Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Aim: Analysis of Shark Tank US Dataset

IDE: Microsoft Excel, Tableau , Spyder

Now Import Necessary Libraries for Analysis:-

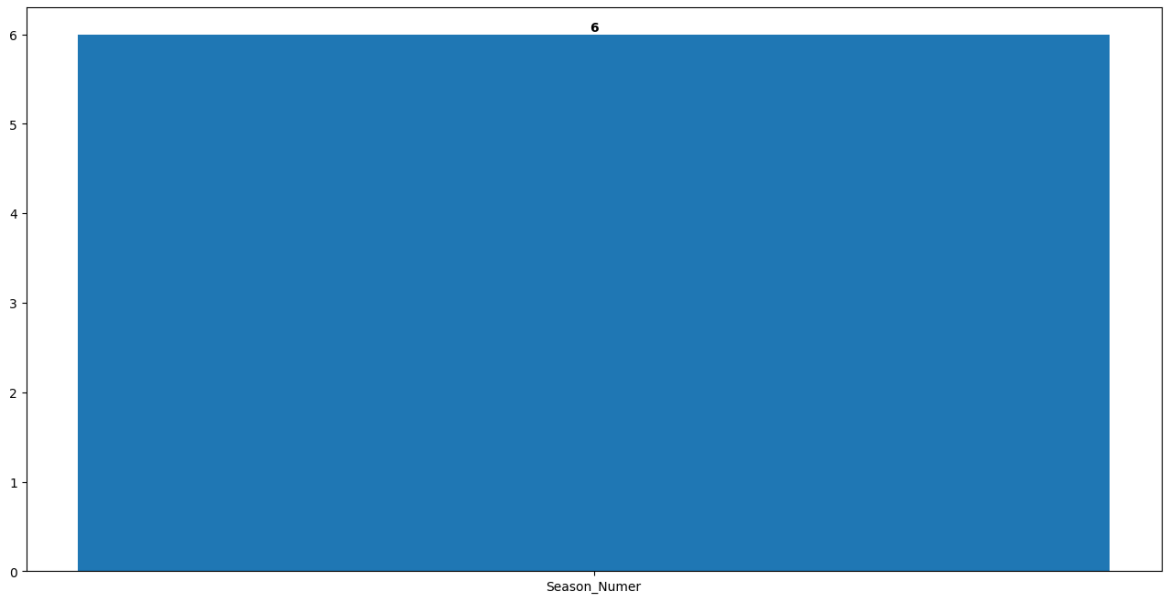
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
Dataset = pd.read_csv("./Shark Tank US dataset_Final.csv")
```

Questions:

1) **Which season is having the overall highest deal in terms of the amount?**
   Code:-

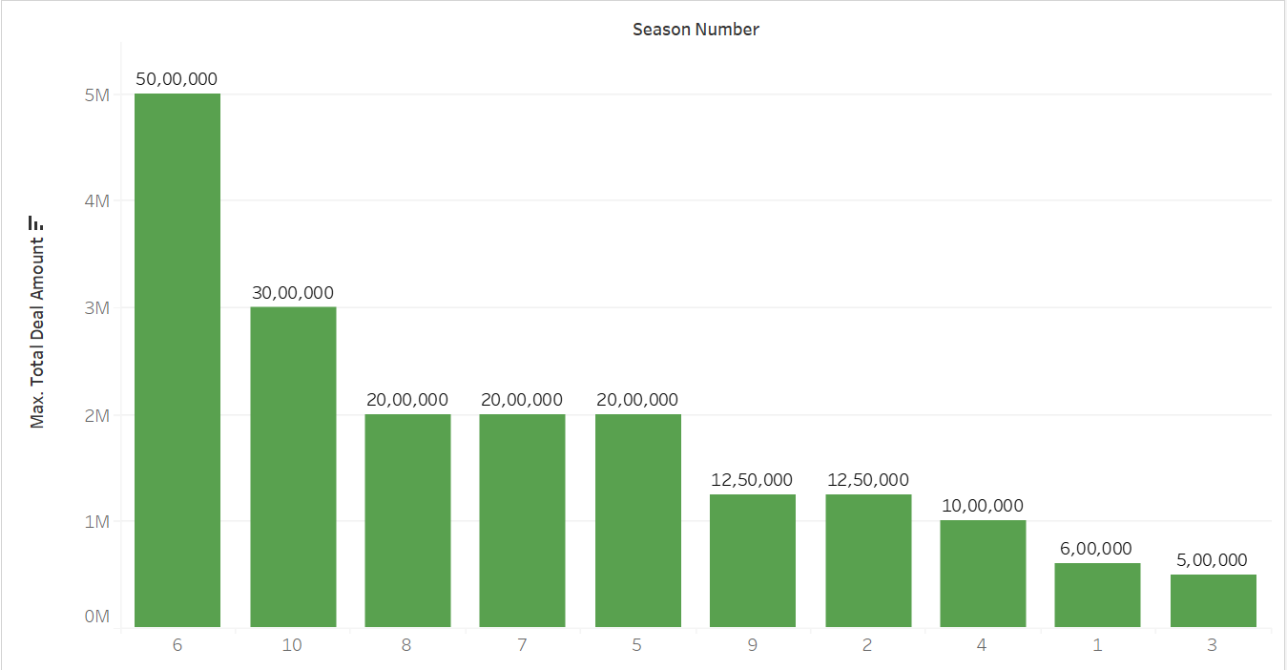
```
Season_With_Highest_Amount = Dataset.loc[Dataset["Total Deal Amount"].idxmax(), "Season Number"]
plt.figure(figsize = (16,8))
plt.bar(x = ["Season_Numer"] , height=[Season_With_Highest_Amount] , width=0.5)

for i, values in enumerate([Season_With_Highest_Amount]) :
    plt.text(i , values , str(values) , ha = 'center', va = 'bottom' , weight = 'bold')
plt.show()
```

Output:-



Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-



2) Enlist episodes for each season having the highest deal in terms of the amount.

Code:-

```
max_deal_episodes = Dataset.groupby("Season Number").apply(lambda x: x.loc[x["Total Deal Amount"].idxmax()])
colors = plt.cm.get_cmap("tab10", 10)
plt.figure(figsize=(12, 6))
bars = plt.bar(max_deal_episodes["Season Number"],max_deal_episodes["Episode
Number"],color=colors(range(10)),)
plt.title("Episode with Maximum Deal Amount by Season")
plt.xlabel("Season Number")
plt.ylabel("Episode Number with Maximum Deal Amount")

for bar in bars:
    yval = bar.get_height()
    plt.text(bar.get_x() + bar.get_width() / 2, yval, int(yval), ha="center", va="bottom")

