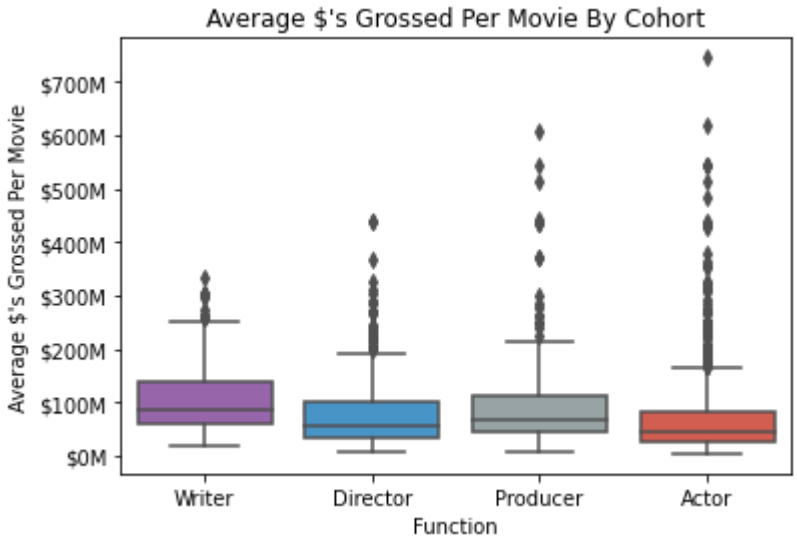
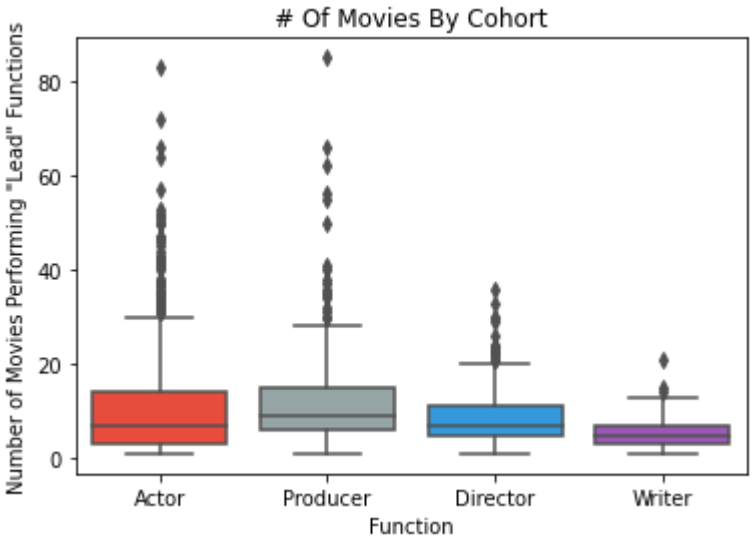
In [9]:
```
import numpy as np #linear algebra
import pandas as pd #data processing
# libraries
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
# Importing into dataframe

df_Top_10_By_GenereWithTopPlayers = pd.read_excel("Top_10_By_Genre_Top_Playe
df_Stars = pd.read_excel ('df_StarActors_NoDups.xlsx', sheet_name='Export')
df_Bankability = pd.read_excel ('./Prj_Data/ImdbScrapingData/TheNumbers/outp
```

In [ ]:
```
#_____BOX PLOTS TO CREATE CRITERIA FOR "A PLAYERS"_____
```

In [13]:
```
# Show box plot of average dollars generated per movie for entire population

df_Stars_short = df_Stars[["Contribution", "Movies", "Average"]]
# fig, ax = plt.subplots(figsize=(11, 8));
fig, ax = plt.subplots();
flatui = ["#9b59b6", "#3498db", "#95a5a6", "#e74c3c", "#34495e", "#2ecc71"]
sns.set_palette(sns.color_palette(flatui))


g = sns.boxplot(x="Contribution", y="Average", data=df_Stars_short, order=["
ylabels = ['${:,.0f}'.format(y) + 'M' for y in g.get_yticks()/1000000]
g.set_yticklabels(ylabels);

# g.legend().set_title('Average $ Generated Per Movie ($M)');
plt.ylabel("Average $'s Grossed Per Movie");
plt.xlabel("Function");
plt.title("Average $'s Grossed Per Movie By Cohort");

# print(ax.artists[1].get_facecolor)


plt.savefig("BoxPlot-Average$.pdf",transparent=True);
```



