BLM442 Keşif aktivitesi-4: pandas & gorsellestirme

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Kullanılan dataset adı: FIFA 19 complete player dataset

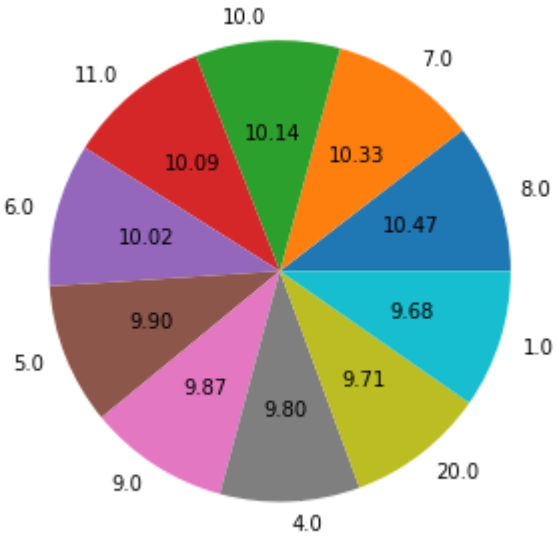
Dataset url: https://www.kaggle.com/karangadiya/fifa19 (https://www.kaggle.com/karangadiya/fifa19)

In [305]:
```
import matplotlib.pyplot as plt
import pandas as pd
import numpy as np
import seaborn as sns
from bokeh.plotting import figure, output_file, show

data = pd.read_csv('data.csv')
```

Problem 1: En çok tercih edilen 10 forma numarası ve sayıları.

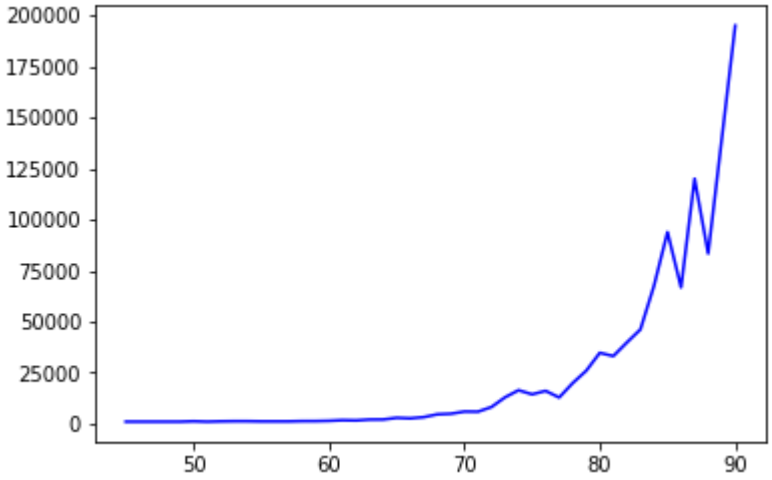
In [141]:
```
p1 = data.groupby('Jersey_Number').ID.count().sort_values(ascending=False).hea
d(10).to_frame()
df = p1.reset_index()
x=df['Jersey_Number'].tolist()
y=df['ID'].tolist()
print(x)
print(y)
x = np.array(x,dtype=str)
fig1 = plt.figure('1. Problem')
ax = fig1.add_axes([0,0,1,1])
ax.pie(y, labels = x,autopct='%.2f')
plt.show()
```

```
[8.0, 7.0, 10.0, 11.0, 6.0, 5.0, 9.0, 4.0, 20.0, 1.0]
[612, 604, 593, 590, 586, 579, 577, 573, 568, 566]
```



Problem 2: Kalecilere Özel GKDiving Özelliğinin Kaleci Maaşına Etkisi

In [136]:
```
p2 = data[(data.Position == 'GK')].groupby('GKDiving').Number_Wage.mean().to_f
rame().reset_index()
fig2 = plt.figure()
subplot2 = fig2.add_subplot(1,1,1)
subplot2.plot(p2['GKDiving'].tolist(),p2['Number_Wage'].tolist() , color='b',
label='Y')
plt.show()
```



