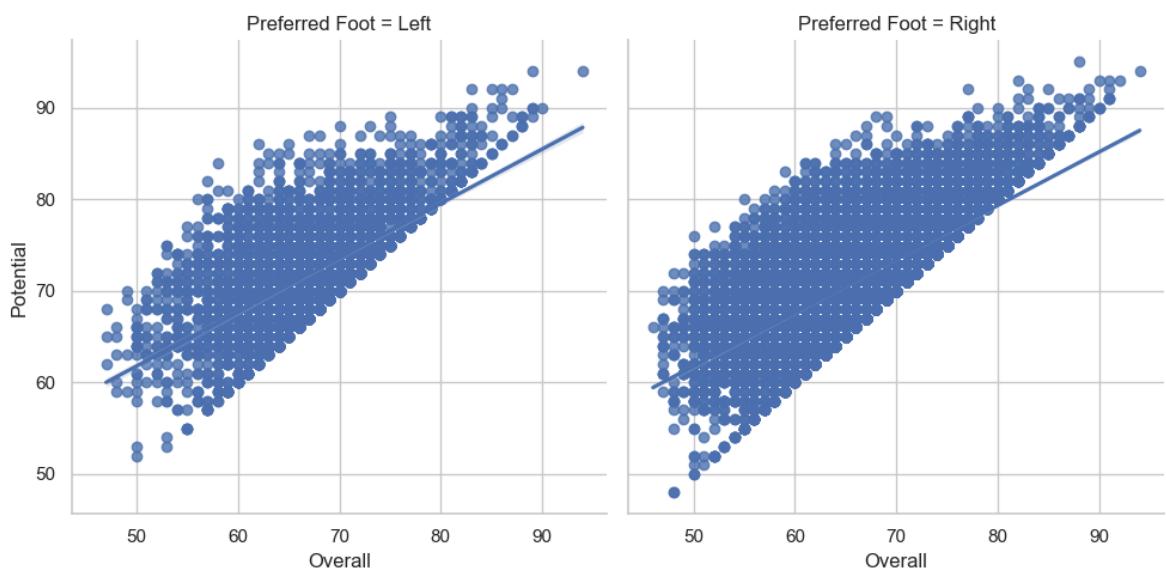
```
In [58]: g=sns.lmplot(x="Overall",y="Potential",hue="Preferred Foot",data=fifa19)  
plt.show()
```



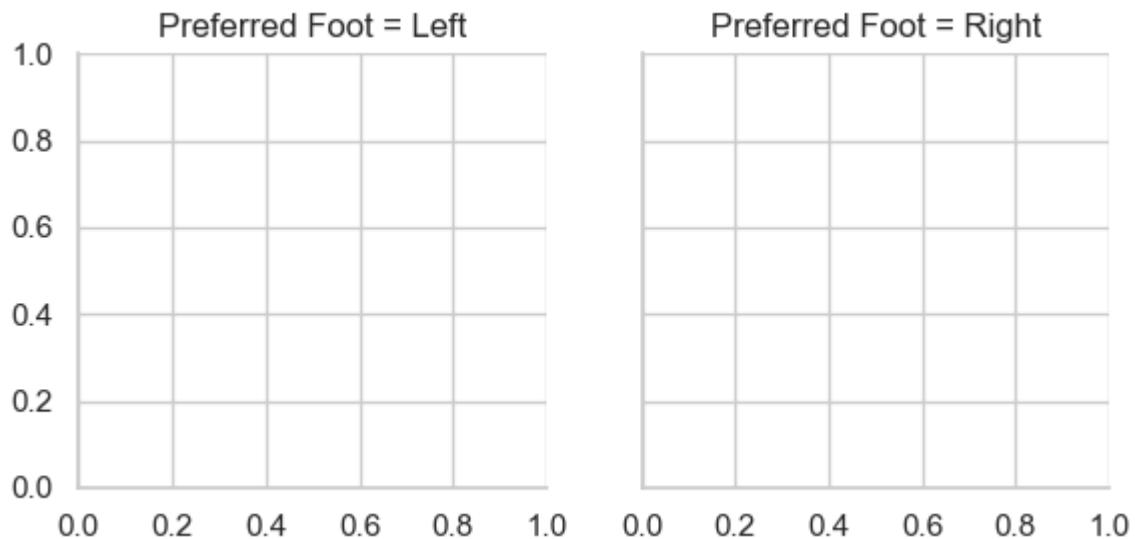
```
In [59]: g=sns.lmplot(x="Overall",y="Potential",hue="Preferred Foot",data=fifa19,palette=  
plt.show()
```



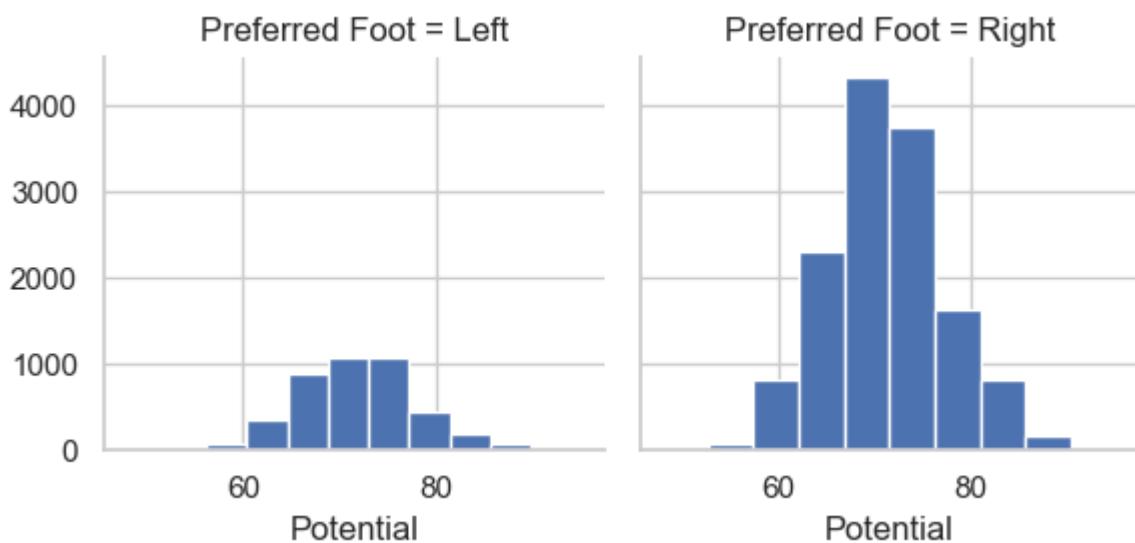
```
In [60]: g=sns.lmplot(x="Overall",y="Potential",col="Preferred Foot",data=fifa19)  
plt.show()
```



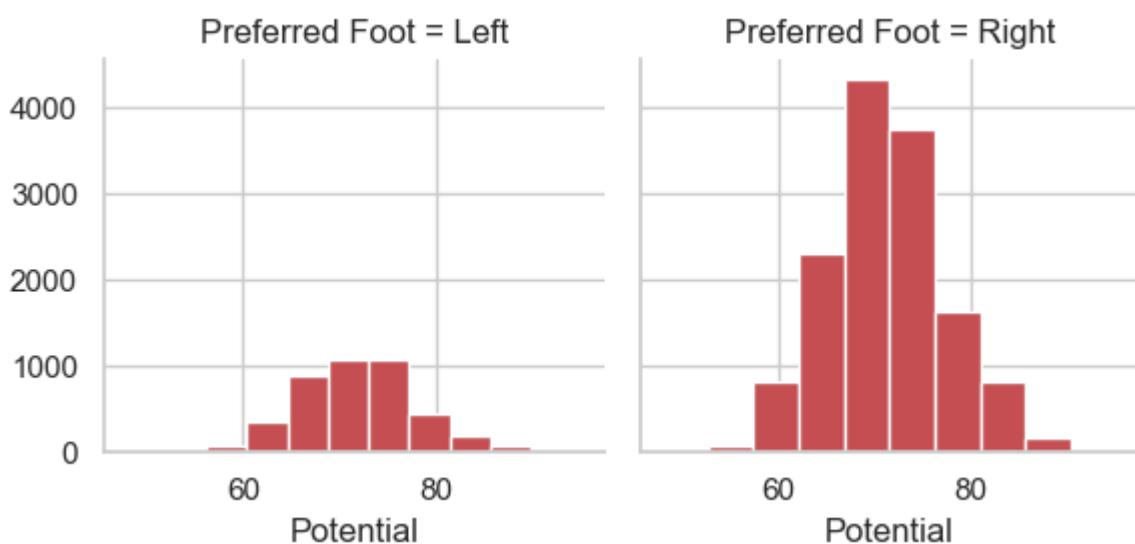
```
In [61]: g=sns.FacetGrid(fifa19,col="Preferred Foot")  
plt.show()
```