plt.xticks(max_deal_episodes["Season Number"])
plt.tight_layout()
plt.show()
```

Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Output:-

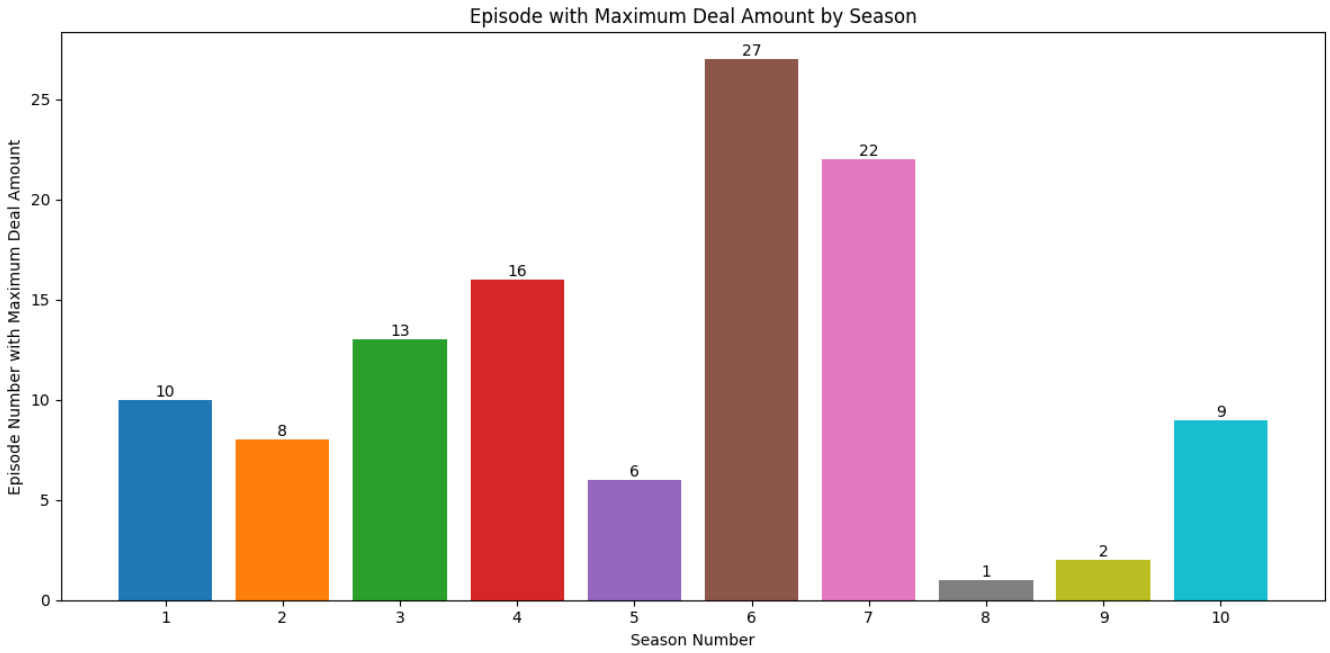
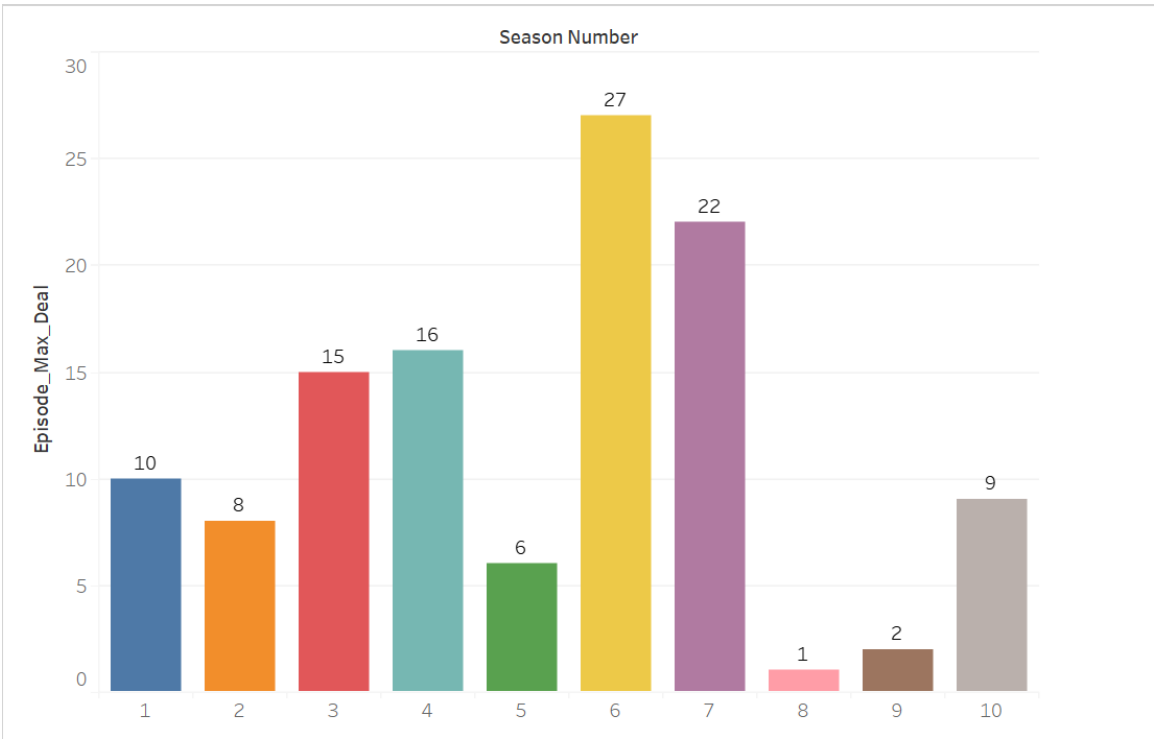


Tableau Plot:-

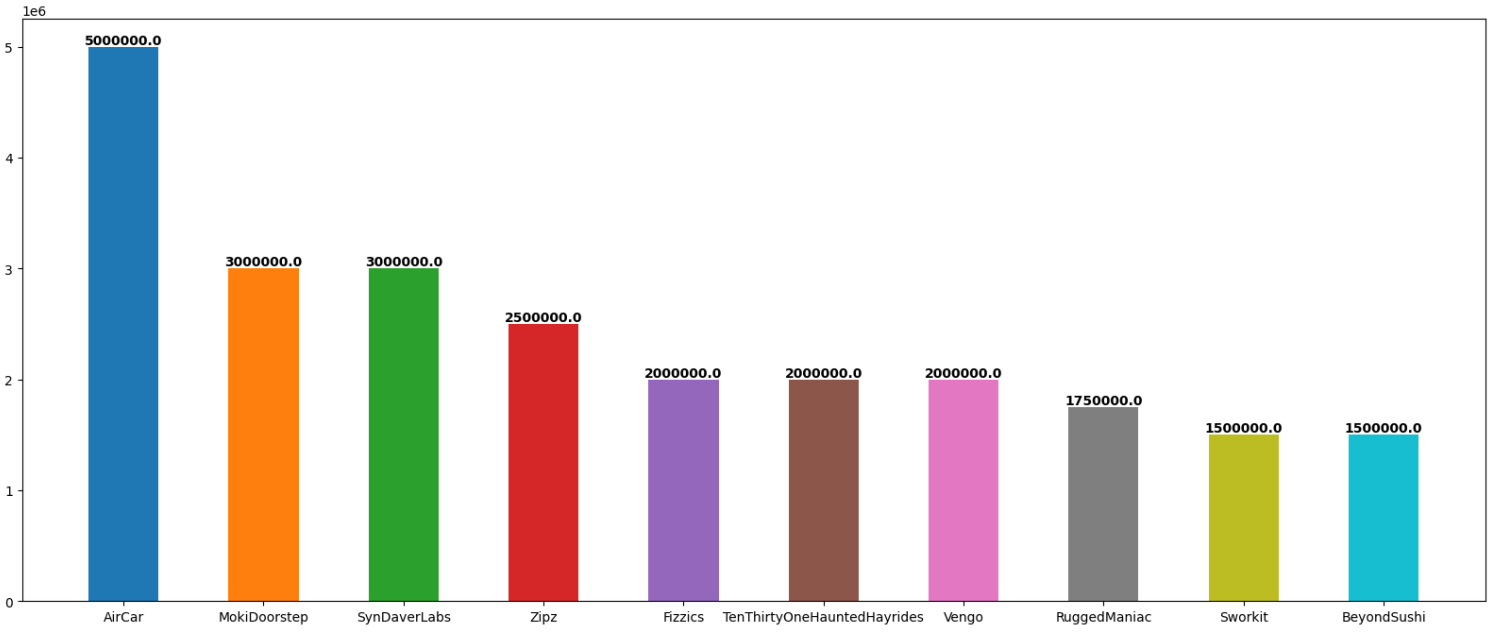


3) Which are the top 10 deals in the shark tank?

Code:-

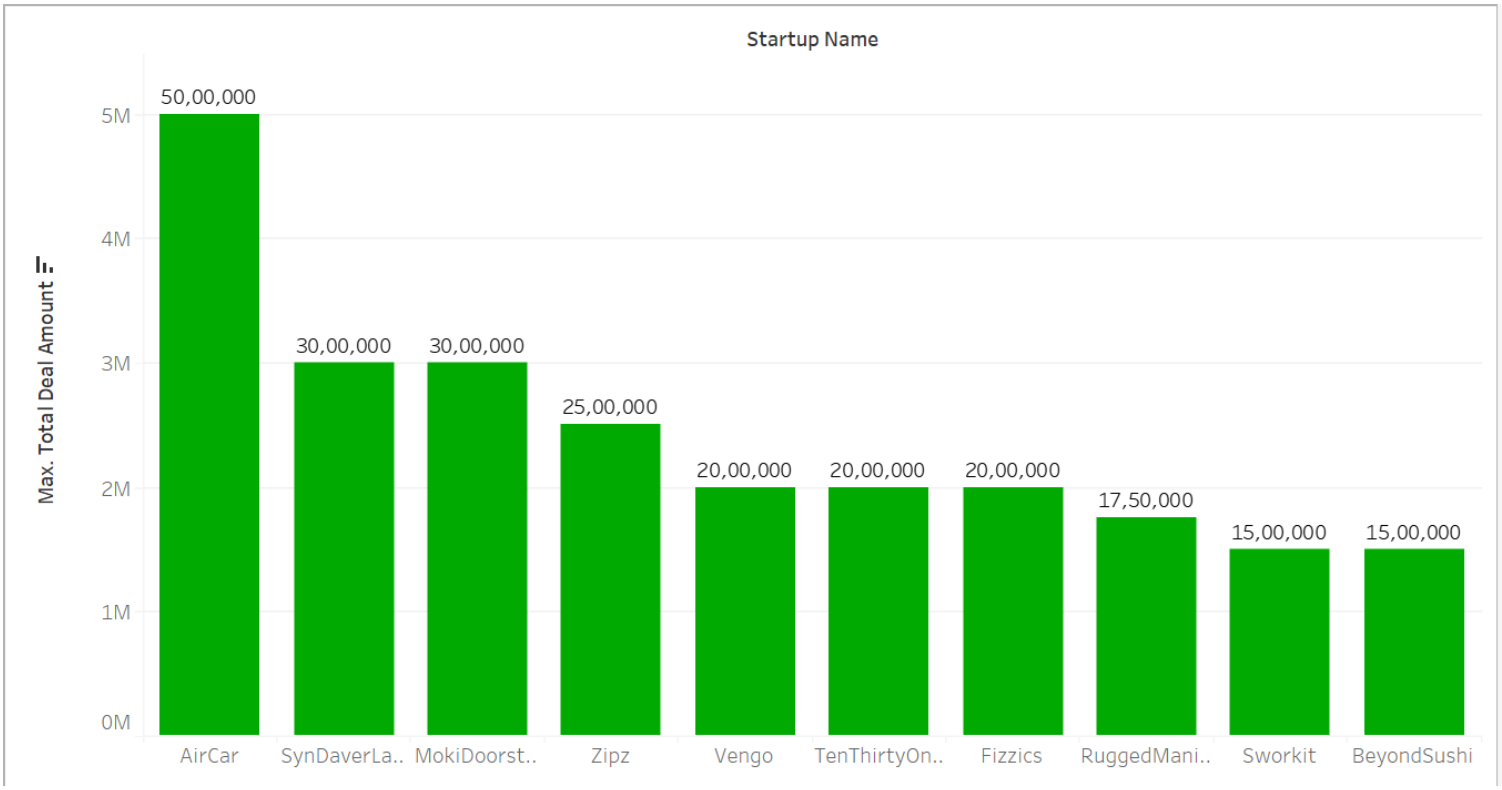
```
Sorted_Deal = Dataset.sort_values(by="Total Deal Amount" , ascending=False)[:10]
Top_10_Deal = pd.DataFrame({"Startup Name" : Sorted_Deal['Startup Name'] , 'Total Deal Amount' :
Sorted_Deal['Total Deal Amount']})
print(Top_10_Deal)
colors = plt.cm.get_cmap("tab10", 10)
plt.figure(figsize=(20,8))
plt.bar(x = Top_10_Deal['Startup Name'] , height=Top_10_Deal['Total Deal Amount'] , width=0.5 , color =
colors(range(10)))
for i,value in enumerate(Top_10_Deal["Total Deal Amount"]) :
    plt.text(i , value , str(value) , ha = "center" , va = "bottom" , weight = "bold")
plt.show()
```

Output:-



Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-



4) Top-3 Industries with the highest deals in the shark tank?

Code:-

```
Industry_Count = pd.DataFrame(Dataset.groupby("Industry")["Total Deal Amount"].max().rename("Total Deal Amount")).sort_values(by="Total Deal Amount", ascending=False)[:3]
print(Industry_Count.columns)
colors = plt.cm.get_cmap("tab10", 3)
plt.figure(figsize=(20,8))
plt.bar(x=Industry_Count.index,height=Industry_Count["Total Deal Amount"],width=0.5,color=colors(range(3)),)

