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

```
df = pd.read_csv("/content/CLEAN_FIFA23_official_data.csv")
```

```
df['Work Rate'].head(5)
```

```
0    High/ Medium
1      High/ High
2      High/ High
3      High/ High
4      High/ High
Name: Work Rate, dtype: object
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 17660 entries, 0 to 17659
Data columns (total 27 columns):
 #   Column                    Non-Null Count  Dtype
---  ------                    --------------  -----
 0   ID                        17660 non-null  int64
 1   Name                      17660 non-null  object
 2   Age                       17660 non-null  int64
 3   Nationality               17660 non-null  object
 4   Overall                   17660 non-null  int64
 5   Potential                 17660 non-null  int64
 6   Club                      17660 non-null  object
 7   Value(£)                  17660 non-null  int64
 8   Wage(£)                   17660 non-null  int64
 9   Special                   17660 non-null  int64
 10  Preferred Foot            17660 non-null  object
 11  International Reputation  17660 non-null  int64
 12  Weak Foot                 17660 non-null  int64
 13  Skill Moves               17660 non-null  int64
 14  Work Rate                 17660 non-null  object
 15  Body Type                 17622 non-null  object
 16  Real Face                 17660 non-null  object
 17  Position                  17660 non-null  object
 18  Joined                    17660 non-null  object
 19  Loaned From               694 non-null    object
 20  Contract Valid Until      17660 non-null  int64
 21  Height(cm.)               17660 non-null  int64
 22  Weight(lbs.)              17660 non-null  float64
 23  Release Clause(£)         17660 non-null  int64
 24  Kit Number                17660 non-null  int64
 25  Best Overall Rating       17660 non-null  int64
 26  Year_Joined               17660 non-null  int64
dtypes: float64(1), int64(16), object(10)
memory usage: 3.6+ MB
```

```
df2 =df.select_dtypes(include = ['int64'])
```

```
df2.drop(columns =["ID"], inplace = True)
```

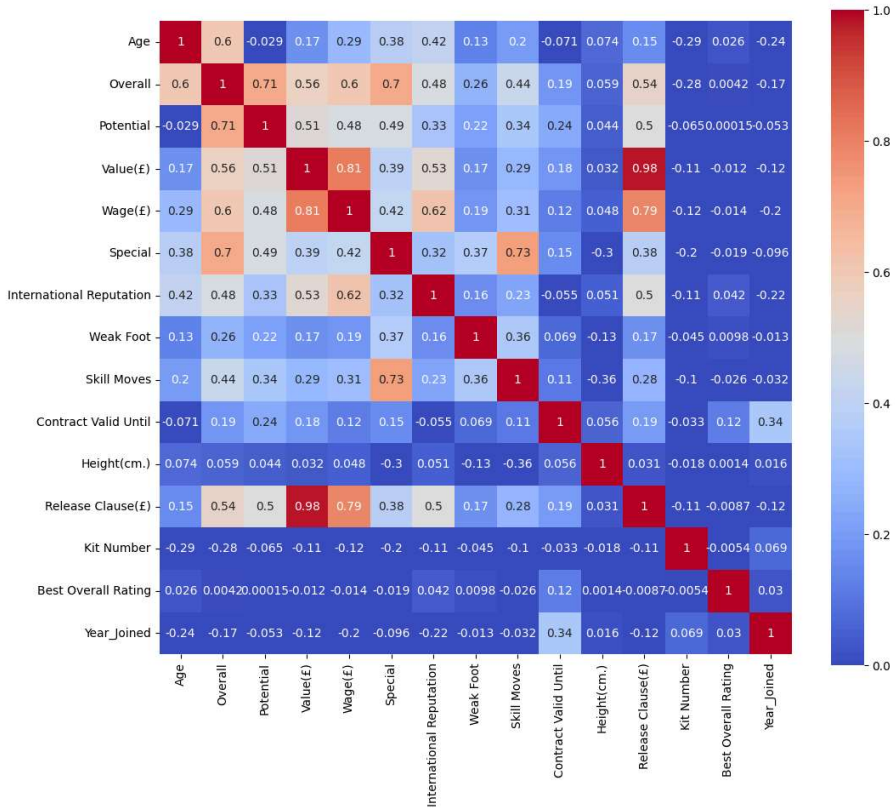
```
df2.head(5)
```

	Age	Overall	Potential	Value(£)	Wage(£)	Special	International Reputation	Weak Foot	Skill Moves	Con
0	27	87	88	91000000	115000	2312	4	4	3	
1	27	86	87	78500000	190000	2305	3	3	4	
2	30	85	85	46500000	46000	2303	2	3	3	
3	31	91	91	107500000	350000	2303	4	5	4	