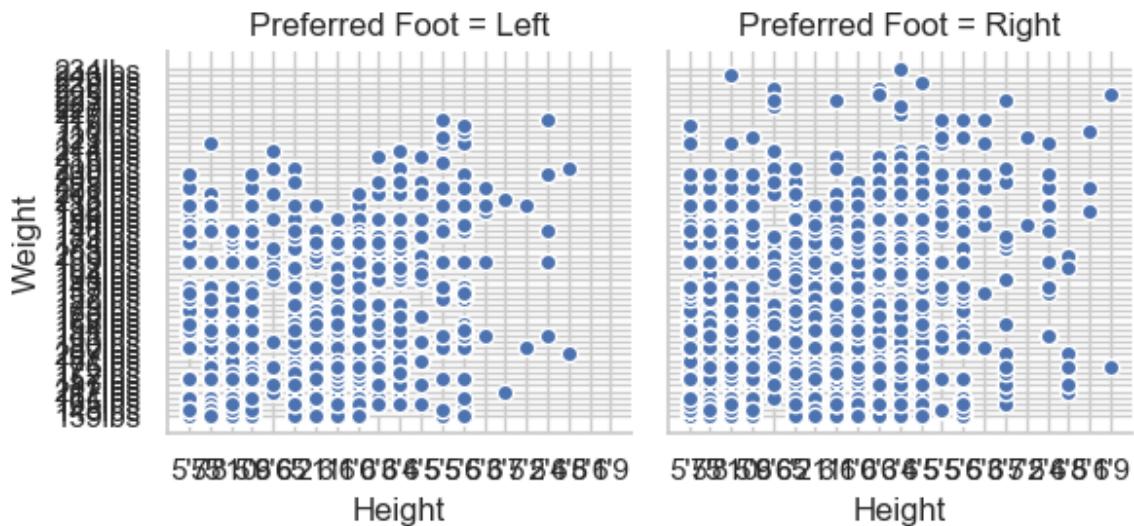
```
In [62]: g=sns.FacetGrid(fifa19,col="Preferred Foot")
g=g.map(plt.hist,"Potential")
```



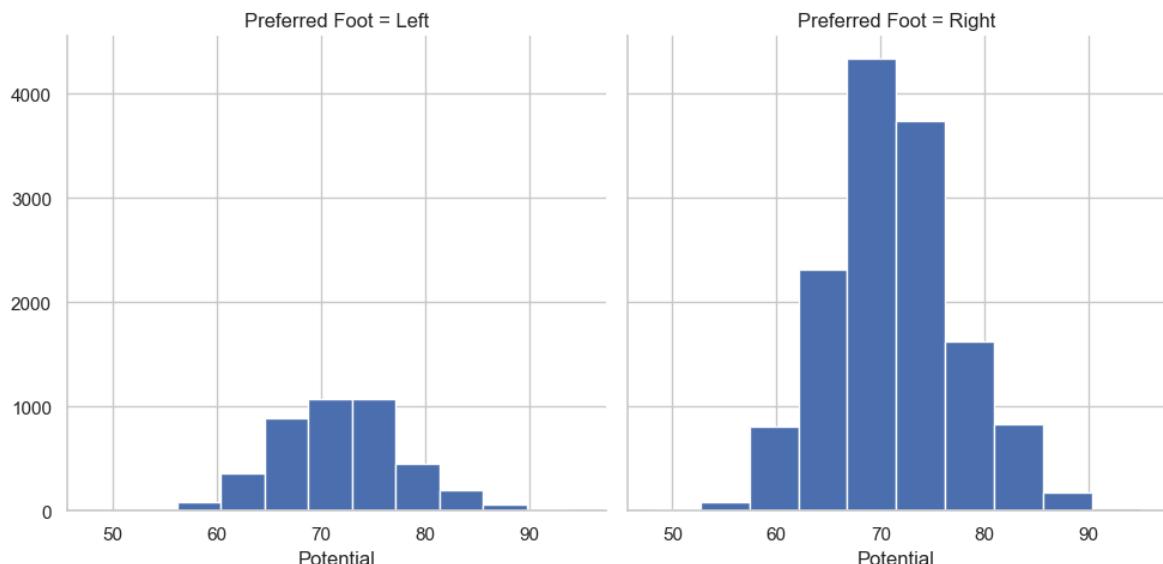
```
In [63]: g=sns.FacetGrid(fifa19,col="Preferred Foot")
g=g.map(plt.hist,"Potential",bins=10,color="r")
```



```
In [64]: g=sns.FacetGrid(fifa19,col="Preferred Foot")
g=g.map(plt.scatter,"Height","Weight",edgecolor="w").add_legend()
```

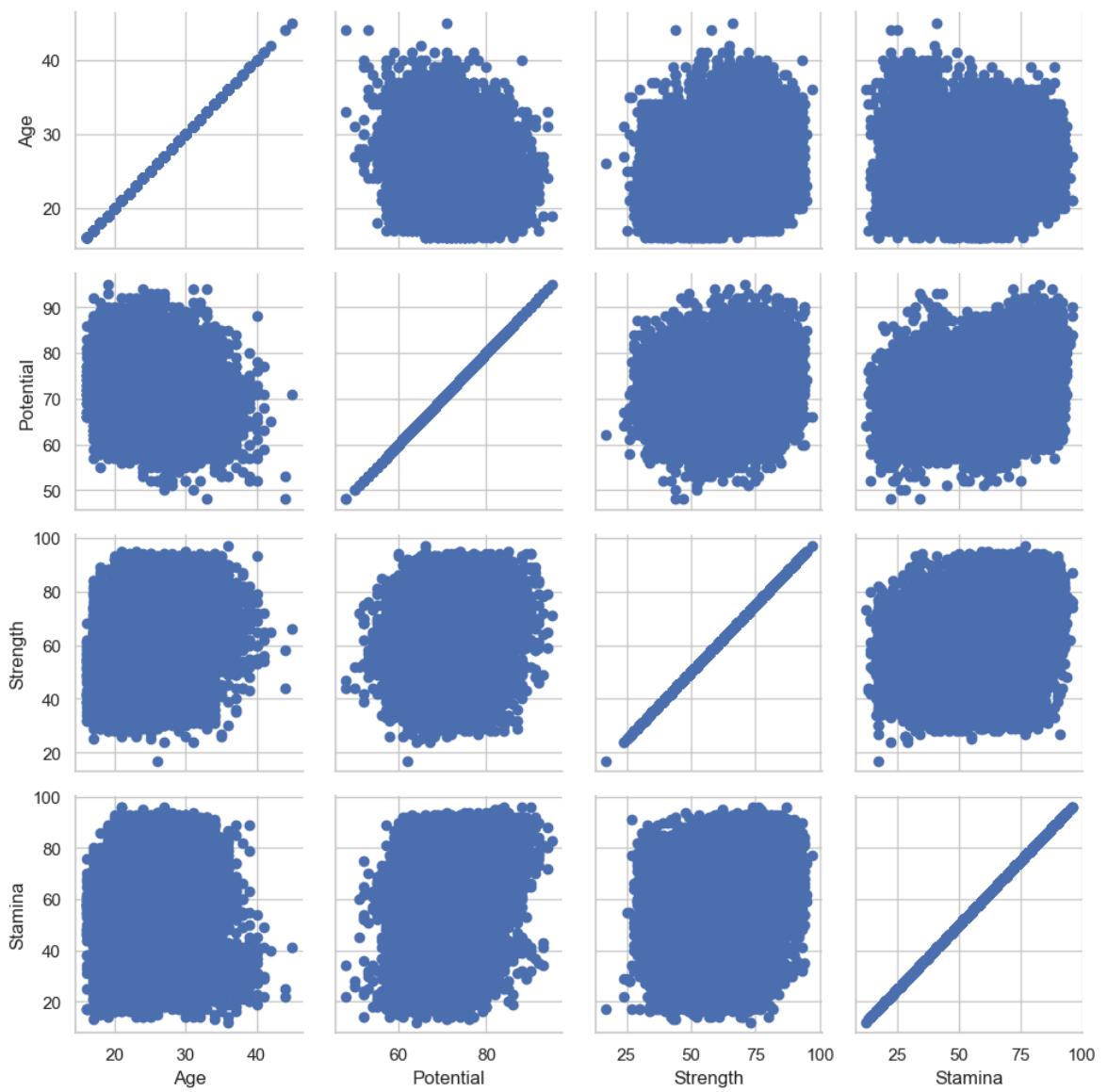


```
In [65]: g=sns.FacetGrid(fifa19,col="Preferred Foot",height=5,aspect=1)
g=g.map(plt.hist,"Potential")
```



```
In [66]: fifa19_new=fifa19[['Age','Potential','Strength','Stamina','Preferred Foot']]
```

```
In [67]: g=sns.PairGrid(fifa19_new)
g=g.map(plt.scatter)
```