for i,value in enumerate(Industry_Count['Total Deal Amount']) :
    plt.text(i, value, str(value) , ha="center" , va="bottom" , weight = "bold")
plt.show()
```

Marwadi University Faculty of Technology Department of Information and Communication Technology		
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Output:-

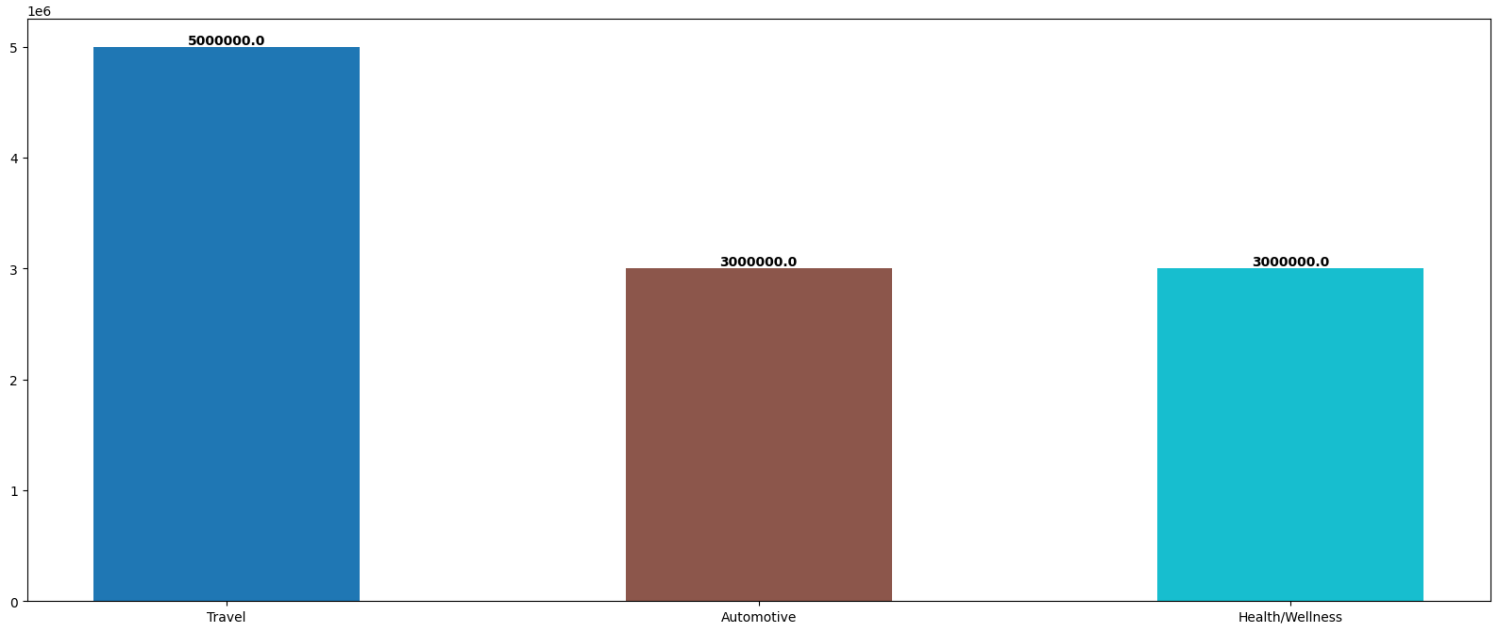


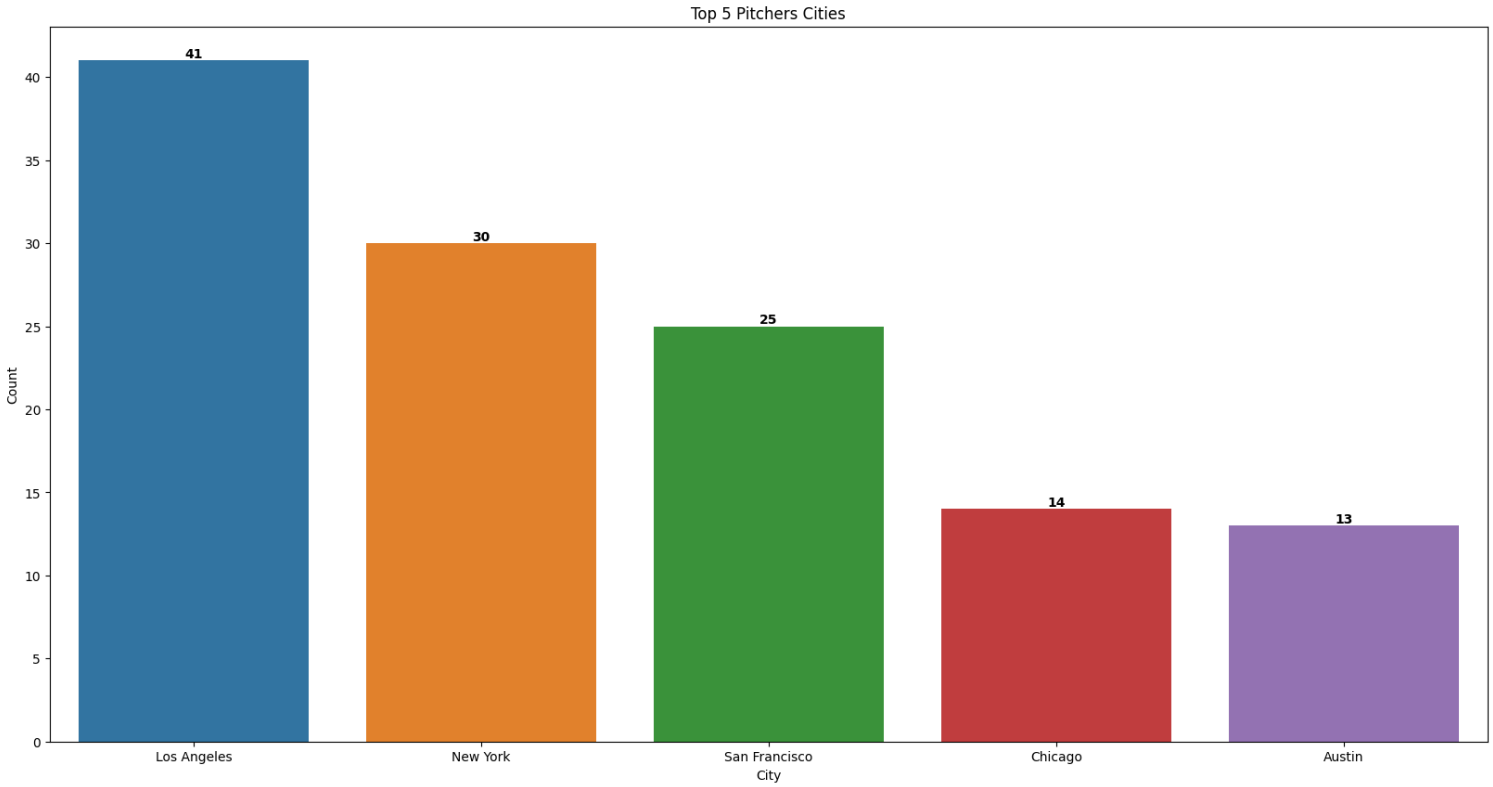
Tableau Plot:-

5) Which are the top 5 cities with the maximum number of entrepreneurs?

Code:-

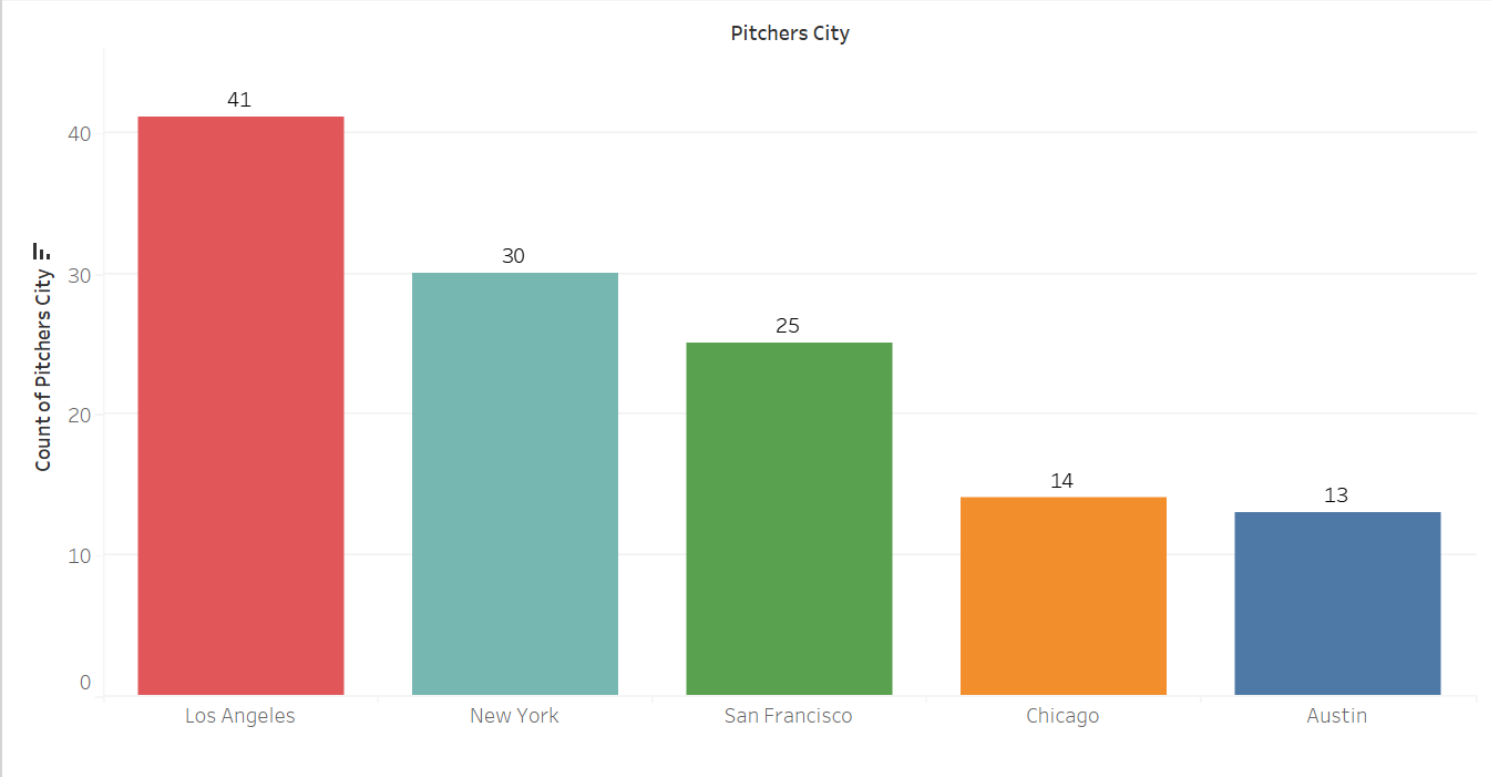
```
City_Count = pd.DataFrame(Dataset["Pitchers City"].value_counts().rename("Counts")[:5])
plt.figure(figsize=(20, 10))
sns.barplot(x=City_Count.index, y="Counts", data=City_Count, hue=City_Count.index)

for i, value in enumerate(City_Count['Counts']):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xlabel("City")
plt.ylabel("Count")
plt.title("Top 5 Pitchers Cities")
plt.show()
```

Output:-



Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-



6) Which are the top 3 states that have got maximum number of deals?
Code:-

```
State_Count = pd.DataFrame(Dataset["Pitchers State"].value_counts().rename('Counts'))[:3]
plt.figure(figsize=(20, 10))
sns.barplot(x=State_Count.index, y="Counts", data=State_Count, hue=State_Count.index)

for i, value in enumerate(State_Count["Counts"]):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xlabel("State")
plt.ylabel("Count")
plt.title("Top 5 Pitchers Cities")
plt.show()
```

Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Output:-

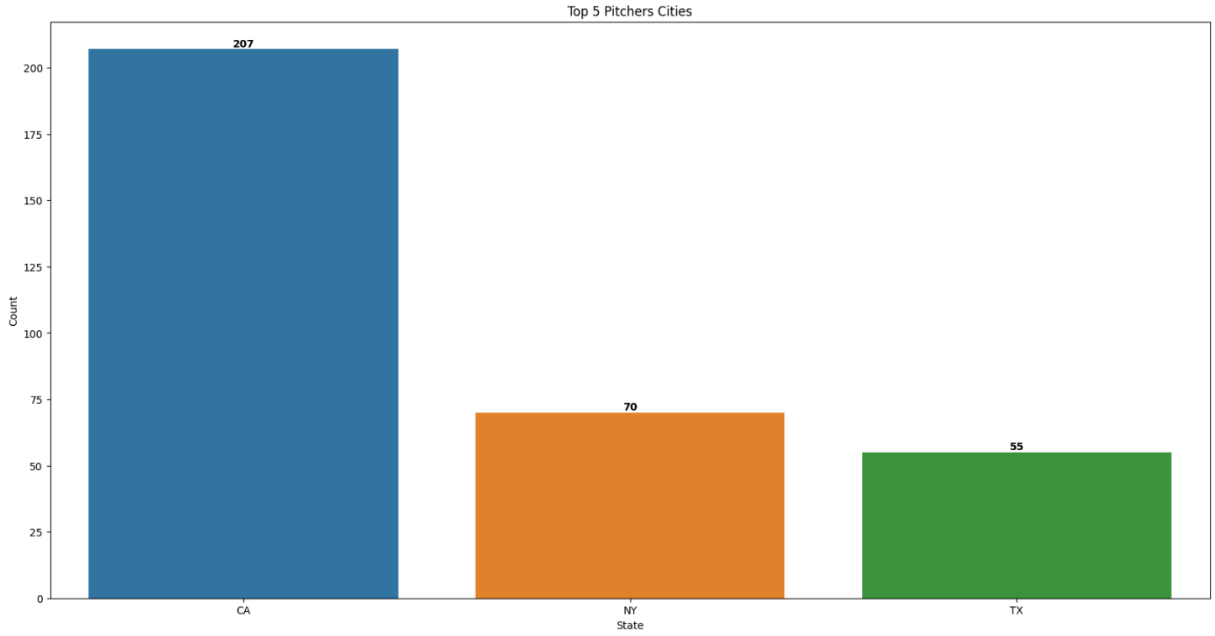
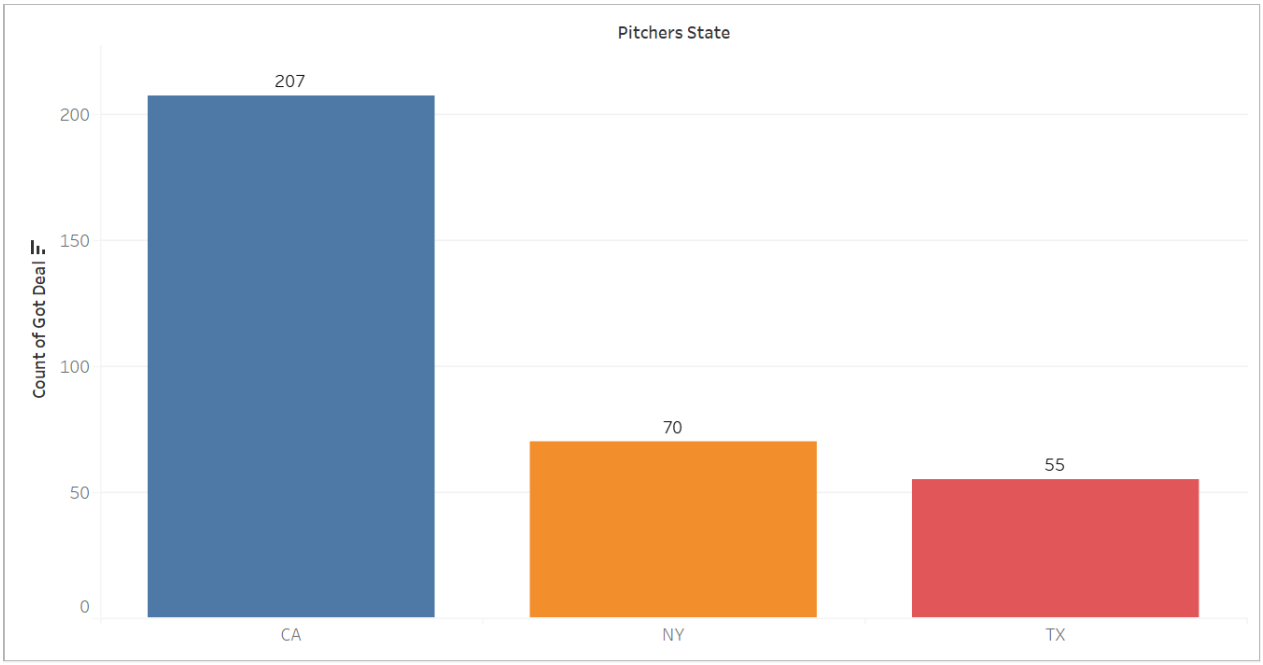


Tableau Plot:-



7) Industry- wise count the total number of startups who pitched in the shark tank

Code:-