Problem 3: Forvet Oyuncularının Pozisyon ve Tercih Edilen Ayak Dağılımları

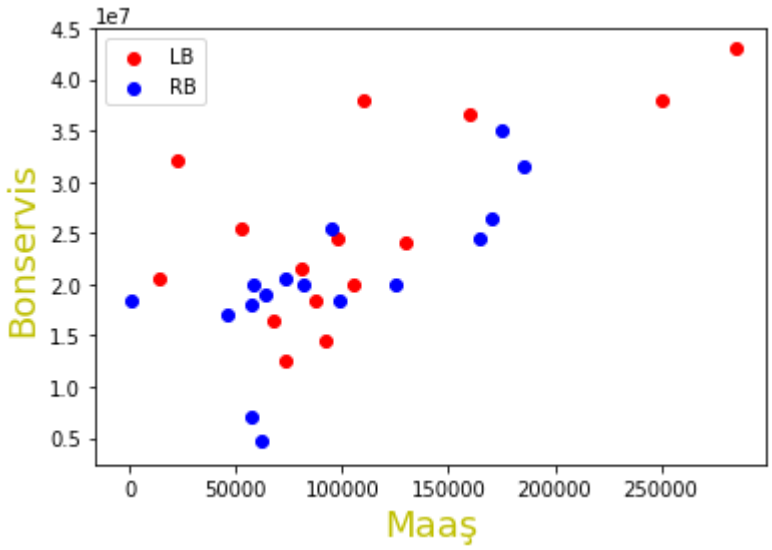
In [232]:
```
p3 = data[(data.Position == 'CDM') | (data.Position == 'CM') | (data.Position
== 'CAM')].groupby(['Position','Preferred_Foot']).ID.count().to_frame().reset_
index()

l1 = p3[(p3.Position == 'CAM')].ID.tolist()
l2 = p3[(p3.Position == 'CDM')].ID.tolist()
l3 = p3[(p3.Position == 'CM')].ID.tolist()

fig3 = plt.figure()
ax3 = fig3.subplots()

size = 0.33
vals = np.array([l1, l2, l3])

cmap = plt.get_cmap("tab20c")
outer_colors = cmap(np.arange(4)*4)
inner_colors = cmap(np.array([1, 2, 5, 6, 9, 10]))

ax3.pie(vals.sum(axis=1), radius=1, colors=outer_colors,
       wedgeprops=dict(width=size, edgecolor='w'))

ax3.pie(vals.flatten(), radius=1-size, colors=inner_colors,
       wedgeprops=dict(width=size, edgecolor='w'))

ax.set(aspect="equal", title='Pie plot with `ax.pie`')
plt.show()
```

Problem 4: Kalecilere Özel GKHandling Özelliğinin Kaleci Değerine Etkisi (Bokeh dosyası yeni sekmede açılır.)

In [303]:
```
p4 = data[(data.Position == 'GK')].groupby('GKHandling').Number_Value.mean().to_frame().reset_index()
x = p4['GKHandling'].tolist()
y = p4['Number_Value'].tolist()

p = figure(title="Problem3", x_axis_label='GKHandling', y_axis_label='Number_Value')

p.line(x=x, y=y, line_width=4, line_color="orange", line_dash="4 4")

show(p)
```

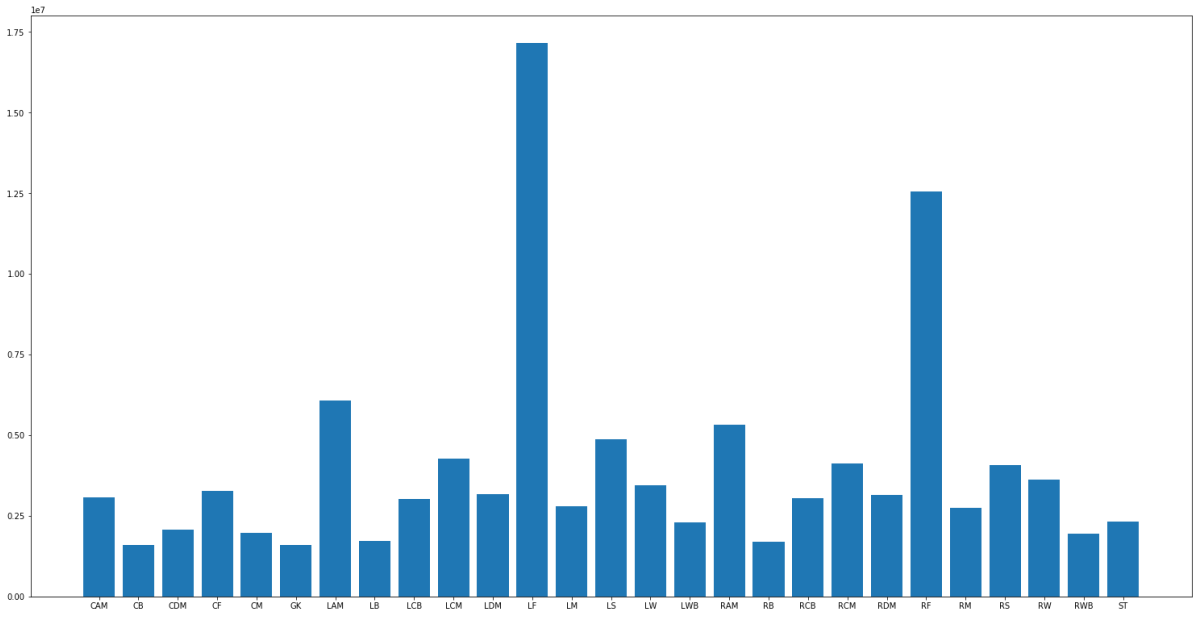
Problem 5: 80 güç üstü Sağ ve Sol bek Oyunularının Değer Dağılımı