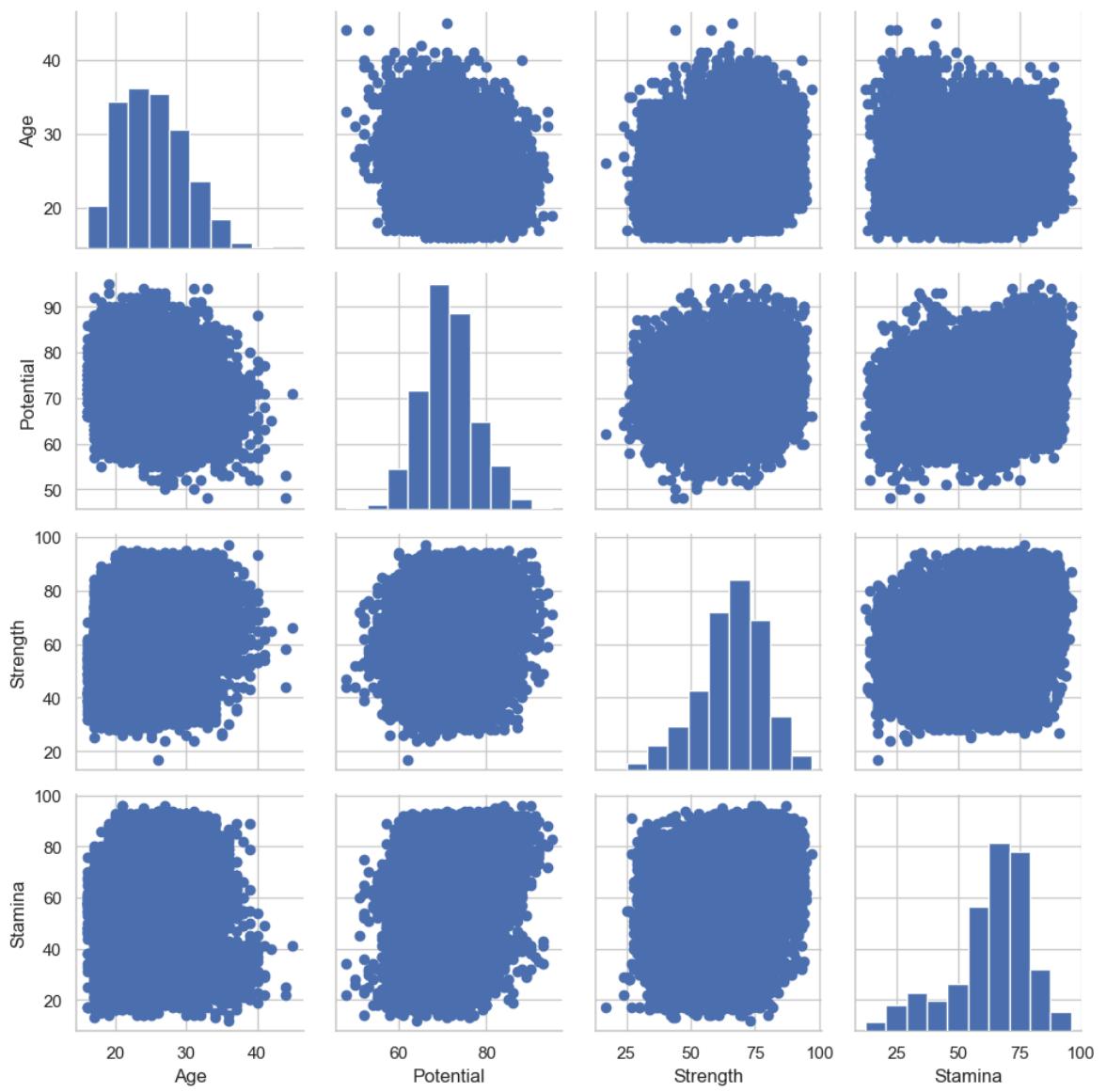


```
In [68]: g=sns.Pairplot(fifa19_new)
g=g.map_diag(plt.hist)
g=g.map_offdiag(plt.scatter)
```

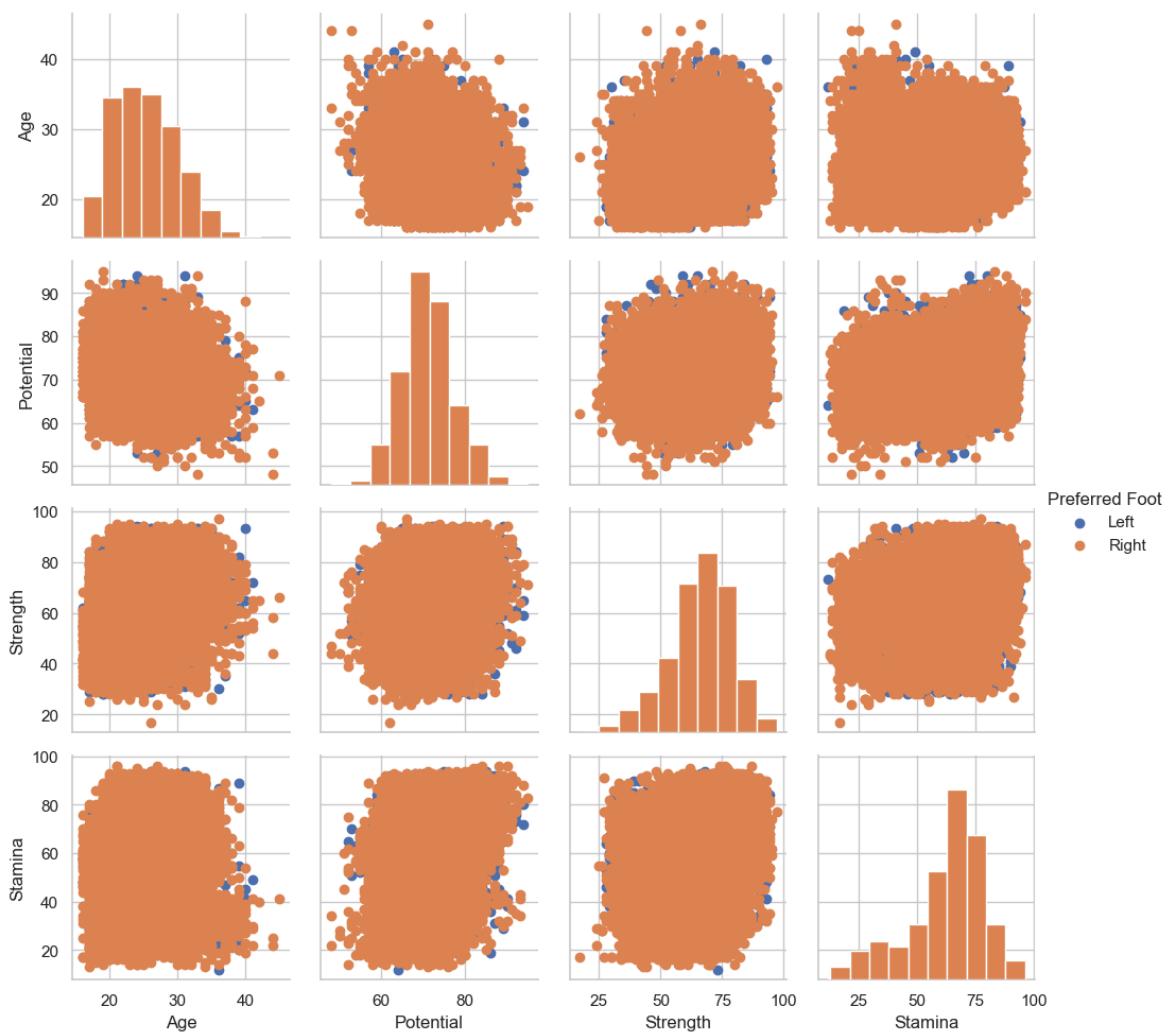
AttributeError
Cell In[68], line 1
----> 1 g=sns.Pairplot(fifa19_new)
2 g=g.map_diag(plt.hist)
3 g=g.map_offdiag(plt.scatter)

AttributeError: module 'seaborn' has no attribute 'Pairplot'

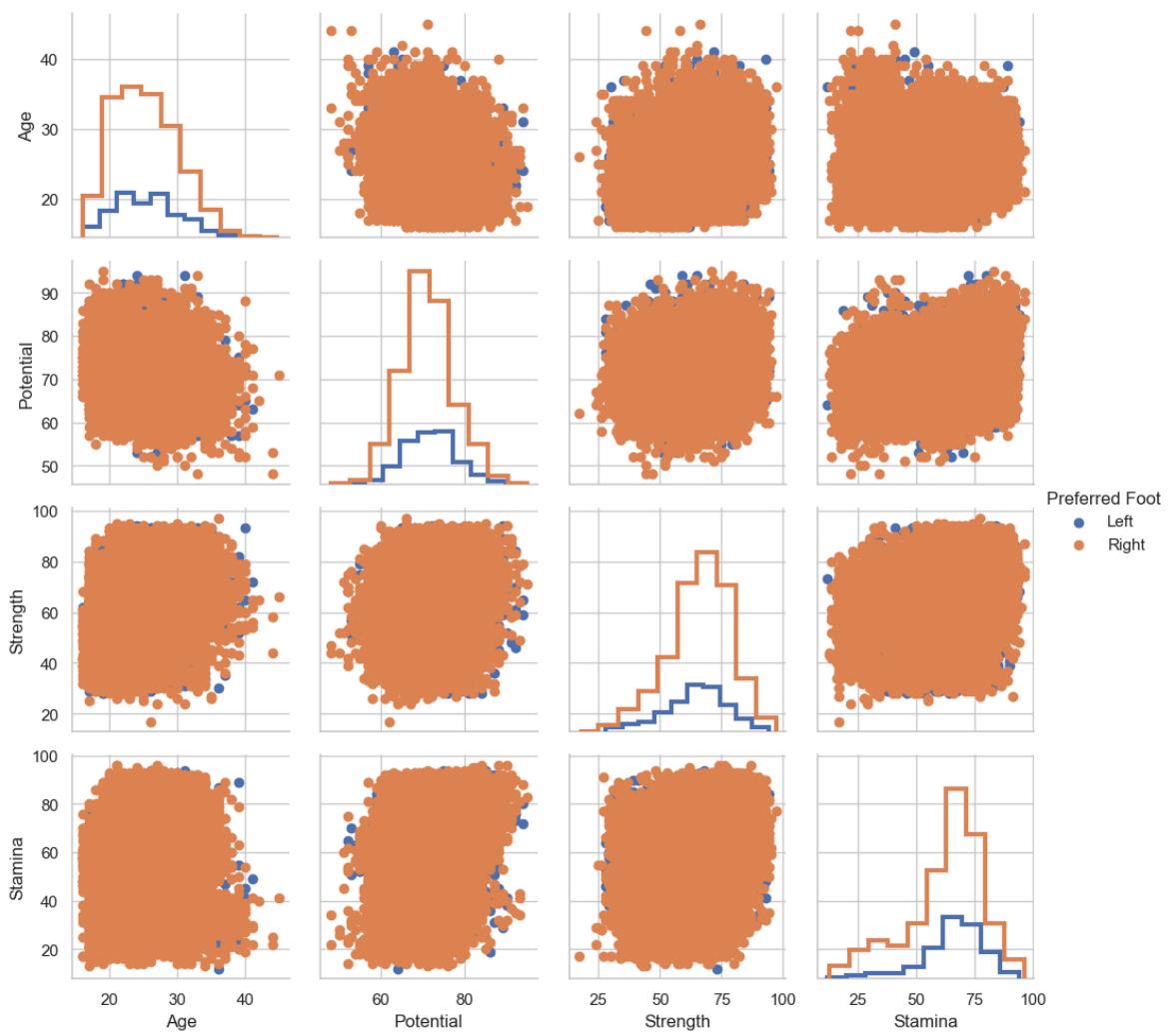
```
In [69]: g=sns.PairGrid(fifa19_new)
g=g.map_diag(plt.hist)
g=g.map_offdiag(plt.scatter)
```