```
Industry_Count = pd.DataFrame(Dataset["Industry"].value_counts().rename('Counts'))
plt.figure(figsize=(30, 10))
sns.barplot(x=Industry_Count.index, y="Counts", data=Industry_Count, hue=Industry_Count.index)

for i, value in enumerate(Industry_Count["Counts"]):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xlabel("Industry")
plt.ylabel("Count")
plt.title("Top 5 Pitchers Cities")
plt.show()
```

Output:-

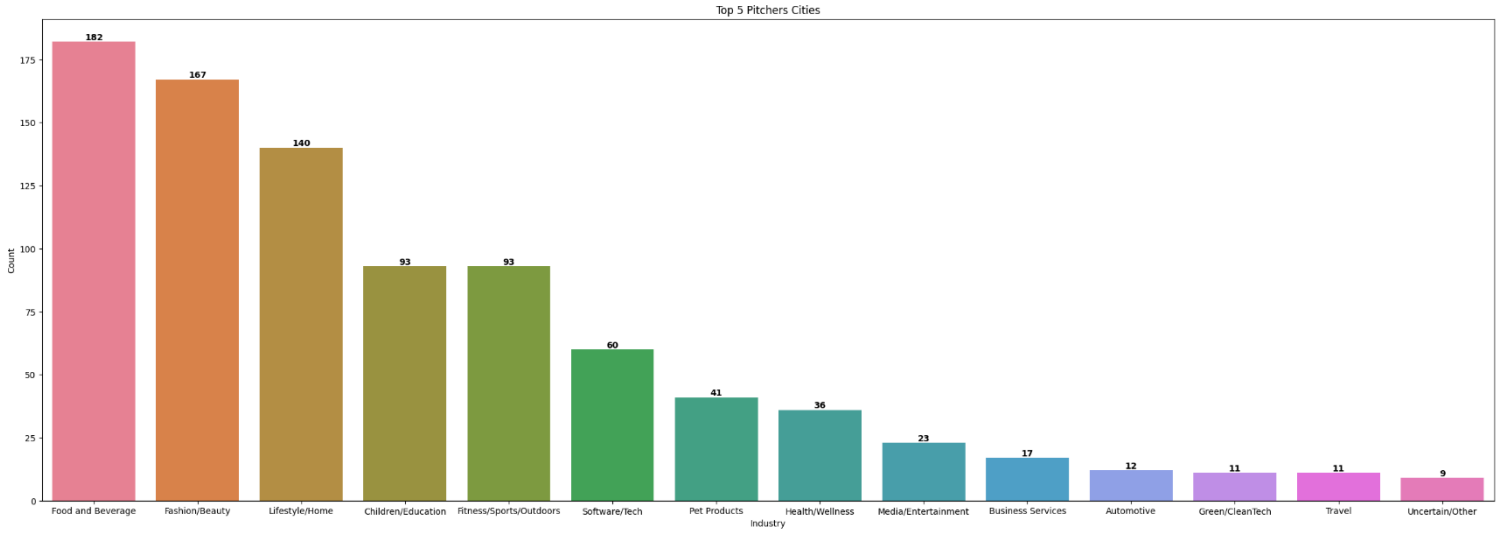
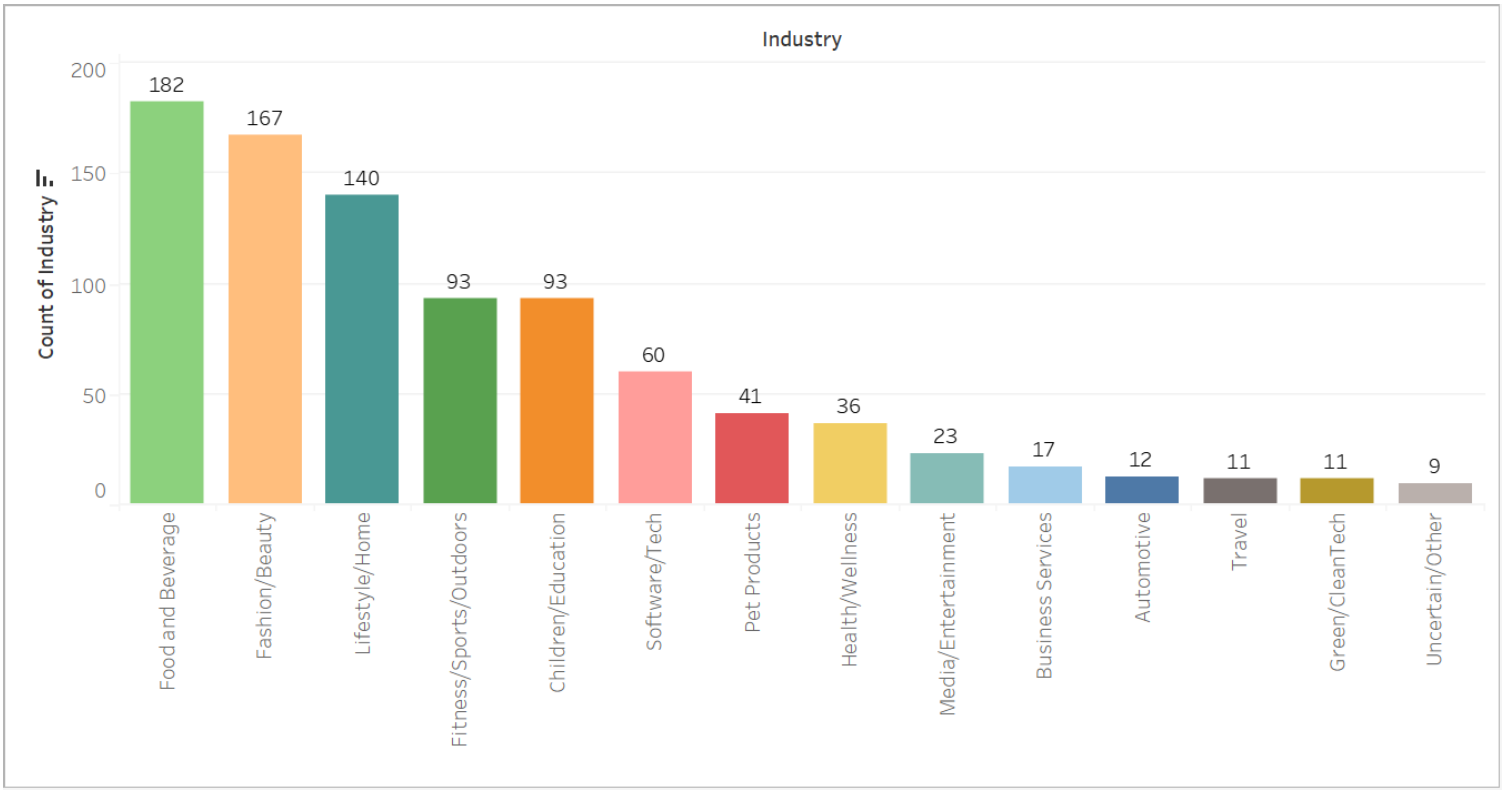


Tableau Plot:-



8) Count the number of pitchers who are male, and female and belong to the mixed team

Code:-

```
Gender_Count = pd.DataFrame(Dataset["Pitchers Gender"].value_counts().rename('Counts'))
plt.figure(figsize=(30, 10))
sns.barplot(x=Gender_Count.index, y="Counts", data=Gender_Count, hue=Gender_Count.index)