In [270]:
```
p41 = data[(data.Overall > 80) & (data.Position == 'LB')]
p42 = data[(data.Overall > 80) & (data.Position == 'RB')]
x1= p41['Number_Wage']
y1= p41['Number_Value']
x2= p42['Number_Wage']
y2= p42['Number_Value']
fig5 = plt.figure()
subplot5 = fig5.add_subplot(1,1,1)
subplot5.scatter(x=x1, y=y1, color='r', label='LB')
subplot5.scatter(x=x2, y=y2, color='b', label='RB')
subplot5.legend()
plt.xlabel('Maaş',color='y',size=18)
plt.ylabel('Bonservis',color='y',size=18)
plt.show()
```



Problem 6: Pozisyonlara göre Bonservis Değeri Ortalamaları

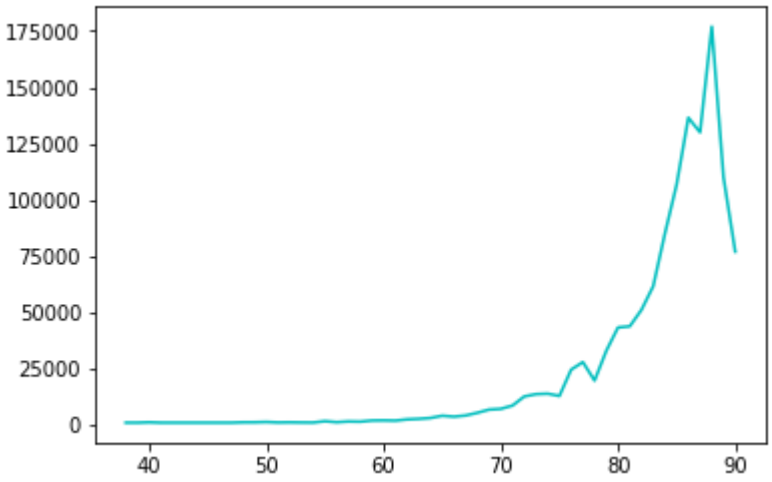
In [289]:
```
p6 = data.groupby('Position').Number_Value.mean().to_frame().reset_index()
x = p6['Position']
y = p6['Number_Value']
fig6 = plt.figure(figsize=(20,10))
ax6 = fig6.add_axes([0,0,1,1])
ax6.bar(x,y)
plt.show()
```



Problem 7: Kalecilere Özel GKPositioning Özelliğinin Kaleci Maaşına Etkisi

In [117]:
```
p7 = data[(data.Position == 'GK')].groupby('GKPositioning').Number_Wage.mean()
.to_frame().reset_index()
fig7 = plt.figure()
subplot7 = fig7.add_subplot(1,1,1)
subplot7.plot(p7['GKPositioning'].tolist(),p7['Number_Wage'].tolist() , color=
'c', label='Y')
```

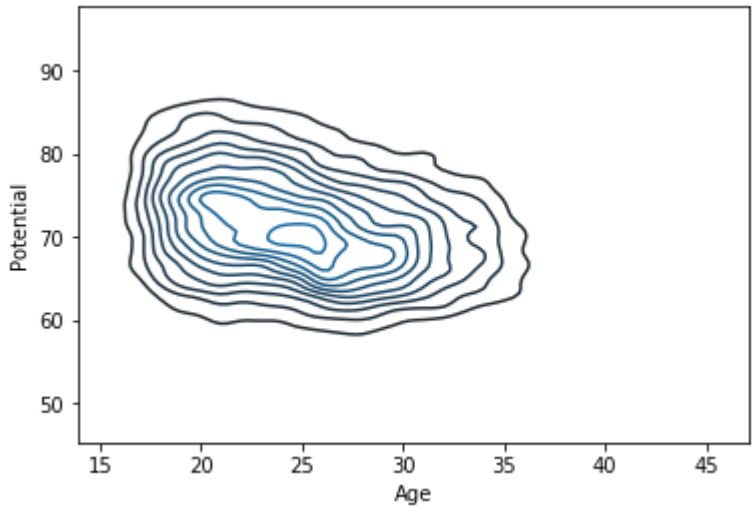
Out[117]:
```
[<matplotlib.lines.Line2D at 0x20c1696deb8>]
```