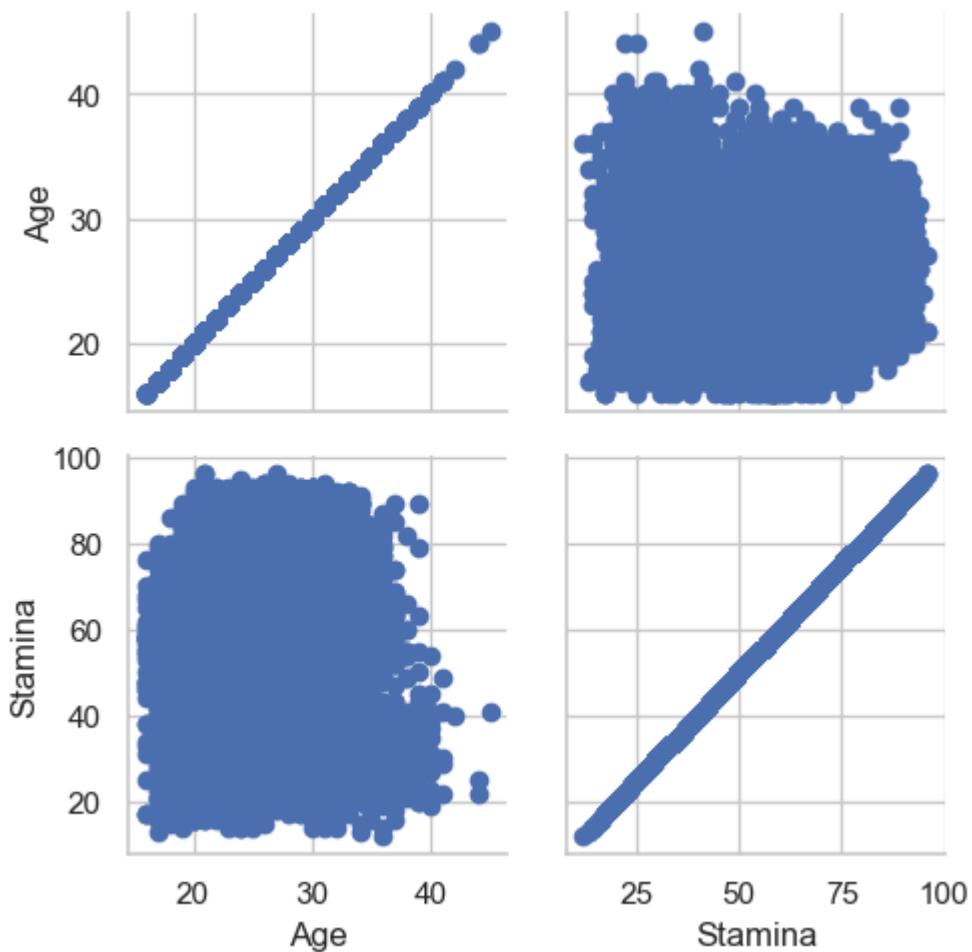
```
In [70]: g=sns.PairGrid(fifa19_new,hue="Preferred Foot")
g=g.map_diag(plt.hist)
g=g.map_offdiag(plt.scatter)
g=g.add_legend()
```



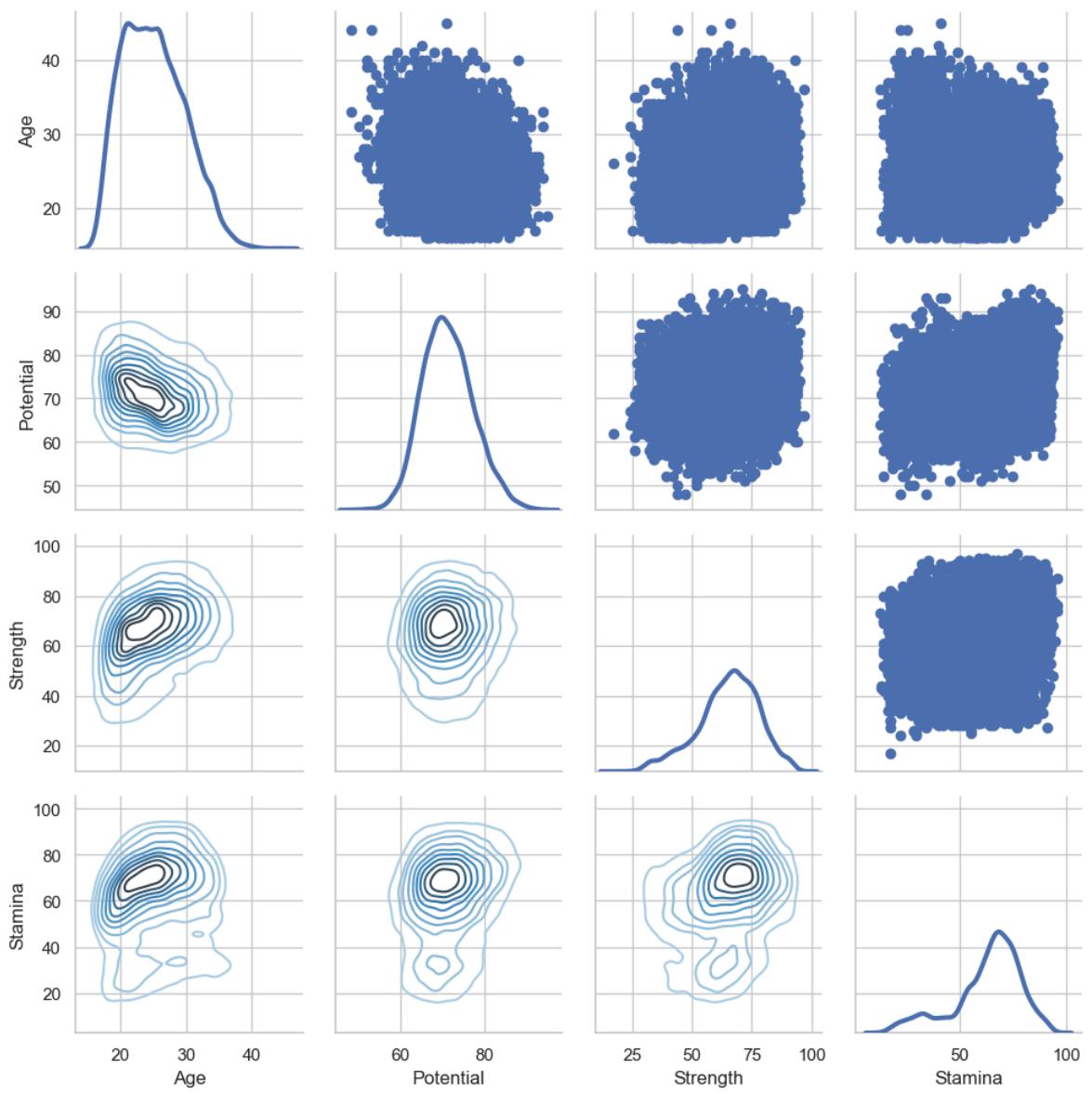
```
In [71]: g=sns.PairGrid(fifa19_new,hue="Preferred Foot")
g.map_diag(plt.hist,histtype="step",linewidth=3)
g.map_offdiag(plt.scatter)
g.add_legend()
```



```
In [72]: g=sns.PairGrid(fifa19_new,vars=[ 'Age' , 'Stamina' ])
g=g.map(plt.scatter)
```