for i, value in enumerate(Gender_Count["Counts"]):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xlabel("Gender")
plt.ylabel("Count")
plt.title("Top 5 Pitchers Cities")
plt.show()
```

Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Output:-

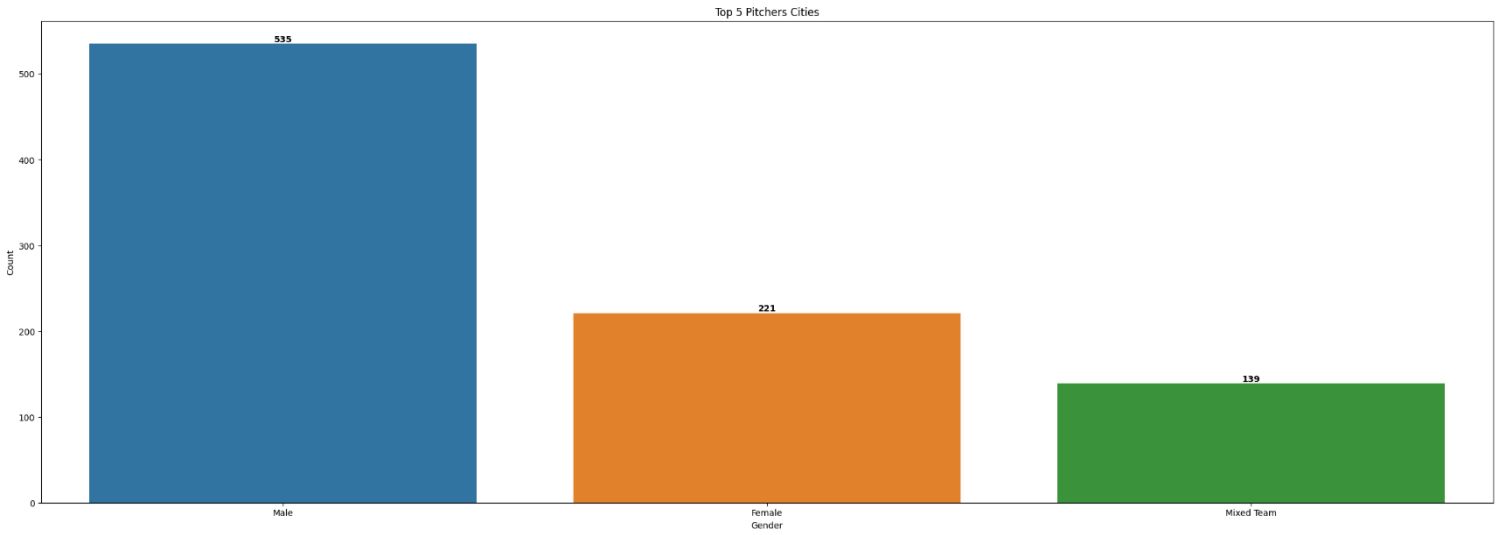
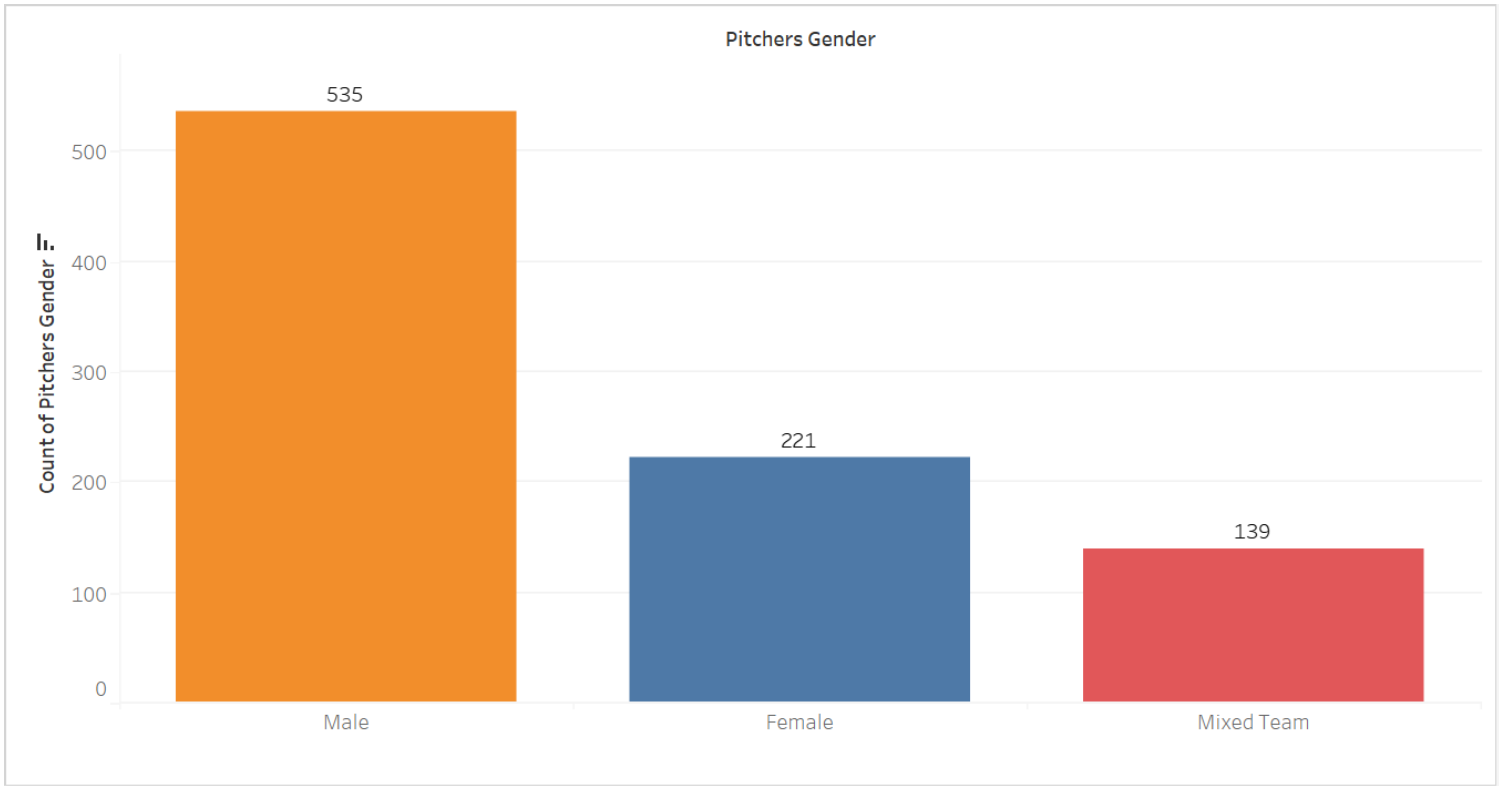


Tableau Plot:-

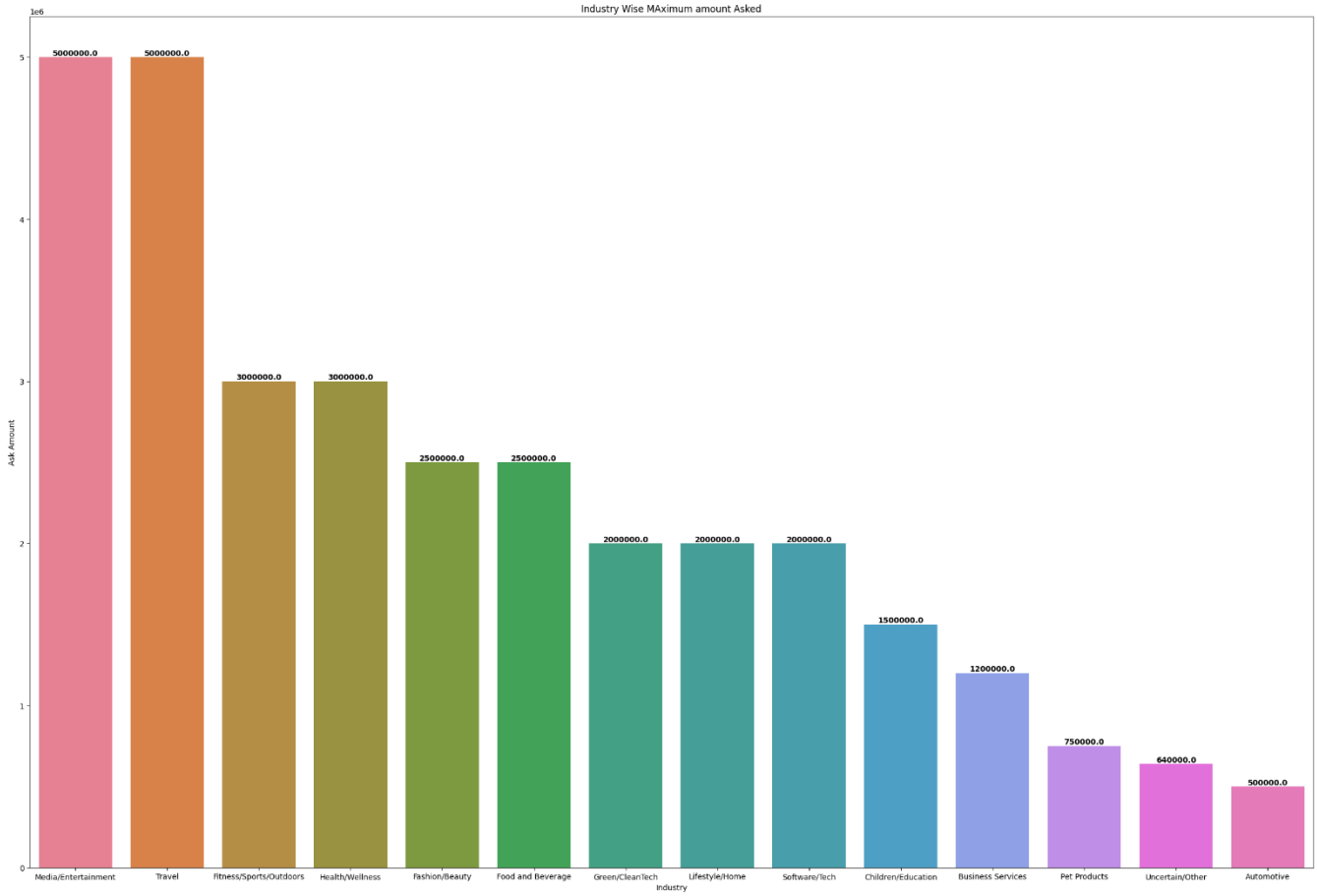


9) Find the maximum amount requested by a pitcher in each industrial segment

Code:-

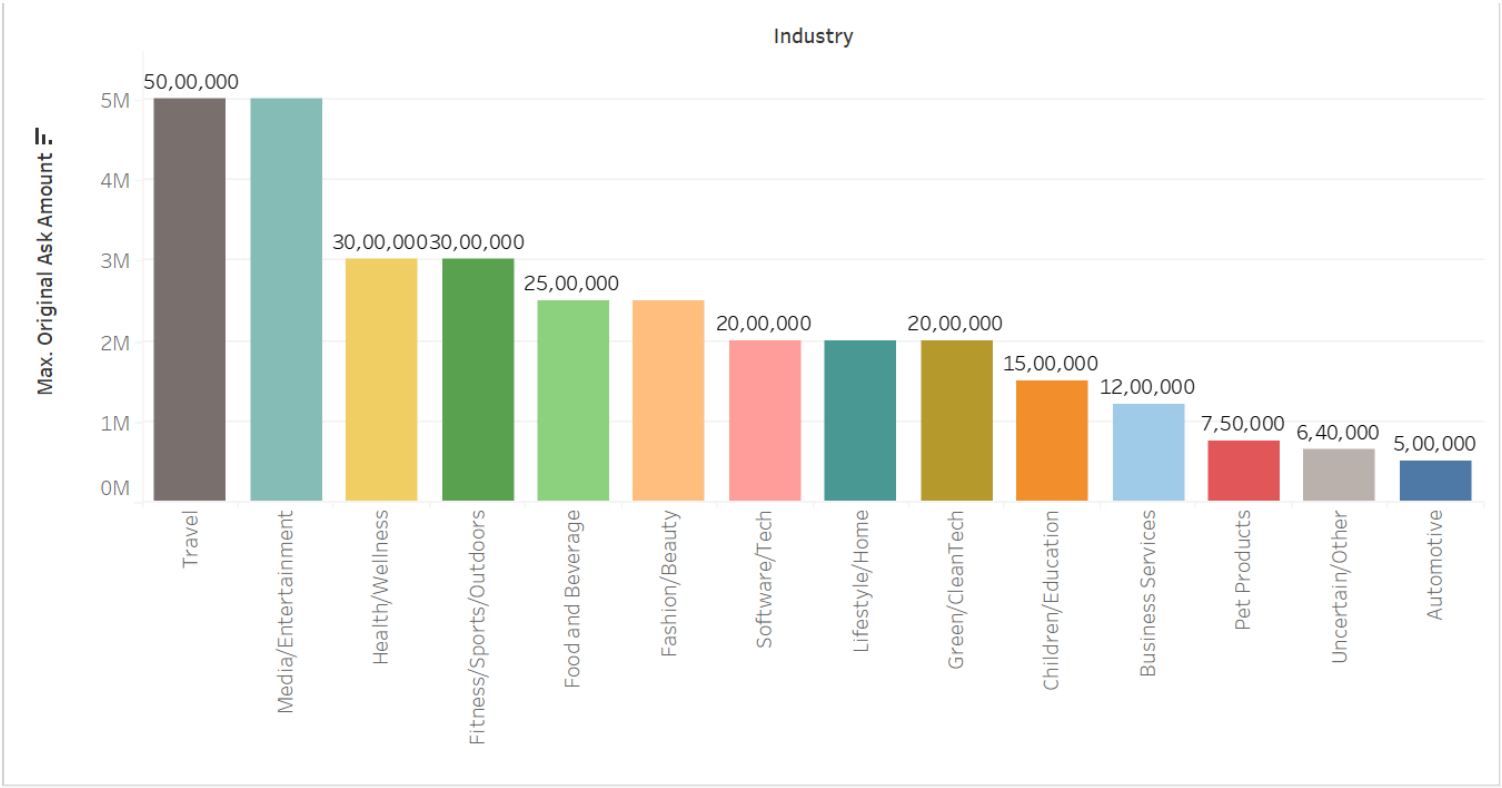
```
Industry_Wise_Deal_Amount = (Dataset.groupby("Industry")["Original Ask Amount"].max().reset_index())
Industry_Wise_Deal_Amount = Industry_Wise_Deal_Amount.sort_values(by = 'Original Ask Amount' , ascending = False)

plt.figure(figsize=(30,20))
sns.barplot(data=Industry_Wise_Deal_Amount,x="Industry",y="Original Ask Amount",hue="Industry",)

for i,value in enumerate(Industry_Wise_Deal_Amount['Original Ask Amount']) :
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xlabel("Industry")
plt.ylabel("Ask Amount")
plt.title("Industry Wise MAximum amount Asked")
plt.show()
```

Output:-



Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-



10) Find the maximum equity received by a shark in each industrial segment

Code:-

```
Industry_Wise_Received_Equity = Dataset.groupby("Industry")["Total Deal Equity"].max()
Industry_Wise_Received_Equity = pd.DataFrame(Industry_Wise_Received_Equity)
Industry_Wise_Received_Equity = Industry_Wise_Received_Equity.sort_values(by="Total Deal Equity",
ascending=False)

plt.figure(figsize=(30, 15))
sns.barplot(data=Industry_Wise_Received_Equity.reset_index(),x="Industry", y="Total Deal Equity",hue="Industry")

for i,value in enumerate(Industry_Wise_Received_Equity['Total Deal Equity']) :
    plt.text(i , value , str(value), ha = "center" , va = "bottom" , weight = "bold")