In [4]:
```
df_Stars_short = df_Stars[["Contribution", "Movies", "Average"]]
# fig, ax = plt.subplots(figsize=(11, 8));
fig, ax = plt.subplots();

g = sns.boxplot(x=df_Stars["Contribution"], y="Movies", data=df_Stars_short,

plt.ylabel('Number of Movies Performing "Lead" Functions');
plt.xlabel("Function");
plt.title("# Of Movies By Cohort");

Actor = ax.artists[0]
Producer = ax.artists[1]
Dir = ax.artists[2]
Writer = ax.artists[3]

# Change the appearance of that box

Actor.set_facecolor("#e74c3c")
Producer.set_facecolor("#95a5a6")
Dir.set_facecolor("#3498db")
Writer.set_facecolor("#9b59b6")


plt.savefig("BoxPlot-#OfMovies.png",transparent=True);


```

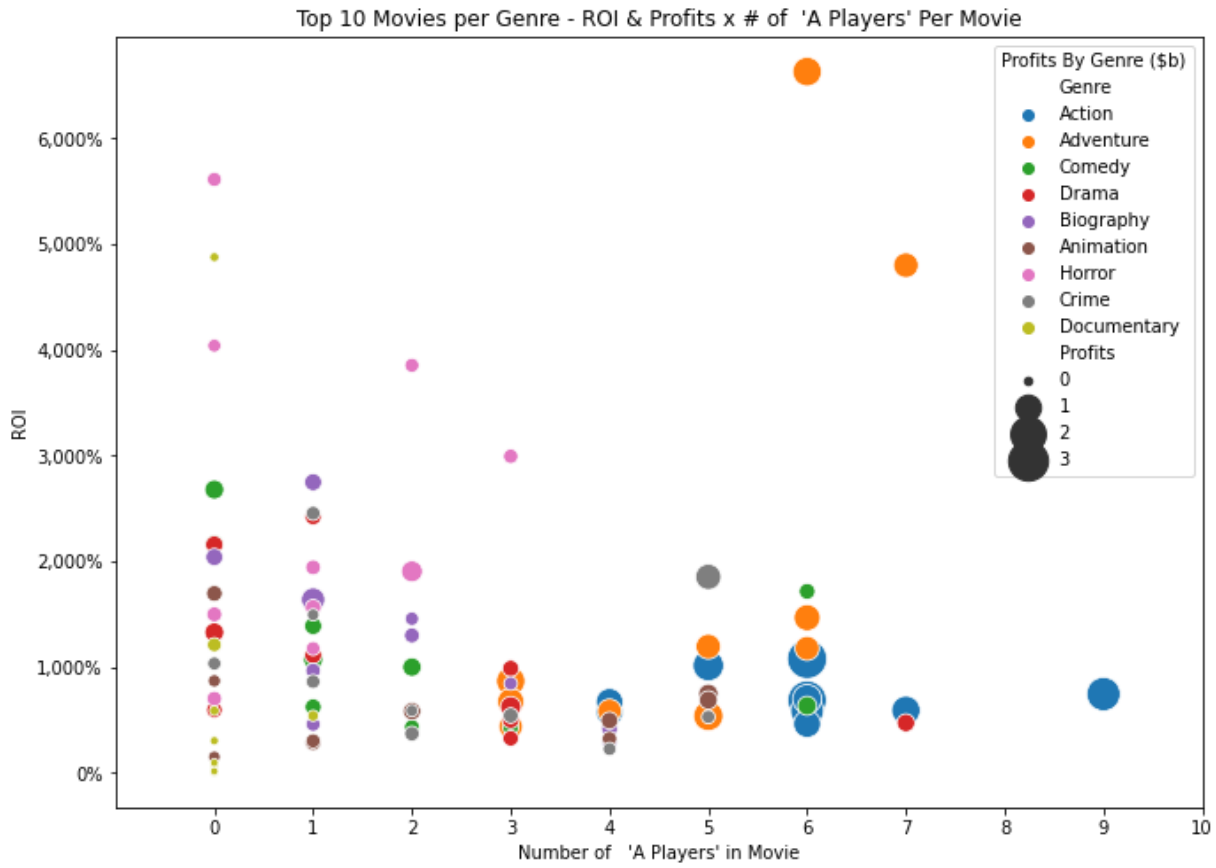


In [ ]:
```
#_____BOX PLOTS END_____
```

In [ ]:
```
#_____SCATTER PLAT SHOWING A PLAYERS BY TOP MOST PROFITAB
```

In [11]:

```
fig, ax = plt.subplots(figsize=(11, 8));
g = sns.scatterplot(ax=ax,y="ROIPercent", x="Total",hue="Genre", size="Profi
g.set(xlim = (-1,10), xticks=[0,1,2,3,4,5,6,7,8,9,10],);


plt.ylabel("ROI");
plt.xlabel("Number of   'A Players' in Movie");
plt.title("Top 10 Movies per Genre - ROI & Profits x # of  'A Players' Per M

# ylabels = ['{:,.0f}'.format(y) + 'B' for y in g.get_yticks()/1000]
# g.set_yticklabels(ylabels)
ylabels = ['{:,.0f}'.format(y) + '%' for y in g.get_yticks()]
g.set_yticklabels(ylabels);

g.legend().set_title('Profits By Genre ($b)');
plt.ylabel("ROI");
plt.xlabel("Number of   'A Players' in Movie");
plt.title("Top 10 Movies per Genre - ROI & Profits x # of  'A Players' Per M


plt.savefig("ProfitsByPlayers.png",transparent=True);
```