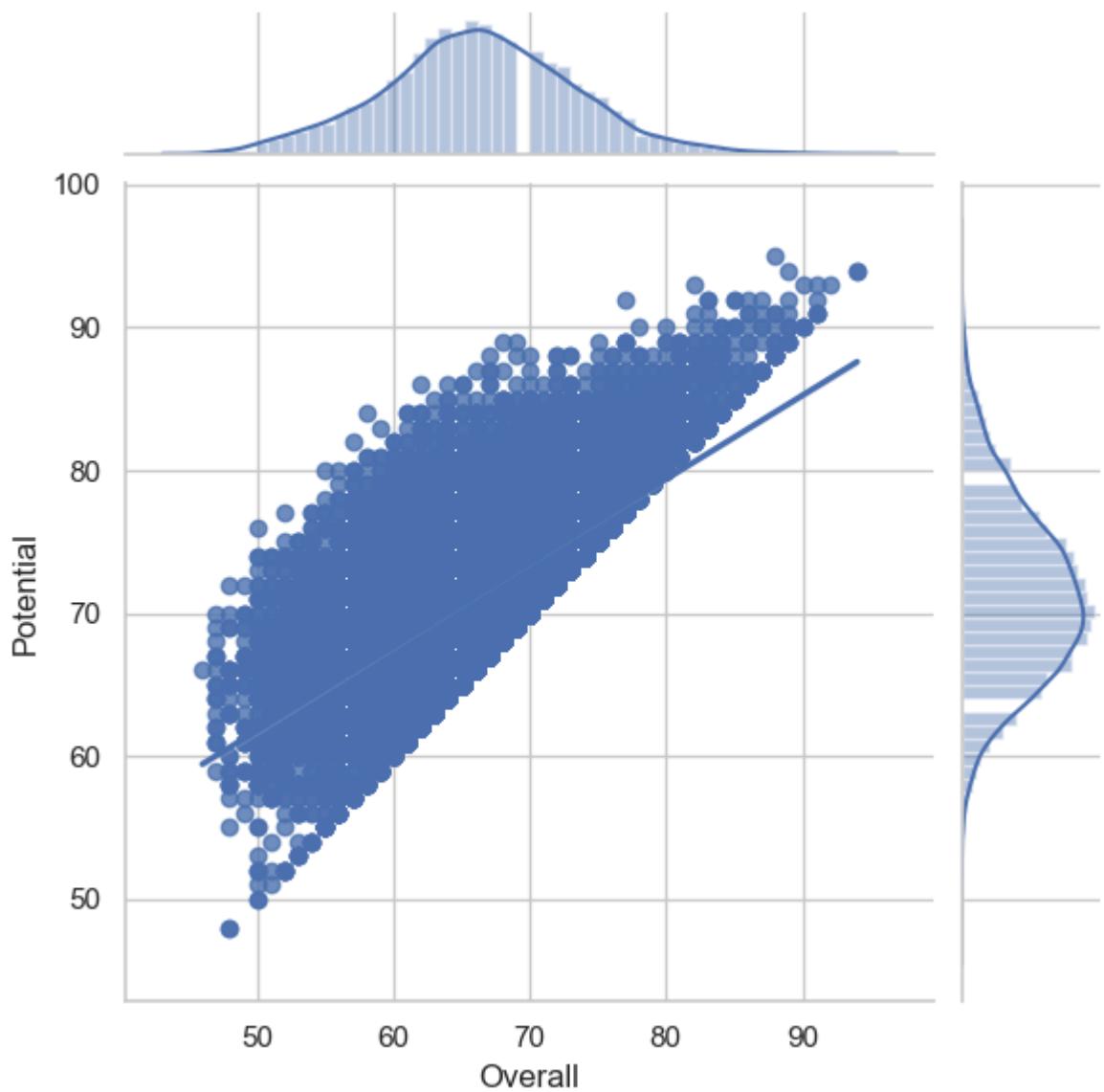


```
In [73]: g=sns.PairGrid(fifa19_new)
g=g.map_upper(plt.scatter)
g=g.map_lower(sns.kdeplot,cmap="Blues_d")
g=g.map_diag(sns.kdeplot,lw=3,legend=False)
```



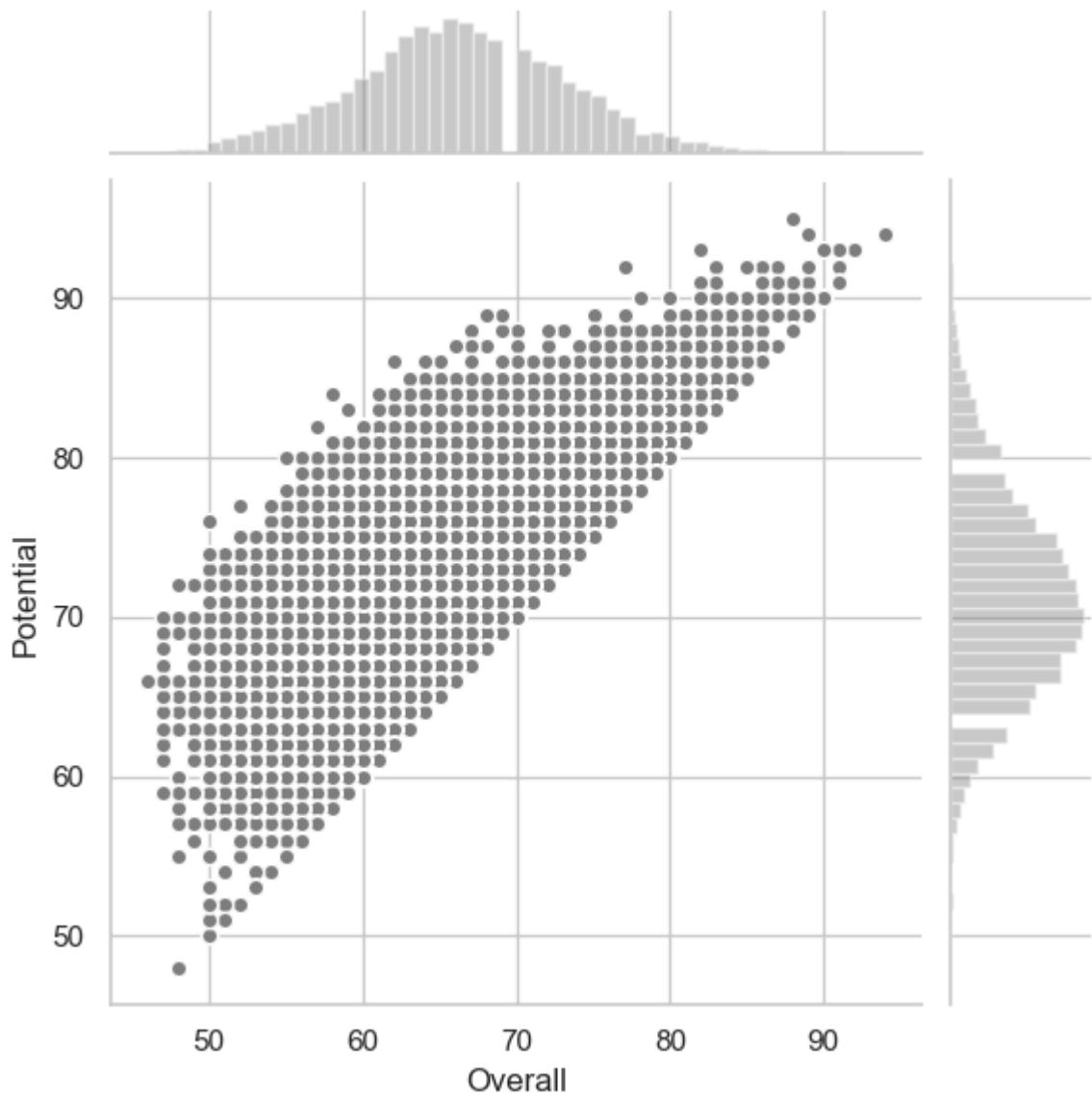
Seaborn Jointgrid() function

```
In [74]: g=sns.JointGrid(x="Overall",y="Potential",data=fifa19)
g=g.plot(sns.regplot,sns.distplot)
```