plt.xticks(rotation=45)
plt.xlabel("Industry")
plt.ylabel("Total Deal Equity")
plt.title("Industry-wise Total Deal Equity")
plt.show()
```

Marwadi University **Faculty of Technology** **Department of Information and Communication Technology**		
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Output:-

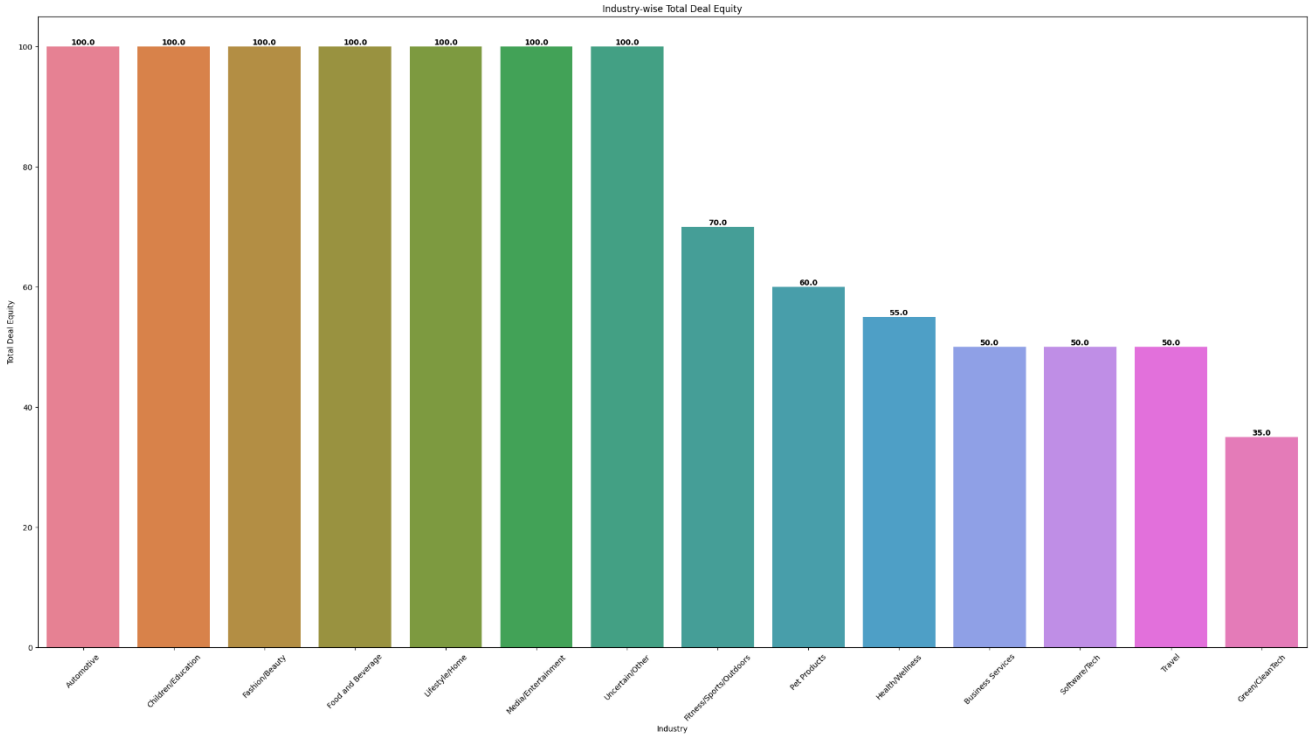
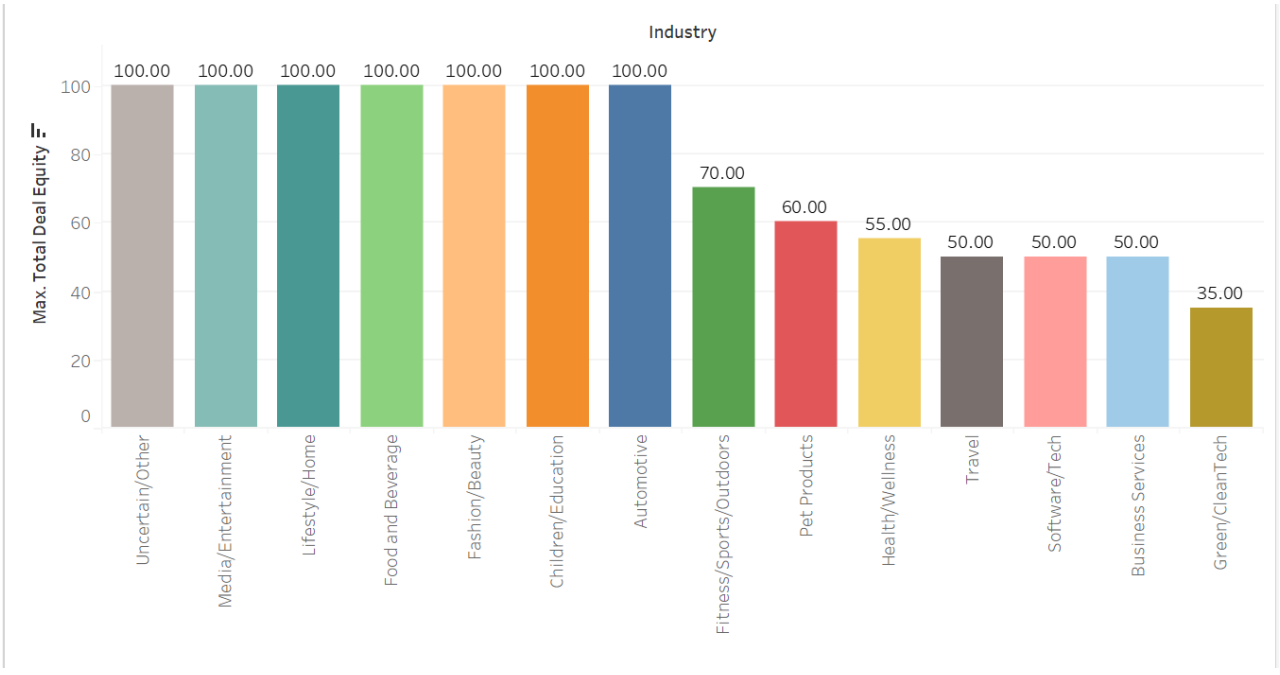


Tableau Plot:-



11) Find the total amount invested by each shark throughout the shark tank

Code:-

```
Dataset = Dataset.fillna(0)
Investments_of_Sharks = {}
Investments_of_Sharks['Shark_Name'] = []
Investments_of_Sharks['Amount'] = []
Column_Name = ["Barbara Corcoran Investment Amount","Mark Cuban Investment Amount","Lori Greiner
Investment Amount","Robert Herjavec Investment Amount","Daymond John Investment Amount","Kevin O Leary
Investment Amount","Guest Investment Amount"]
for i in Column_Name :
    Shark_Name = i.split(' ')
    Investments_of_Sharks["Shark_Name"].append(Shark_Name[0] + " " + Shark_Name[1])
    Investments_of_Sharks['Amount'].append(Dataset[i].sum())
Investments_of_Sharks = pd.DataFrame(Investments_of_Sharks).sort_values(by = "Amount" , ascending=False)
pd.options.display.float_format = '{:.2f}'.format
plt.figure(figsize=(30,15))
sns.barplot(data=Investments_of_Sharks.reset_index(), x="Shark_Name", y="Amount", hue="Shark_Name")
for i,value in enumerate(Investments_of_Sharks['Amount']) :
    plt.text(i, value, str(value), ha = "center", va = "bottom", weight = "bold")
plt.xticks(rotation=45)
plt.xlabel("Shark Name")
plt.ylabel("Total Amount Invested")
plt.title("Total Amount Invested By Each Shark")
plt.show()
```

Output:-

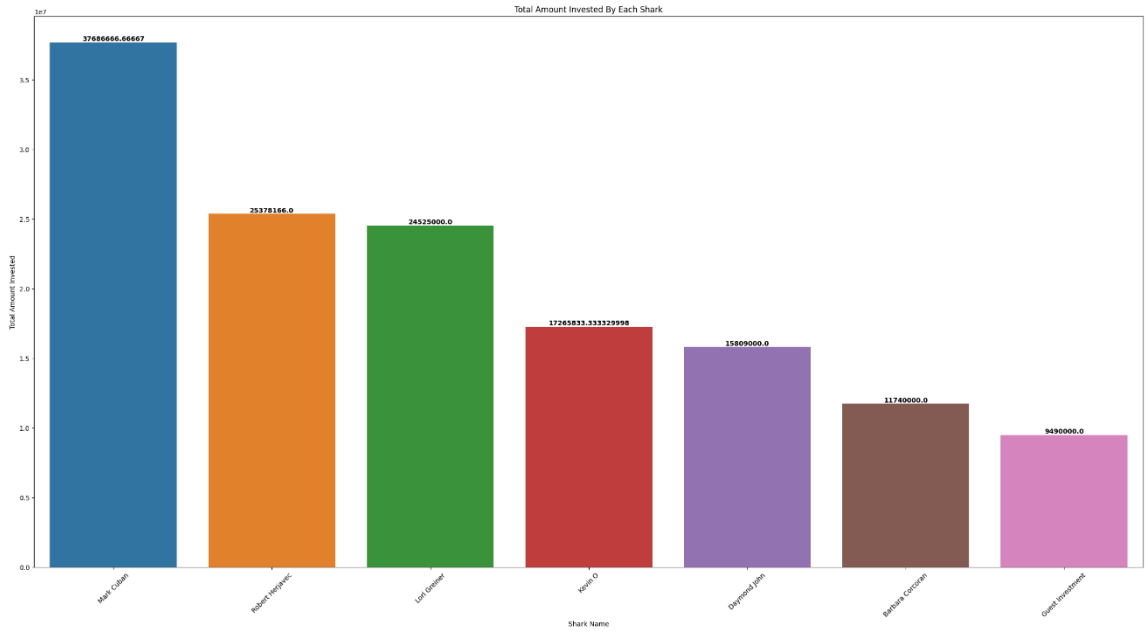
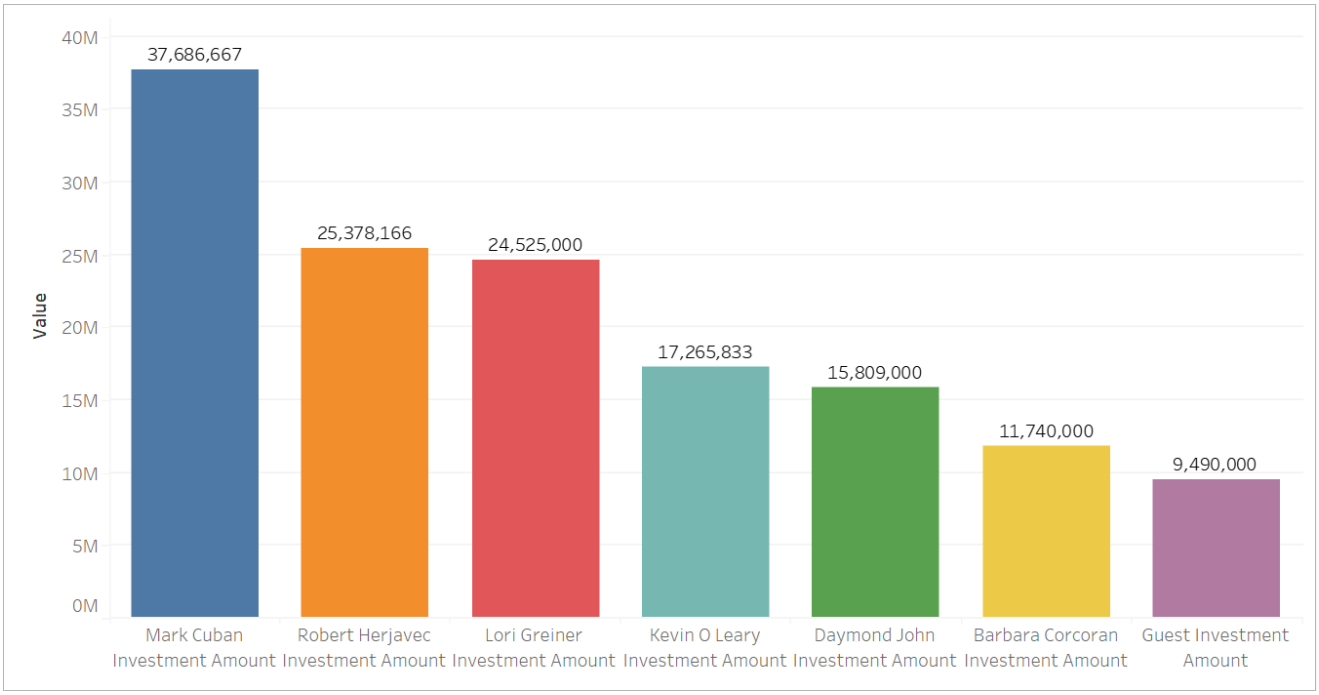


Tableau Plot:-



12) Name the startups with Top-15 investments

Code:-

```
Sorted_Deal = Dataset.sort_values(by="Total Deal Amount" , ascending=False).reset_index()[:15]
print(Sorted_Deal[["Startup Name" , "Total Deal Amount"]])
plt.figure(figsize=(30, 15))
sns.barplot(data=Sorted_Deal,x="Startup Name",y="Total Deal Amount",hue="Startup Name")