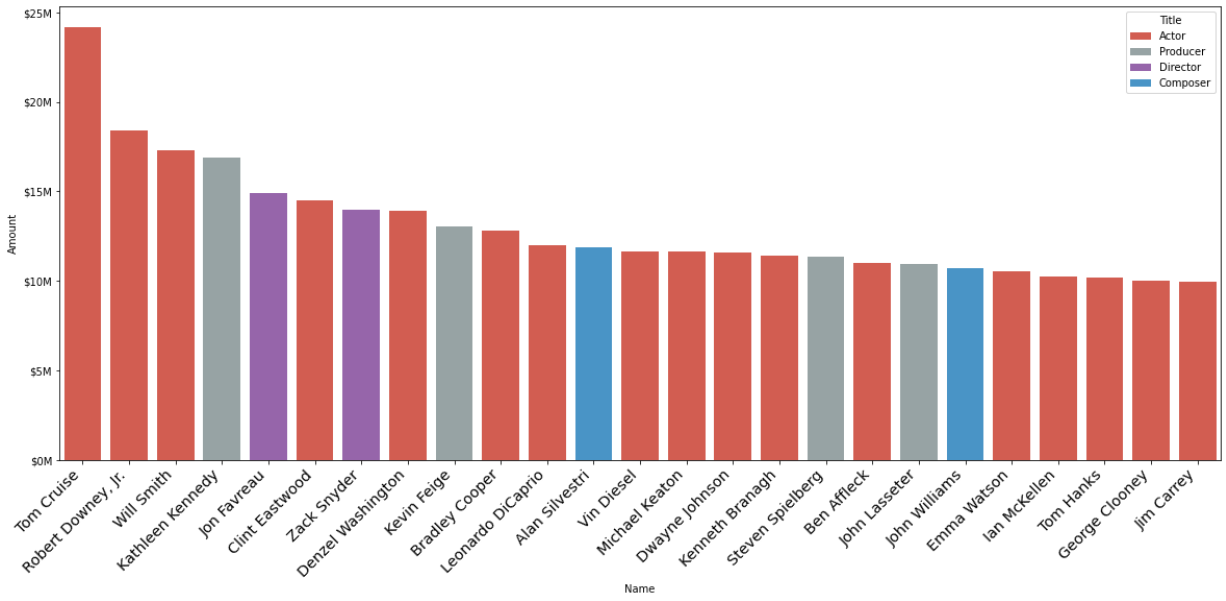


In [4]:
```
df_Top_10_By_GenereWithTopPlayers.info()
```

...

In [ ]:
```
#_____________________BARH CHART SHOWING BANKABILITYA_____________________
```

In [14]:
```
fig, ax = plt.subplots(figsize=(20, 8));
df_Bankability_Short = df_Bankability.head(25);

g = sns.barplot(ax=ax,y="Amount", x="Name", hue="Title", data=df_Bankability
                palette=["#e74c3c", "#95a5a6","#9b59b6", "#3498db", "#34495e

g.set_xticklabels(g.get_xticklabels(), rotation=45, horizontalalignment='rig
    fontsize='x-large');

ylabels = ['${:,.0f}'.format(y) + 'M' for y in g.get_yticks()/1000000]
g.set_yticklabels(ylabels);

```



In [ ]:
```

```

In [ ]:
```
#_____________________KEEP JUST IN CASE_____________________
```

In [51]:
```
#Find Stats for # of movies
test = df_Stars.groupby(["Contribution"])["Movies"]
test.describe().style.format('{0:,.0f}')

```

Out[51]:

Contribution	count	mean	std	min	25%	50%	75%	max
Actor	1,301	10	10	1	3	7	14	83
Director	350	9	6	1	5	7	11	36
Producer	361	12	10	1	6	9	15	85
Writer	260	6	3	1	3	5	7	21

In [54]:
```
#Find Stats for Average dollars gerenrate per movie
test = df_Stars.groupby(["Contribution"])["Average"]
test.describe().style.format('${0:,.0f}')
```