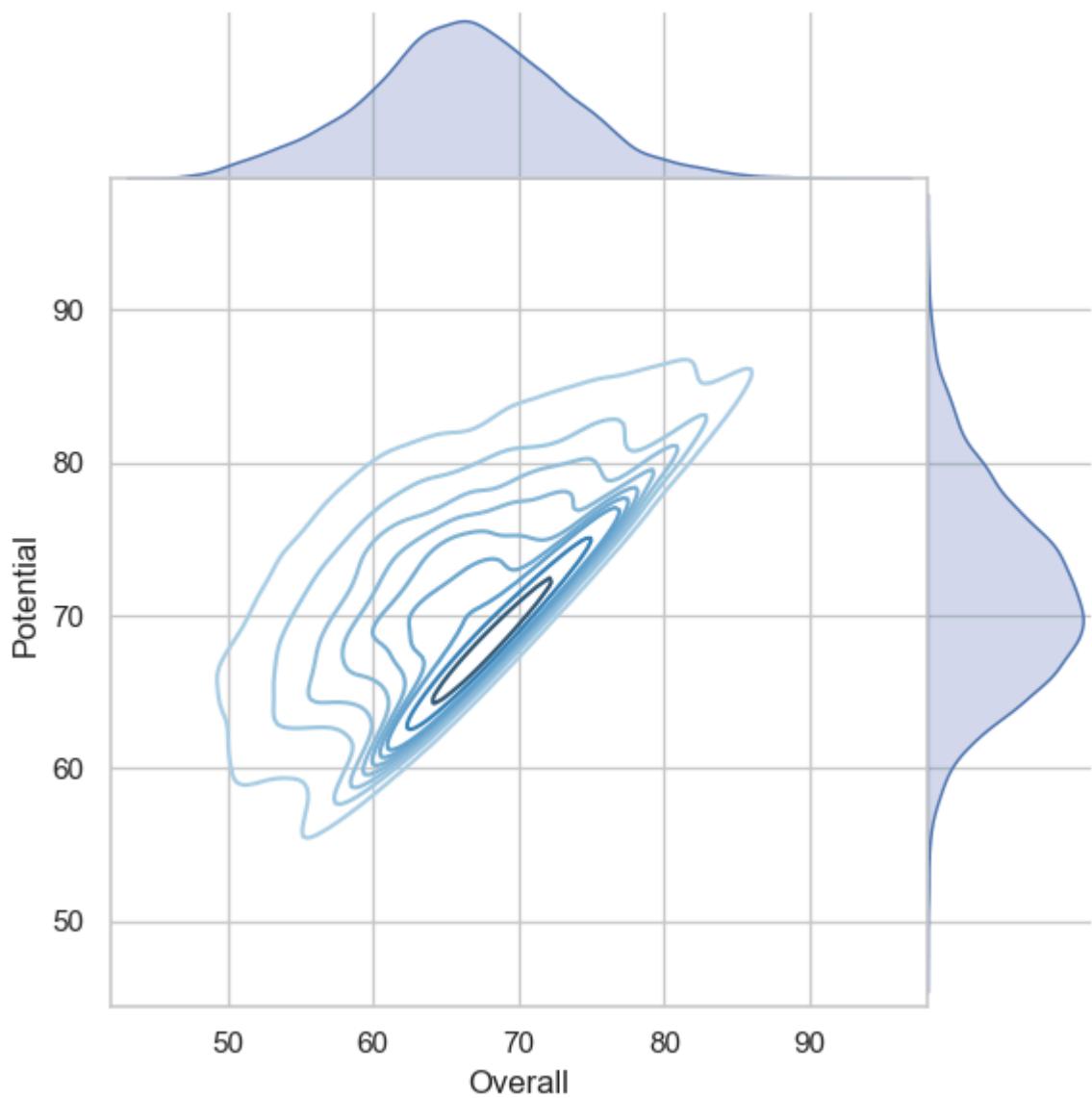


```
In [75]: import matplotlib.pyplot as plt
```

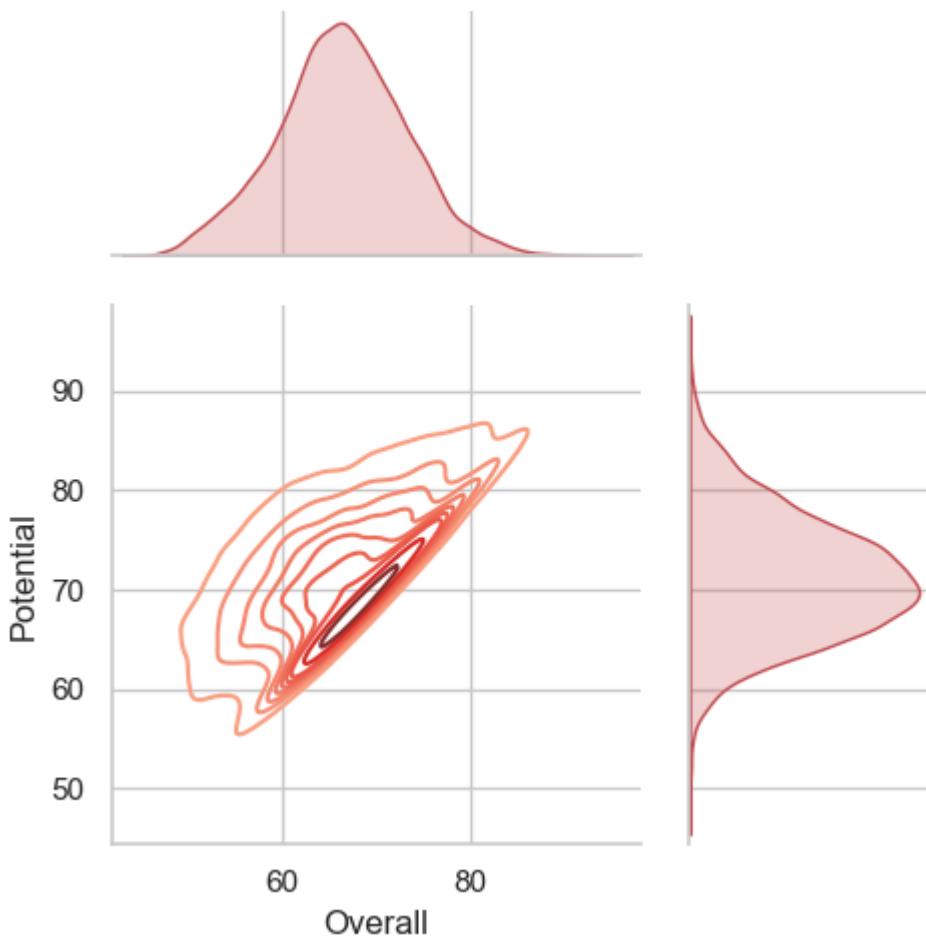
```
In [76]: g=sns.JointGrid(x="Overall",y="Potential",data=fifa19)
g=g.plot_joint(plt.scatter,color=".5",edgecolor="white")
g=g.plot_marginals(sns.distplot,kde=False,color=".5")
```



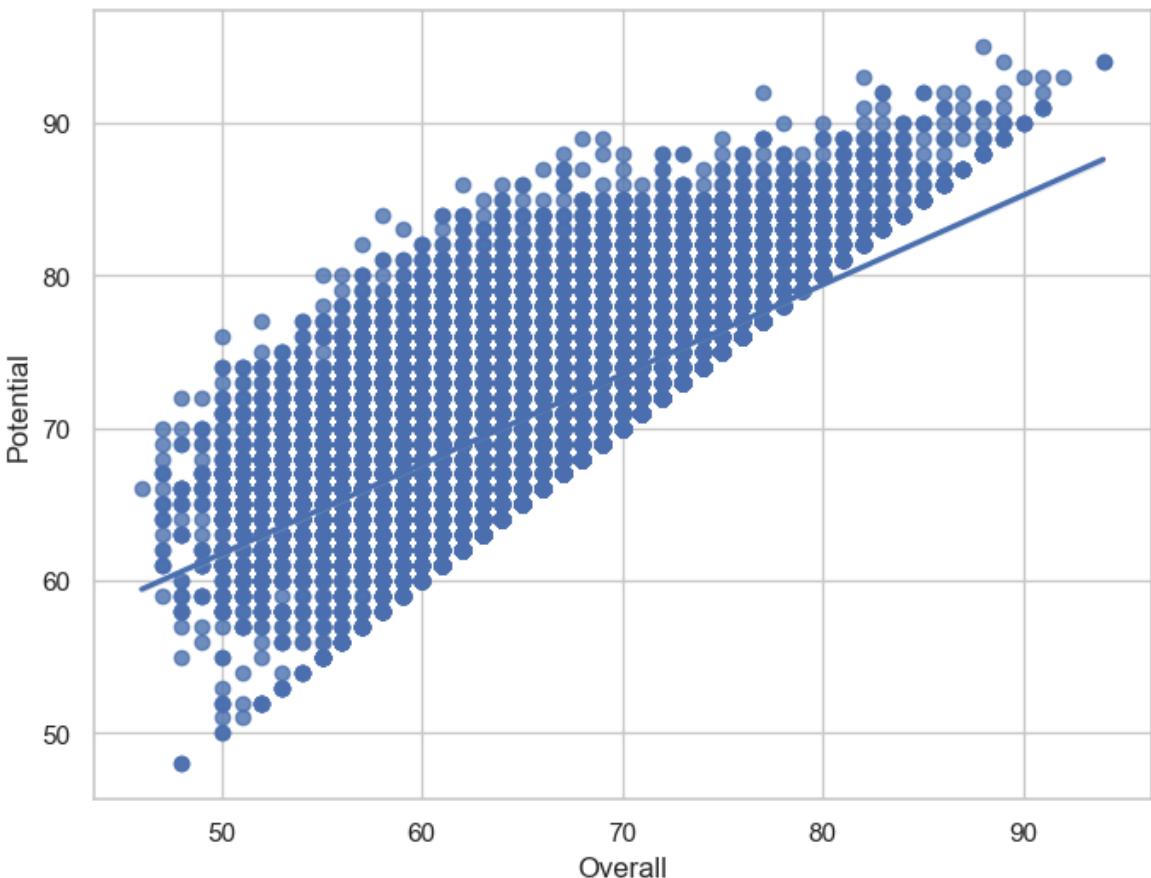
```
In [77]: g=sns.JointGrid(x="Overall",y="Potential",data=fifa19,space=0)
g=g.plot_joint(sns.kdeplot,cmap="Blues_d")
g=g.plot_marginals(sns.kdeplot,shade=True)
```



```
In [78]: 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)
```