for i, value in enumerate(Sorted_Deal["Total Deal Amount"]):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xticks(rotation=45)
plt.xlabel("Startup Name")
plt.ylabel("Total Amount Received")
plt.title("Top 15 Investment")
plt.show()
```

Marwadi University **Faculty of Technology** **Department of Information and Communication Technology**		
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Output:-

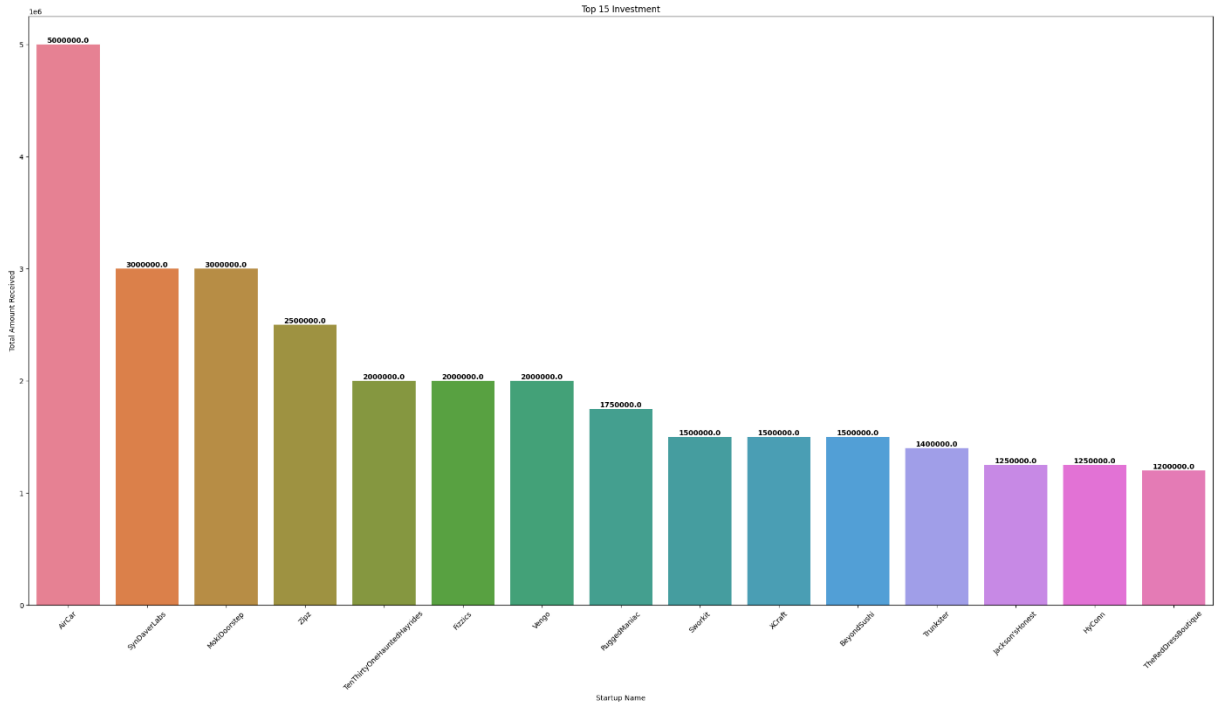
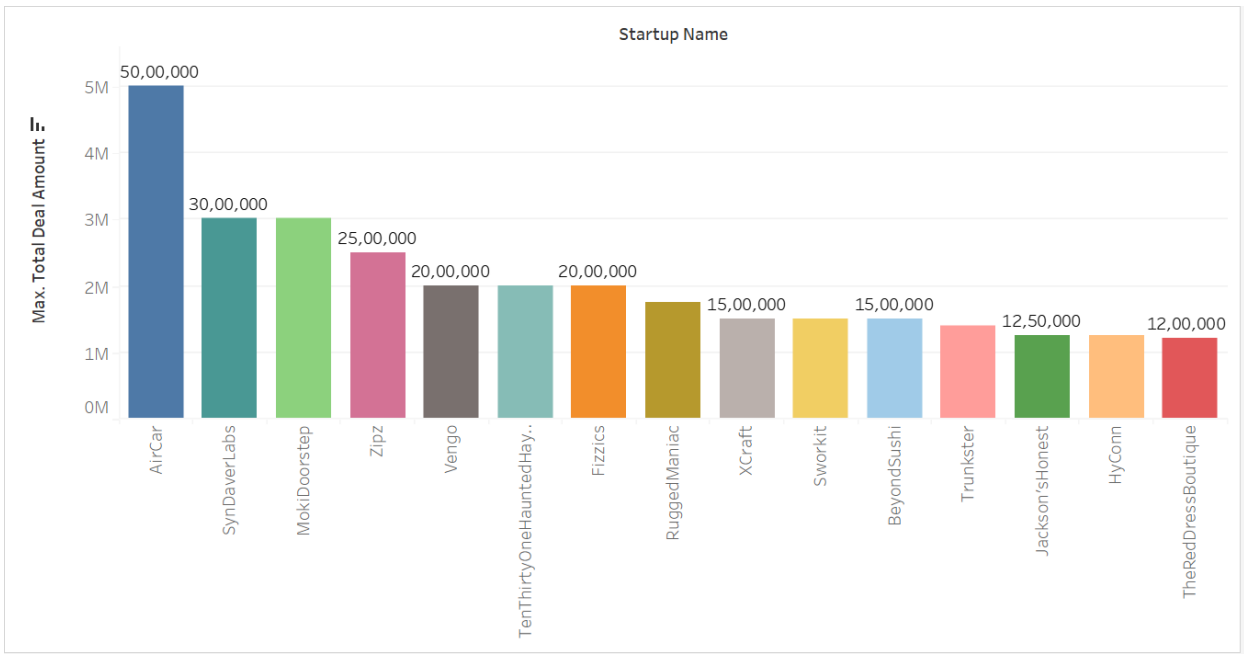


Tableau Plot:-

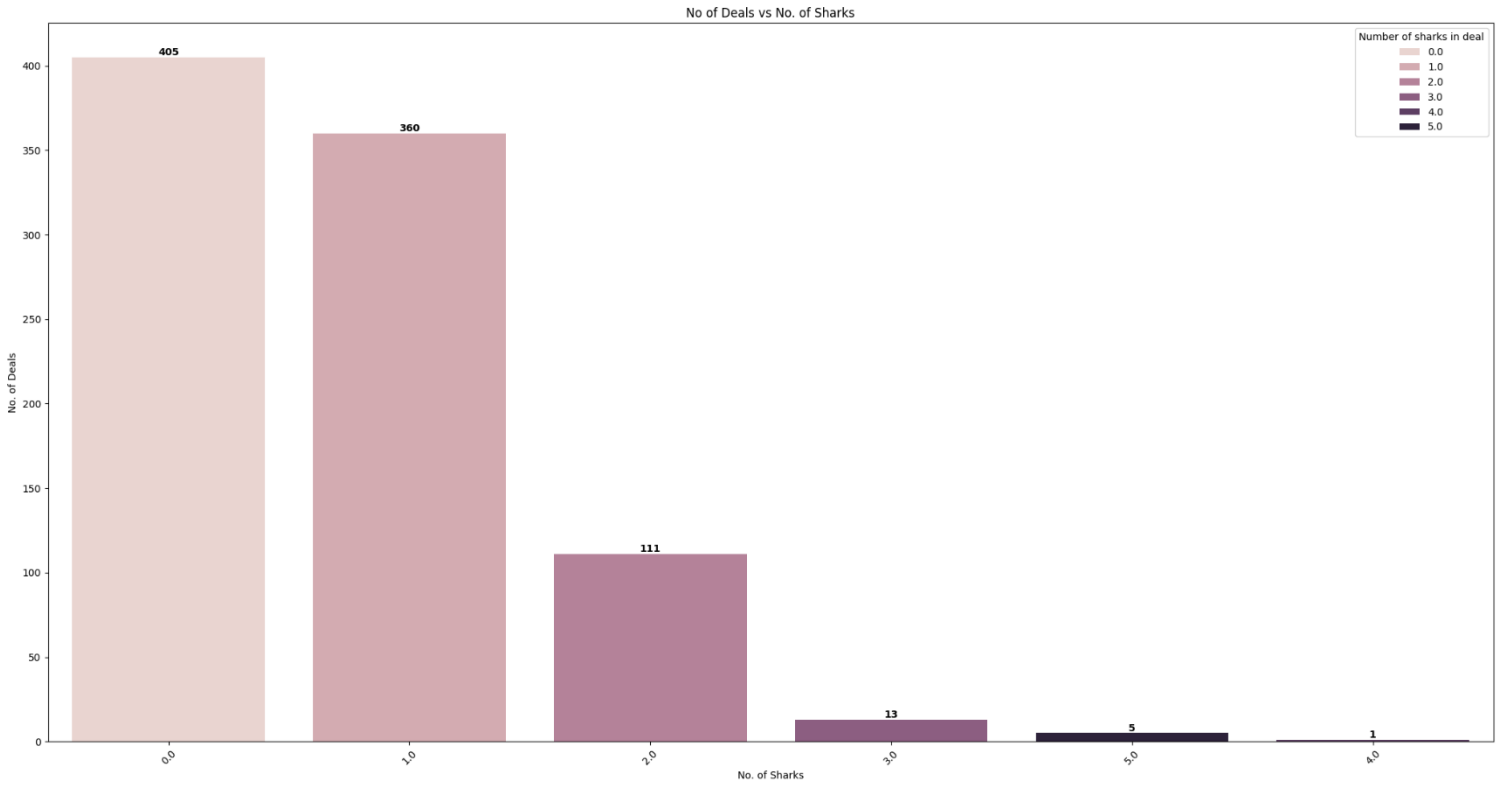


13) Find the number of deals having [1,2,3,4,5] sharks included in the deal

Code:-

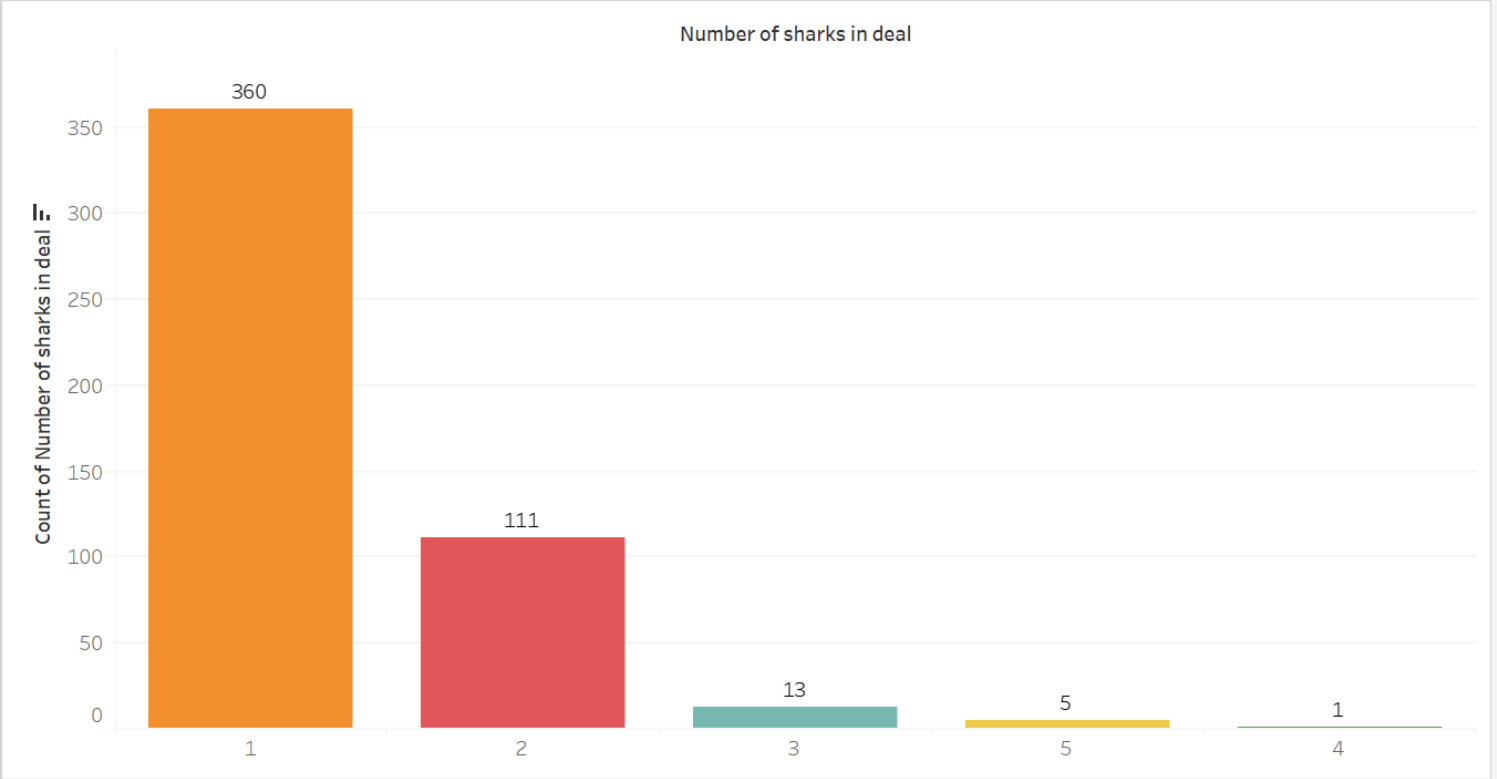
```
plt.figure(figsize=(26,13))
sns.countplot(x=Dataset["Number of sharks in deal"],hue=Dataset["Number of sharks in
deal"],order=Dataset["Number of sharks in deal"].value_counts(ascending=False).index,)

for i, value in enumerate(Dataset["Number of sharks in deal"].value_counts()):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold")