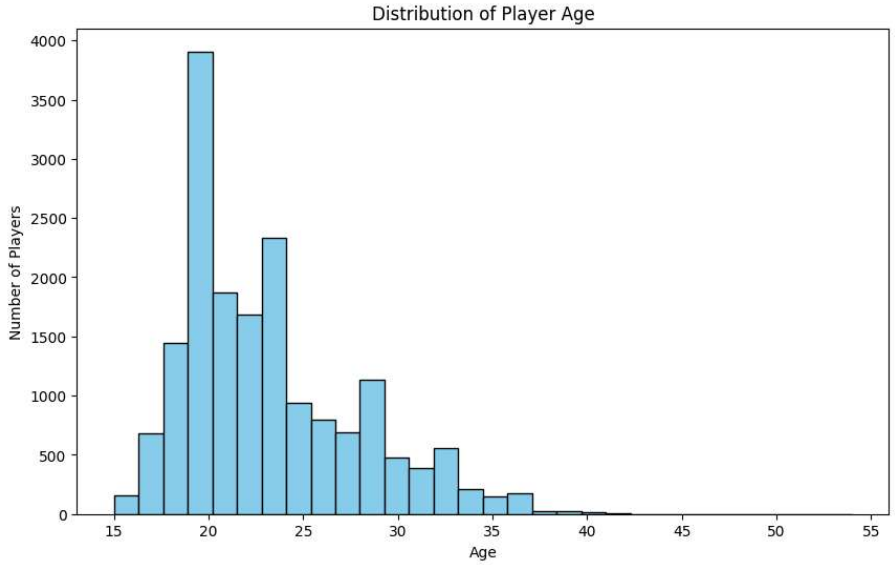
```
corl = df2.corr()
corl
```

	Age	Overall	Potential	Value(£)	Wage(£)	Special	International Reputation
Age	1.000000	0.595690	-0.029151	0.166612	0.294607	0.381506	0.419898
Overall	0.595690	1.000000	0.706595	0.564235	0.599573	0.697941	0.483563
Potential	-0.029151	0.706595	1.000000	0.511101	0.479336	0.487634	0.332091
Value(£)	0.166612	0.564235	0.511101	1.000000	0.810629	0.394187	0.528924
Wage(£)	0.294607	0.599573	0.479336	0.810629	1.000000	0.424920	0.615634
Special	0.381506	0.697941	0.487634	0.394187	0.424920	1.000000	0.318578
International Reputation	0.419898	0.483563	0.332091	0.528924	0.615634	0.318578	1.000000
Weak Foot	0.132360	0.264347	0.218216	0.172899	0.190267	0.368170	0.160210
Skill Moves	0.195672	0.440420	0.336911	0.288421	0.306049	0.734280	0.225076
Contract Valid Until	-0.070686	0.186154	0.244666	0.184041	0.123437	0.152663	-0.054736
Height(cm.)	0.074478	0.059272	0.043926	0.032263	0.048054	-0.300539	0.050617
Release Clause(£)	0.152677	0.543369	0.500089	0.983038	0.790456	0.378223	0.499573
Kit Number	-0.290169	-0.275590	-0.064840	-0.112904	-0.119345	-0.200639	-0.109758
Best Overall Rating	0.026110	0.004176	0.000145	-0.011983	-0.013717	-0.018702	0.041564
Year_Joined	-0.241021	-0.172613	-0.052917	-0.117560	-0.203457	-0.096203	-0.215710

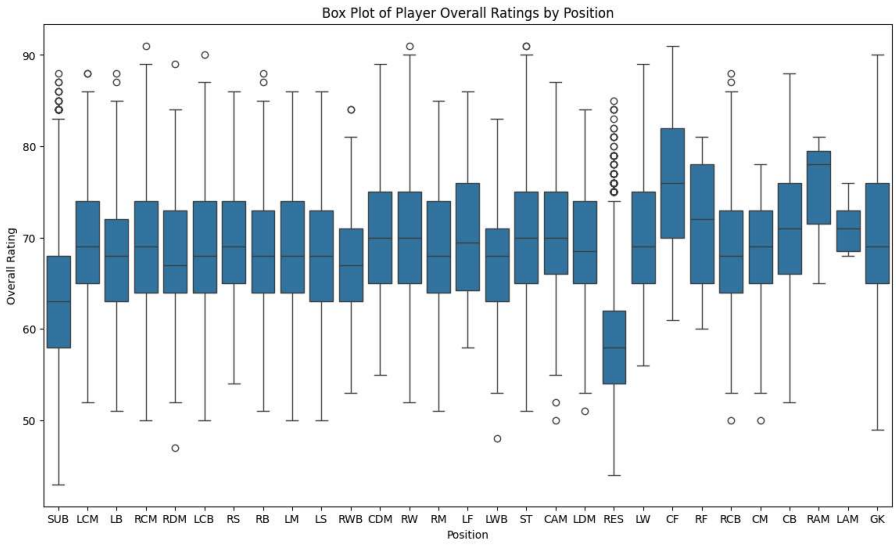
```
plt.figure(figsize = (12,10))
sns.heatmap(corl, annot=True, cmap='coolwarm', vmin=0.0, square = True)
plt.show()
```