Problem 8: Oyuncuların Yaş Ve Potensiyel Yoğunluk Haritası

In [296]:
```
sns.kdeplot(data['Age'], data['Potential'])
```

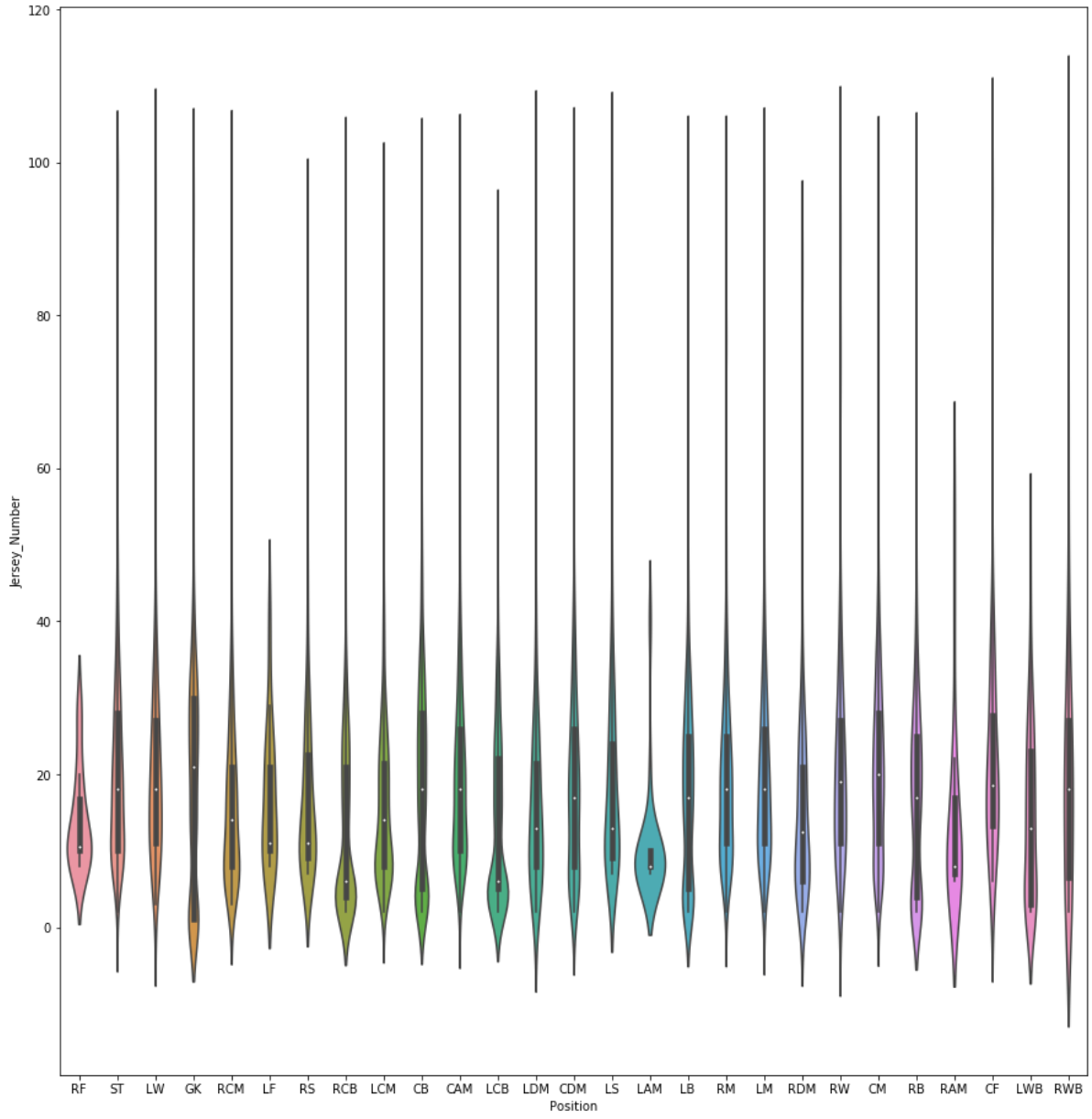
Out[296]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x20c1f6277b8>
```



Problem 9: Pozisyonların Forma Numarası Yoğunluk Dağılımları

In [304]:
```
plt.figure(figsize=(15,16))
sns.violinplot(x='Position', y='Jersey_Number', data=data)
```

Out[304]: <matplotlib.axes._subplots.AxesSubplot at 0x20c1f989470>



Problem 10: Kalecilere Özel GKReflexes Özelliğinin Kaleci Değerine Etkisi

In [119]:
```
p10 = data[(data.Position == 'GK')].groupby('GKReflexes').Number_Value.mean().
to_frame().reset_index()
fig10 = plt.figure()
subplot10 = fig10.add_subplot(1,1,1)
subplot10.plot(p10['GKReflexes'].tolist(),p10['Number_Value'].tolist() , color
='m', label='Y')
```

Out[119]:
```
[<matplotlib.lines.Line2D at 0x20c18016dd8>]
```