plt.xticks(rotation=45)
plt.xlabel("No. of Sharks")
plt.ylabel("No. of Deals")
plt.title("No of Deals vs No. of Sharks")
plt.show()
```

Output:-



Marwadi University Faculty of Technology Department of Information and Communication Technology		
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-



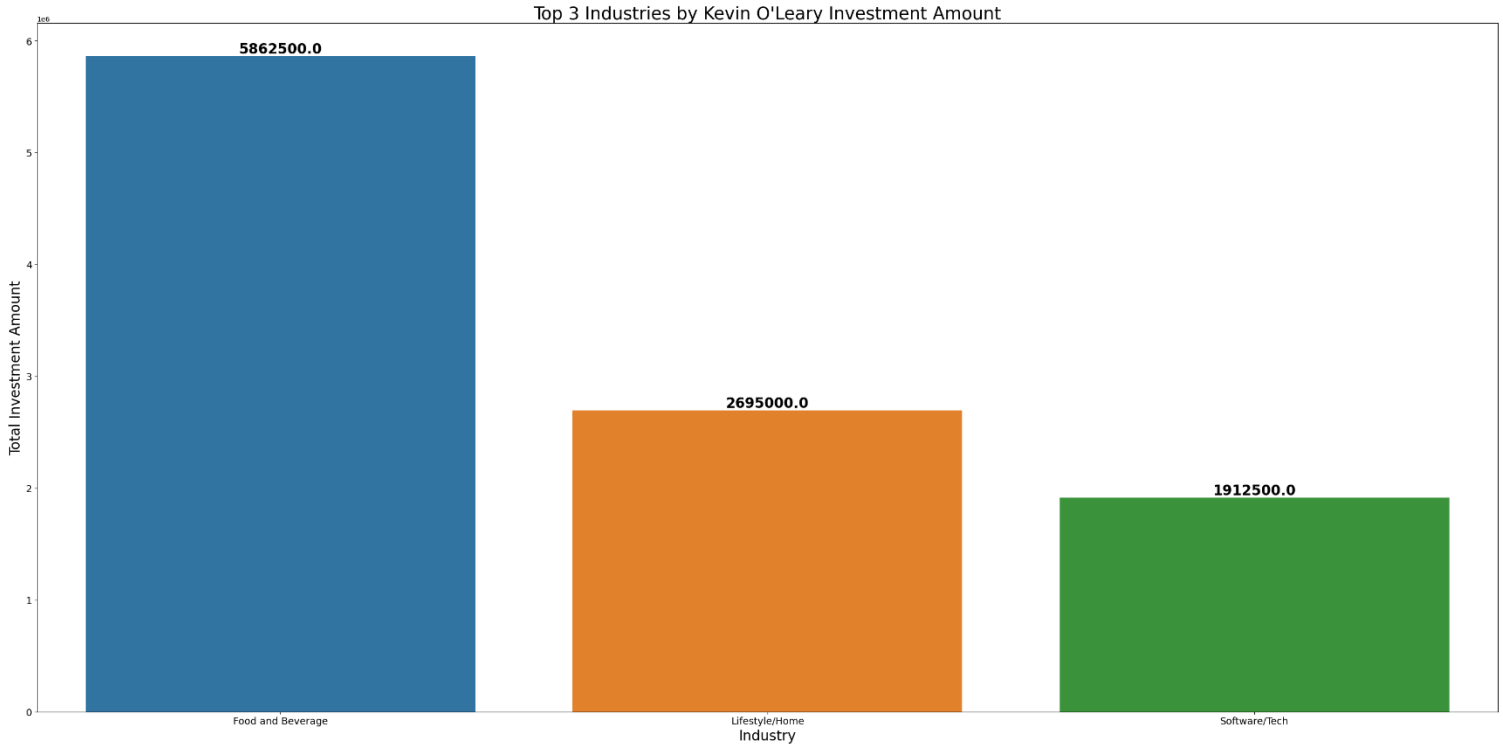
14) Which are the top 3 industries where "Kevin O Leary" is more interested in investing?

Code:-

```
Dataset = Dataset.fillna(0)
Kevin_O_Leary_Interestered_Industries = Dataset.groupby("Industry")["Kevin O Leary Investment Amount"].sum()
Kevin_O_Leary_Interestered_Industries = pd.DataFrame(Kevin_O_Leary_Interestered_Industries)
Kevin_O_Leary_Interestered_Industries = Kevin_O_Leary_Interestered_Industries.sort_values(by="Kevin O Leary Investment Amount" , ascending=False )
Kevin_O_Leary_Interestered_Industries = Kevin_O_Leary_Interestered_Industries[:3]
print(Kevin_O_Leary_Interestered_Industries)

plt.figure(figsize=(30, 15))
sns.barplot(data=Kevin_O_Leary_Interestered_Industries, x=Kevin_O_Leary_Interestered_Industries.index, y="Kevin O Leary Investment Amount", hue=Kevin_O_Leary_Interestered_Industries.index)

for i, value in enumerate(Kevin_O_Leary_Interestered_Industries["Kevin O Leary Investment Amount"]):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold", fontsize=20)

plt.title("Top 3 Industries by Kevin O'Leary Investment Amount", fontsize=25)
```

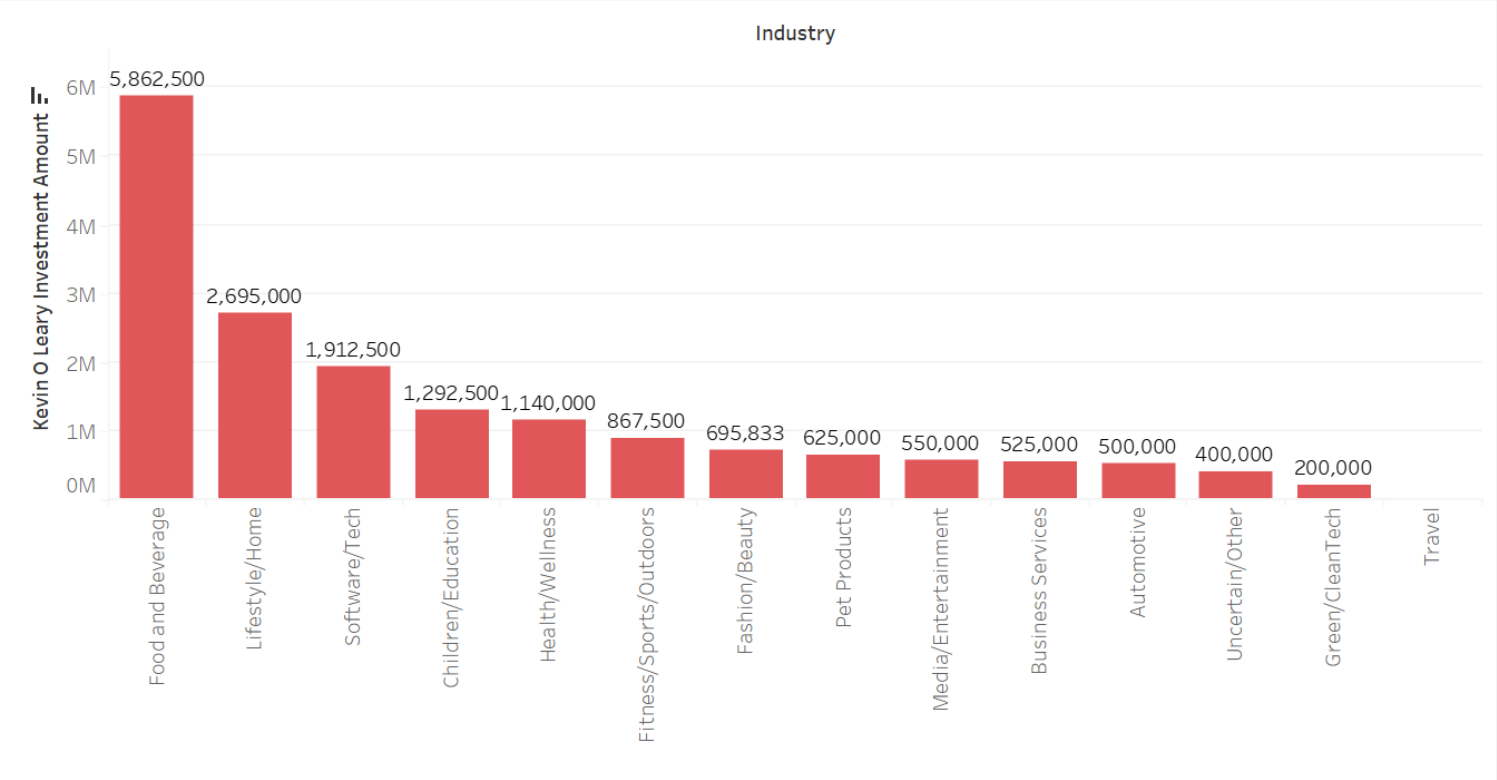
```
plt.xlabel("Industry", fontsize=20)
plt.ylabel("Total Investment Amount", fontsize=20)
plt.xticks(fontsize=14)
plt.yticks(fontsize=14)
plt.tight_layout()
plt.show()
```

Output:-



Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-



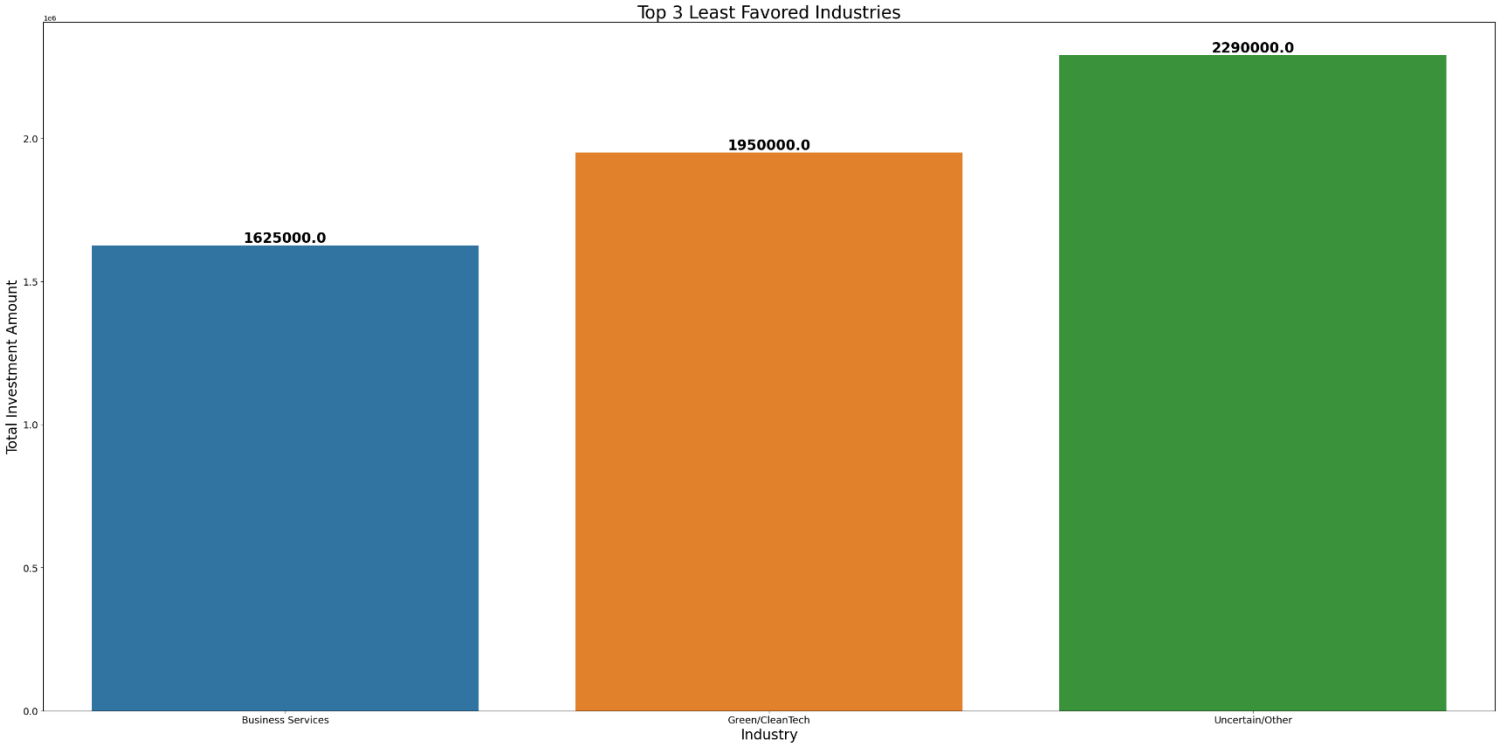
15) Which are the 3 least favored industries by the sharks?

Code:-

```
Least_Favoured_Industry = Dataset.groupby("Industry")["Total Deal Amount"].sum()
Least_Favoured_Industry = pd.DataFrame(Least_Favoured_Industry)
Least_Favoured_Industry = Least_Favoured_Industry.sort_values(by="Total Deal Amount" , ascending= True)
Least_Favoured_Industry = Least_Favoured_Industry[:3]
print(Least_Favoured_Industry)

plt.figure(figsize=(30, 15))
sns.barplot(data=Least_Favoured_Industry, x=Least_Favoured_Industry.index, y="Total Deal Amount",
hue=Least_Favoured_Industry.index)

for i, value in enumerate(Least_Favoured_Industry["Total Deal Amount"]):
    plt.text(i, value, str(value), ha="center", va="bottom", weight="bold", fontsize=20)

plt.title("Top 3 Least Favored Industries", fontsize=25)
plt.xlabel("Industry", fontsize=20)
plt.ylabel("Total Investment Amount", fontsize=20)
```

```
plt.xticks(fontsize=14)
plt.yticks(fontsize=14)
plt.tight_layout()
plt.show()
```

Output:-



Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Data Visualization and Dashboards (01CT0410)	**Aim:** Analysis of Shark Tank US Dataset	
Case Study - 2	**Date:-** 25-03-2024	**Enrollment No:-** 92200133030

Tableau Plot:-

16) Give your conclusion over the entire analysis, depicting the overall inference from the dataset.

- By performing this analysis if we can get an inference then it is showing how the startup culture of the USA is working which kinds of startups are been started and running successful businesses and we can also come to know the interest in investments of each and every sharks.