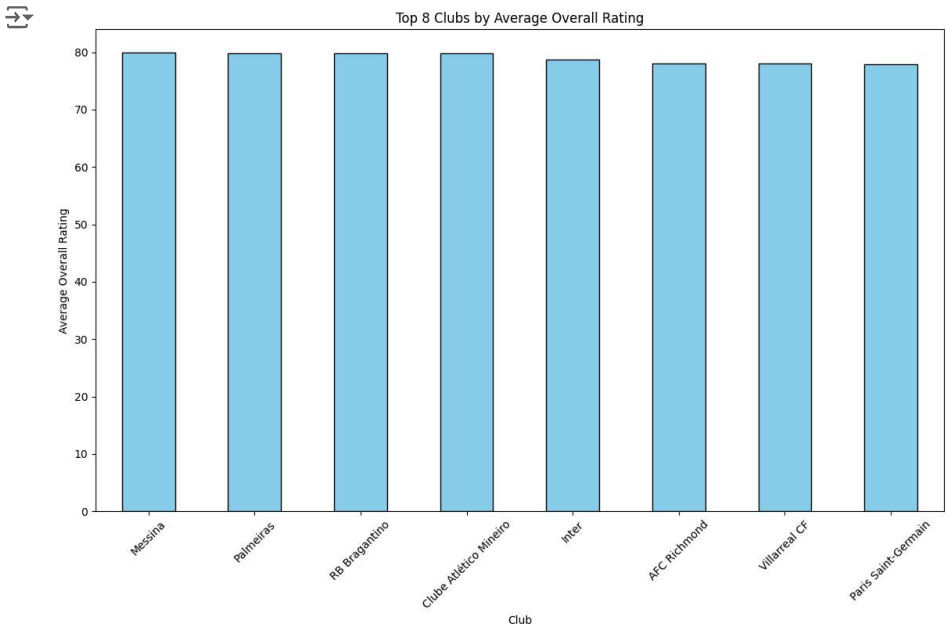

```
# Histogram of Player & Age
plt.figure(figsize=(10, 6))
plt.hist(df['Age'], bins=30, color='skyblue', edgecolor='black')
plt.title('Distribution of Player Age')
plt.xlabel('Age')
plt.ylabel('Number of Players')
plt.show()
```



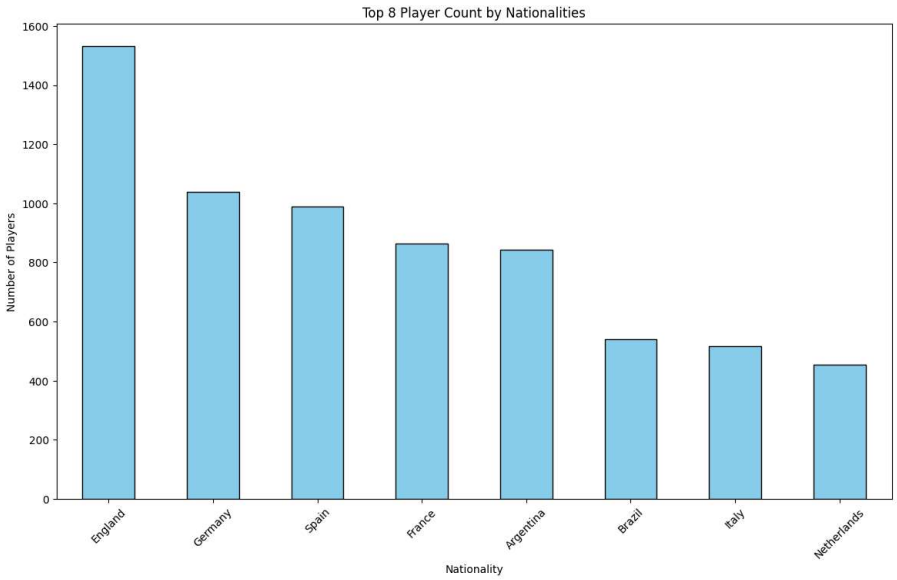

```
# Box Plot of Player Overall Ratings by Position
plt.figure(figsize=(14, 8))
sns.boxplot(x='Position', y='Overall', data=df)
plt.title('Box Plot of Player Overall Ratings by Position')
plt.xlabel('Position')
plt.ylabel('Overall Rating')
plt.show()
```



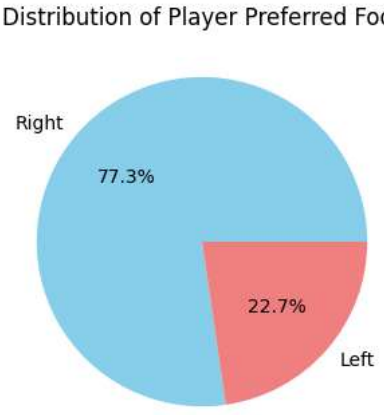
```
# Bar Plot of Average Overall Rating by Club
avgr= df.groupby('Club')['Overall'].mean().sort_values(ascending=False).head(8)
plt.figure(figsize=(14, 8))
avgr.plot(kind='bar', color='skyblue', edgecolor = 'black')
plt.title('Top 8 Clubs by Average Overall Rating')
plt.xlabel('Club')
plt.ylabel('Average Overall Rating')
plt.xticks(rotation=45)
plt.show()
```




```
# Bar Plot of Player Nationalities
top_nationalities = df['Nationality'].value_counts().head(8)
plt.figure(figsize=(14, 8))
top_nationalities.plot(kind='bar', color='skyblue', edgecolor = 'black')
plt.title('Top 8 Player Count by Nationalities')
plt.xlabel('Nationality')
plt.ylabel('Number of Players')
plt.xticks(rotation=45)
plt.show()
```




```
# Pie Chart of Player Preferred Foot
preferred_foot_counts = df['Preferred Foot'].value_counts()
plt.figure(figsize=(4, 4))
plt.pie(preferred_foot_counts, labels=preferred_foot_counts.index, autopct='%1.1f%%' ,
        colors=['skyblue', 'lightcoral'])
plt.title('Distribution of Player Preferred Foot')
plt.show()
```



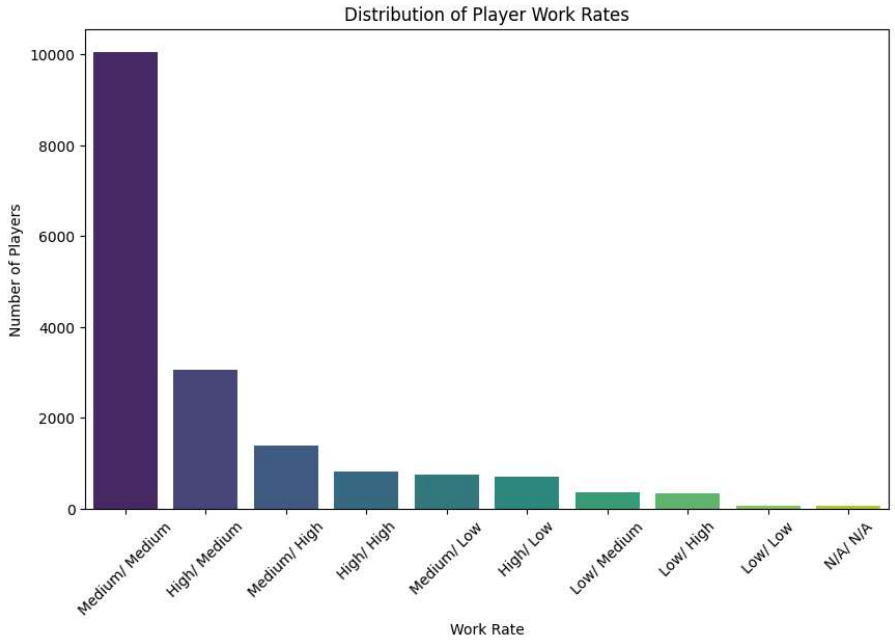

```
# Bar Plot of Player Work Rates
plt.figure(figsize=(10, 6))
sns.countplot(x='Work Rate', data= df, order= df['Work Rate'].value_counts().index, palette='viridis')
plt.title('Distribution of Player Work Rates')
plt.xlabel('Work Rate')
plt.ylabel('Number of Players')
plt.xticks(rotation=45)
```

```
plt.show()
```

```
<ipython-input-75-7451ab8fdfe8>:3: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0.

  sns.countplot(x='Work Rate', data= df, order= df['Work Rate'].value_counts().index, pa
```




```
# Distribution of Player Ratings
plt.figure(figsize=(10, 6))
sns.histplot(df['Overall'], kde=True, color='skyblue', bins=20)
```