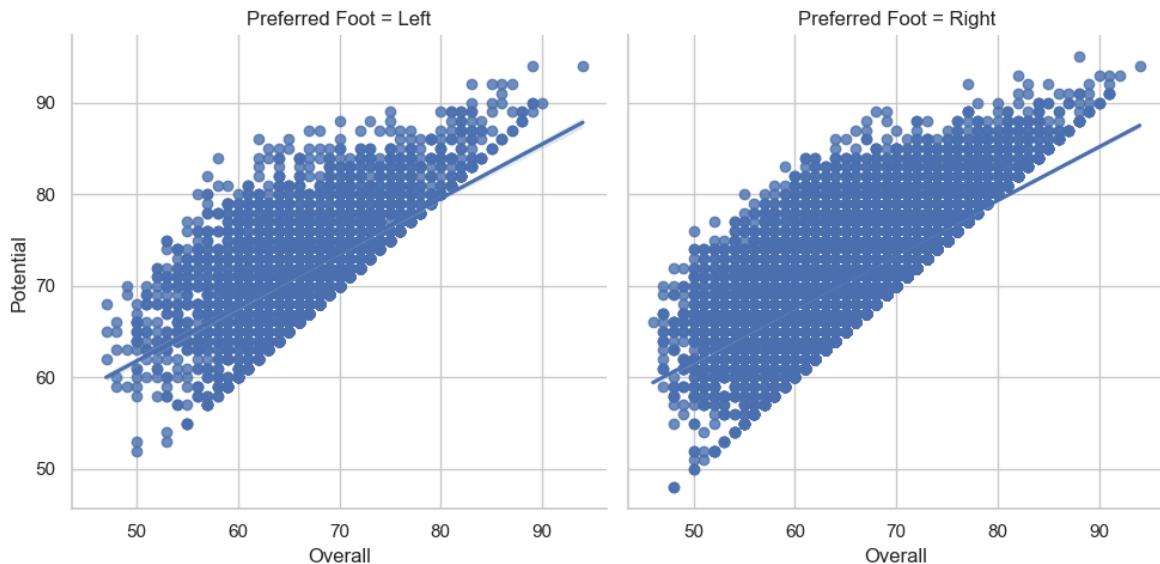


```
In [79]: f,ax=plt.subplots(figsize=(8,6))
ax=sns.regplot(x="Overall",y="Potential",data=fifa19)
```



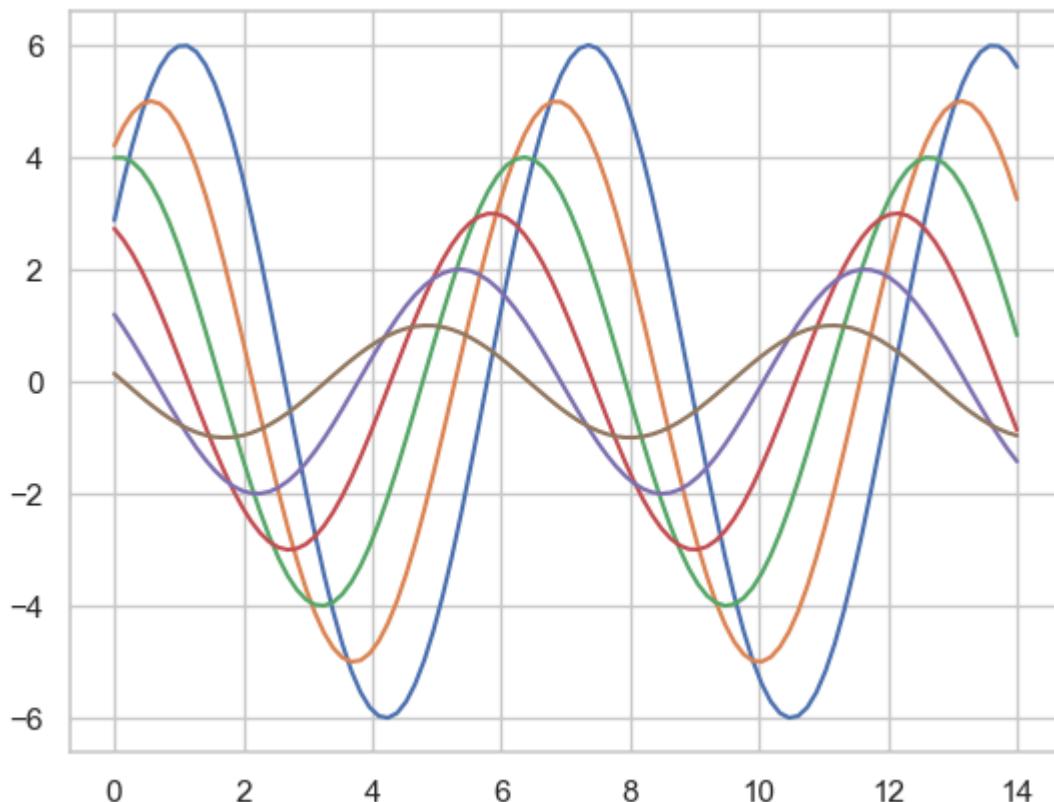
```
In [80]: sns.lmplot(x="Overall",y="Potential",col="Preferred Foot",data=fifa19,col_wrap=2)
```

Out[80]: <seaborn.axisgrid.FacetGrid at 0x2198a37e850>

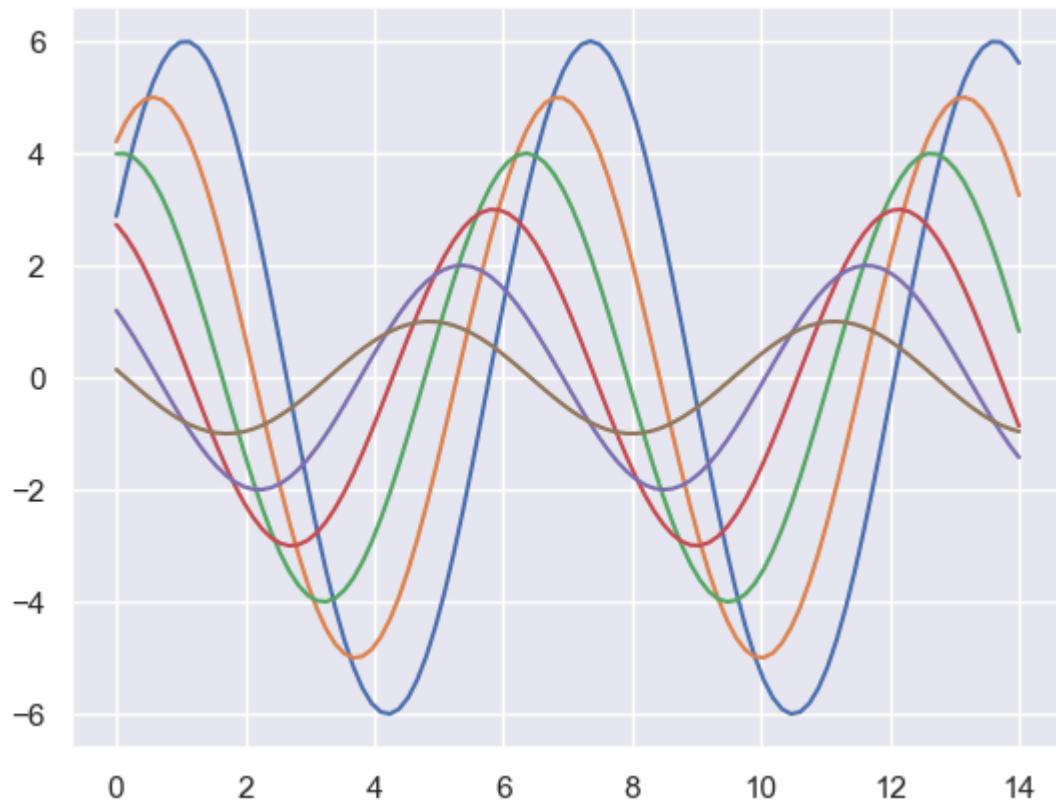


```
In [81]: def sinplot(flip=1):
    x=np.linspace(0,14,100)
    for i in range(1,7):
        plt.plot(x,np.sin(x+i*.5)*(7-i)*flip)
```

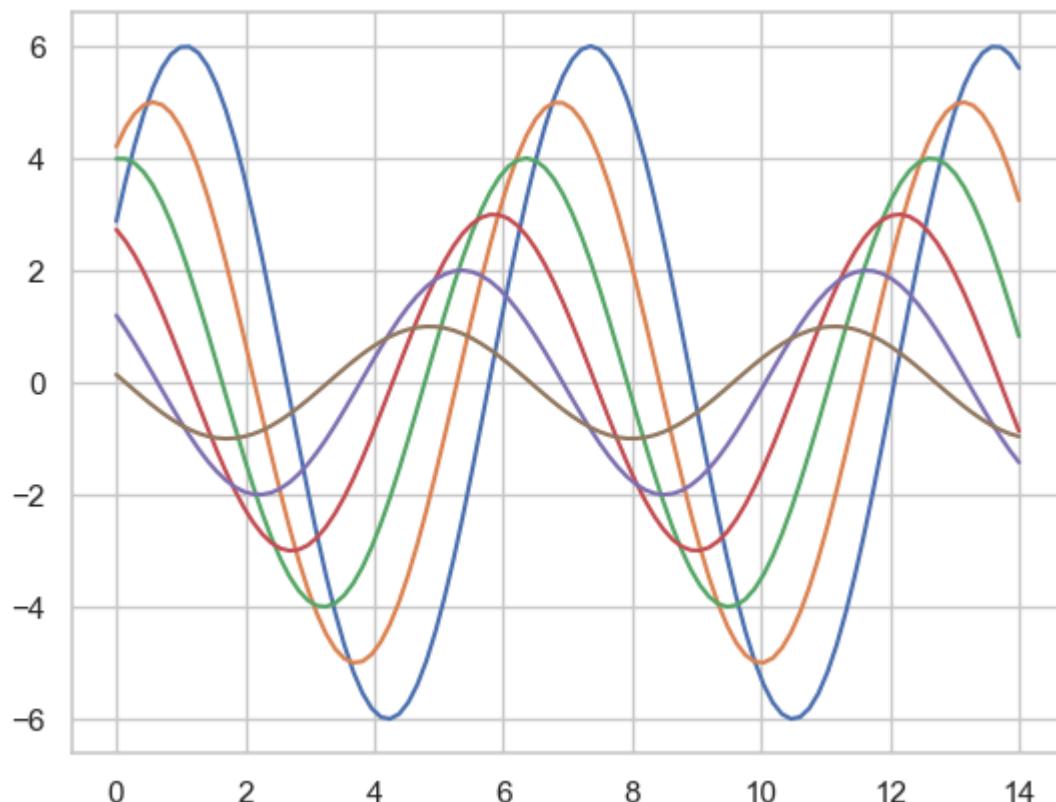
In [82]: sinplot()