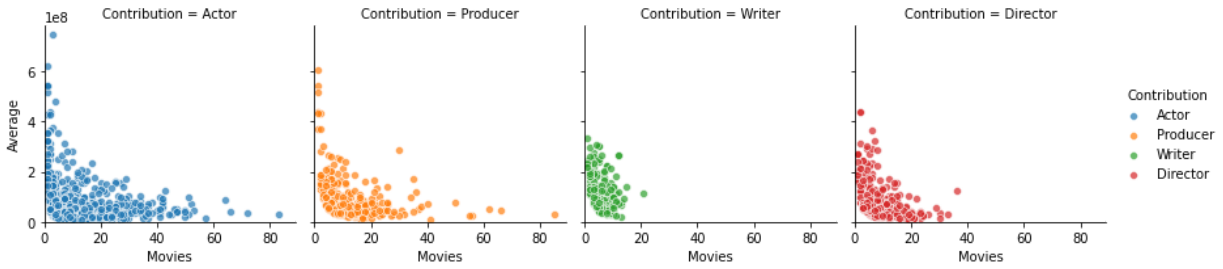
Out[54]:

Contribution	count	mean	std	min	25%	50%	75%
Actor	$1,000	$67,039,000	$71,017,000	$4,481,000	$25,944,000	$45,279,000	$82,266,000
Director	$0	$80,163,000	$68,771,000	$9,080,000	$34,443,000	$57,294,000	$100,228,000
Producer	$0	$92,337,000	$78,866,000	$9,491,000	$45,003,000	$68,135,000	$113,936,000
Writer	$0	$110,060,000	$65,247,000	$18,123,000	$61,564,000	$88,026,000	$138,117,000

In [2]:
```
# Separate data by function Just in case
# df_actors = df_Stars[df_Stars["Contribution"]=="Actor"][["Movies", "Averag
# df_dir = df_Stars[df_Stars["Contribution"]=="Director"][["Movies", "Averag
# df_ScrW = df_Stars[df_Stars["Contribution"]=="Writer"][["Movies", "Average
# df_prod = df_Stars[df_Stars["Contribution"]=="Producer"][["Movies", "Avera
```

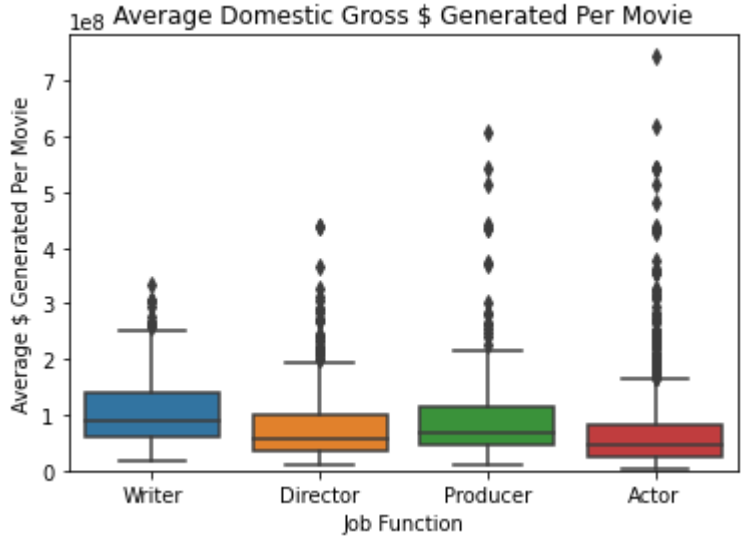
In [8]:
```
g = sns.FacetGrid(test, col="Contribution", hue="Contribution");
g.map(sns.scatterplot, "Movies", "Average", alpha=.7);
g.add_legend();

plt.ylim(0, None)
plt.xlim(0, None)
```

Out[8]: (0.0, 89.2)



In [114]:

```
# Show box plot of average dollars generated per movie for entire population
df_Stars_short = df_Stars[["Contribution", "Movies", "Average"]]
fig, ax = plt.subplots(figsize=(11, 8));

g = sns.scatterplot(ax=ax,y="ROIPercent", x="Total",hue="Genre", size="Profi
g.set(xlim = (-1,10), xticks=[0,1,2,3,4,5,6,7,8,9,10],);



boxplot = sns.boxplot(x="Contribution", y="Average", data=df_Stars_short, or
boxplot.set(xlabel ="Job Function", ylabel='Average $ Generated Per Movie',
plt.ylim(0, None);
# plt.xlim(0, None)
ylabels = ['${:,.0f}'.format(y) + 'M' for y in g.get_yticks()]
plt.savefig("BoxPlot-Average$.png",transparent=True);

```



In [44]:
```
1 sns.relplot(y="ROIPercent", x="Total", row="Genre", hue="Genre",size="Profit
2
3 plt.savefig('sample.pdf')
```

In [3]:
```
1 df_Stars.to_clipboard()
```

In [ ]:
```
1
```