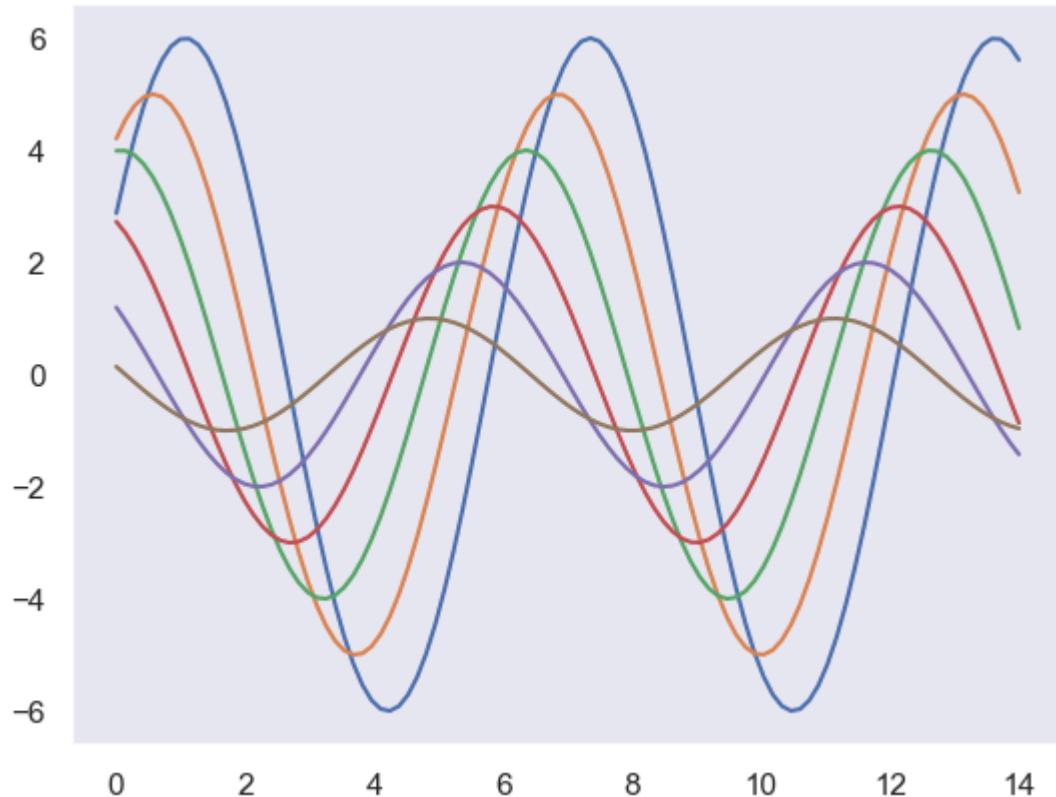
```
In [83]: sns.set()
sinplot()
```



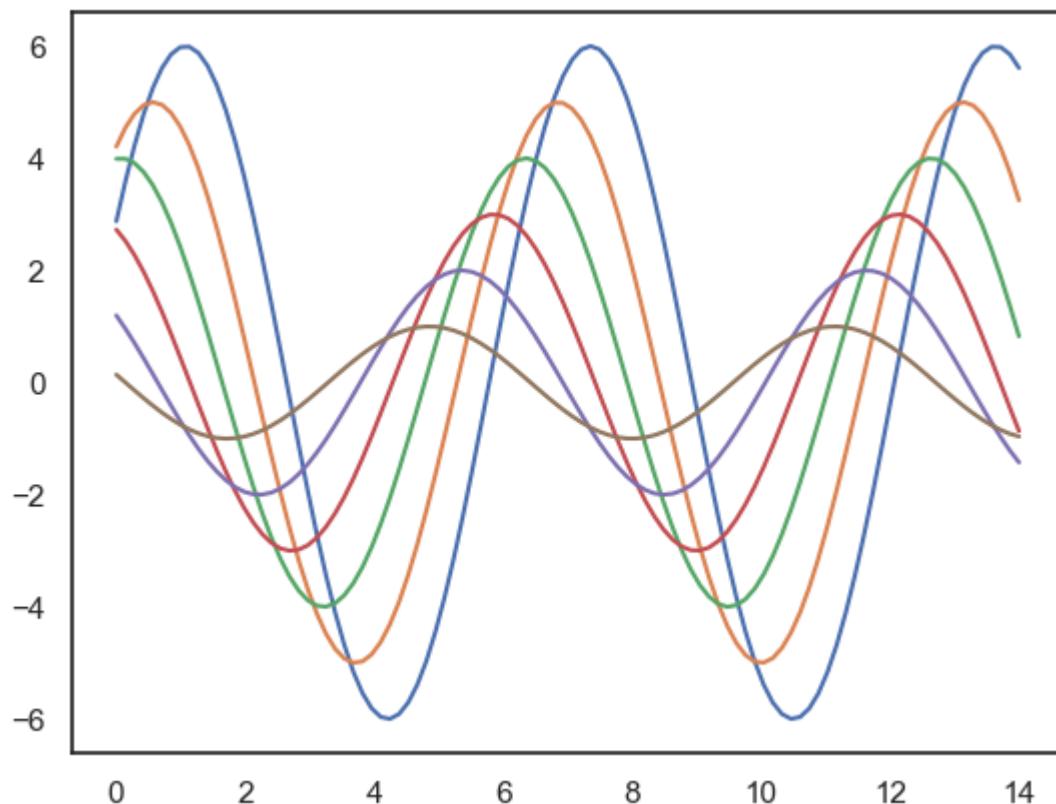
```
In [84]: sns.set_style("whitegrid")
sinplot()
```



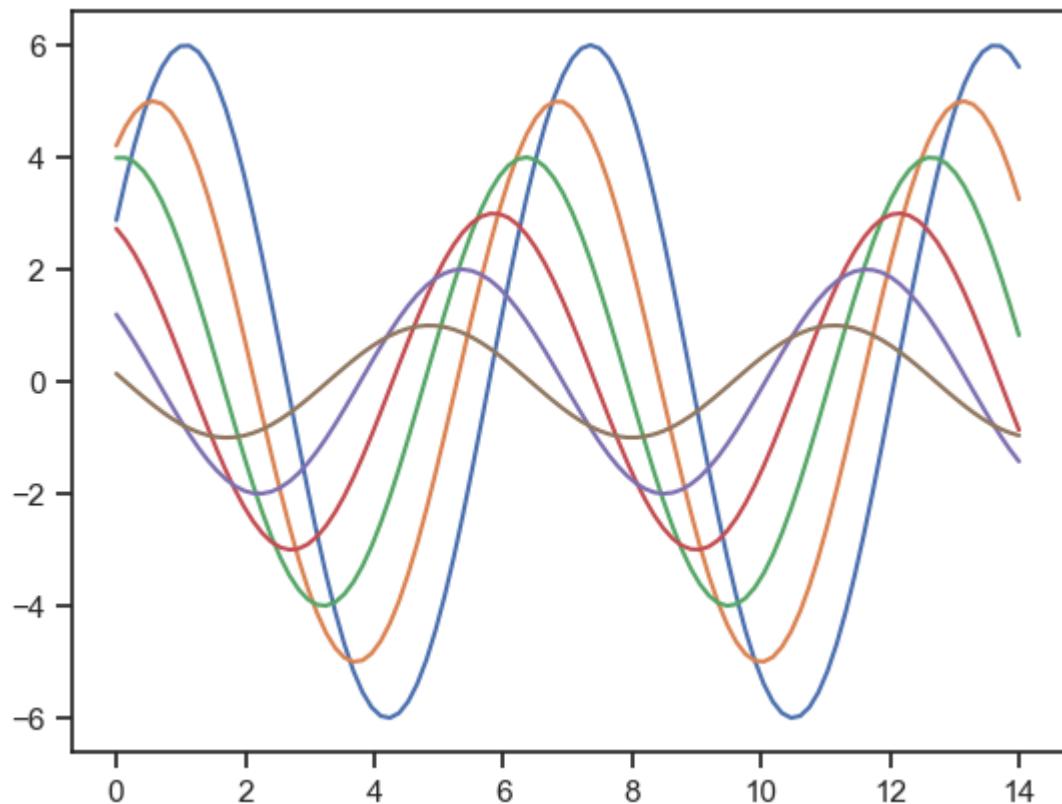
```
In [85]: sns.set_style("dark")
sinplot()
```



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



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



In []: