



In [1]:  *# The dataset presents detailed information pertaining to boat sales, promp*

In [2]:  `import matplotlib.pyplot as plt
import pandas as pd
import json`

In [3]:  `boat = pd.read_csv("boat_data.csv")`

```
In [4]: ▶ boat
```

Out[4]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material	
0	CHF 3337	Motor Yacht	Rigiflex power boats	new boat from stock	2017	4.00	1.90	NaN	S
1	EUR 3490	Center console boat	Terhi power boats	new boat from stock	2020	4.00	1.50	Thermoplastic	Ge
2	CHF 3770	Sport Boat	Marine power boats	new boat from stock	0	3.69	1.42	Aluminium	S
3	DKK 25900	Sport Boat	Pioner power boats	new boat from stock	2020	3.00	1.00	NaN	De
4	EUR 3399	Fishing Boat	Linder power boats	new boat from stock	2019	3.55	1.46	Aluminium	Ge
...	M
9883	CHF 4900	Sport Boat	Sea Ray power boats	Used boat,Unleaded	1987	6.30	2.44	NaN	S
9884	EUR 4516	Sport Boat	NaN	new boat from stock	0	4.17	1.68	GRP	Ge
9885	EUR 4499	Sport Boat	BlueCraft power boats	new boat from stock,Unleaded	2020	4.40	1.80	GRP	Ge
9886	EUR 4300	Pontoon Boat	Whaly power boats	new boat from stock	2018	4.37	1.89	NaN	We
9887	CHF 3780	Fishing Boat	DarekCo power boats	new boat from stock	2019	3.60	1.60	GRP	S

9888 rows × 10 columns



```
In [5]: ▶ N_of_view = boat["Number of views last 7 days"]
```

```
In [6]: ▶ #boat_list = []  
#for i in N_of_view:  
#    if i >= 100:  
#        boat_list.append(i)  
#        print(i)  
#    else:  
#        print('error')
```

```
In [7]: ▶ for index, row in boat.iloc[-1:].iterrows():  
recall = boat["Number of views last 7 days"].max()
```

```
In [8]: ▶ recall
```

Out[8]: 3263

```
In [9]: ▶ # We have to filter out same boat manufacturer and boat type so we can have
```

```
In [10]: ▶ boat[boat.duplicated(subset=['Boat Type' , 'Manufacturer' , 'Type' , 'Year
```

Out[10]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material	Location
16	CHF 4380	Sport Boat	Linder power boats	new boat from stock	0	4.31	1.64	Aluminium	Switzerland Ä» Lake Constance Ä» Unterseen
20	EUR 3999	Fishing Boat	Linder power boats	new boat from stock	2019	3.55	1.46	Aluminium	Germany Ä» Bay of MÃ¼nchen
33	CHF 3850	Sport Boat	Linder power boats	new boat from stock	0	3.55	1.46	Aluminium	Switzerland Ä» Lake Constance Ä» Unterseen
37	CHF 3790	Sport Boat	Pioner power boats	new boat on order	0	3.93	1.55	NaN	Switzerland Safer
48	CHF 5850	Sport Boat	Marine power boats	new boat from stock	0	4.45	1.67	Aluminium	Switzerland Ä» Lake Zurich StÃ¶rfalÃ¶se ZÃ¶rchersee
...
9881	CHF 4950	Sport Boat	Marine power boats	new boat from stock	0	3.99	1.52	Aluminium	Switzerland Ä» Lake Zurich StÃ¶rfalÃ¶se
9883	CHF 4900	Sport Boat	Sea Ray power boats	Used boat,Unleaded	1987	6.30	2.44	NaN	Switzerland Ä» Lake Maggiore Riazz Germany
9884	EUR 4516	Sport Boat	NaN	new boat from stock	0	4.17	1.68	GRP	Hamburg HAMBURG Germany
9885	EUR 4499	Sport Boat	BlueCraft power boats	new boat from stock,Unleaded	2020	4.40	1.80	GRP	Nordrhein-Westfalen Ä» We
9886	EUR 4300	Pontoon Boat	Whaly power boats	new boat from stock	2018	4.37	1.89	NaN	Italy Dormelletto

3456 rows × 10 columns

```
In [11]: ▶ boat.drop_duplicates(subset=['Boat Type' , 'Manufacturer' , 'Type' , 'Year
```

```
In [12]: ▶ boat
```

Out[12]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width
0	CHF 3337	Motor Yacht	Rigiflex power boats	new boat from stock	2017	4.00	1.9
1	EUR 3490	Center console boat	Terhi power boats	new boat from stock	2020	4.00	1.5
2	CHF 3770	Sport Boat	Marine power boats	new boat from stock	0	3.69	1.4
3	DKK 25900	Sport Boat	Pioner power boats	new boat from stock	2020	3.00	1.0
4	EUR 3399	Fishing Boat	Linder power boats	new boat from stock	2019	3.55	1.4
...
9876	CHF 5000	Pilothouse	Lambro power boats	Used boat, Unleaded	0	6.50	2.4
9877	CHF 5000	Cabin Boat	Princess power boats	Used boat	1974	7.20	2.7
9878	CHF 4999	Sport Boat, Wakeboard/Wakesurf, Water ski	Tullio Abbate power boats	Used boat, Unleaded	1980	6.00	2.1
9882	CHF 4950	Fishing Boat	Staempfli power boats	Used boat, Unleaded	1984	6.00	1.6
9887	CHF 3780	Fishing Boat	DarekCo power boats	new boat from stock	2019	3.60	1.6

6432 rows × 10 columns



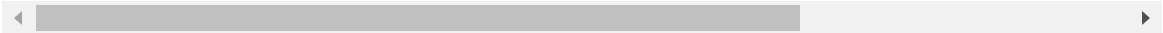
```
In [13]: ▶ boat.dropna(axis = 0, inplace = True, how = 'all' )
```

In [14]: ▶ boat

Out[14]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width
0	CHF 3337	Motor Yacht	Rigiflex power boats	new boat from stock	2017	4.00	1.9
1	EUR 3490	Center console boat	Terhi power boats	new boat from stock	2020	4.00	1.5
2	CHF 3770	Sport Boat	Marine power boats	new boat from stock	0	3.69	1.4
3	DKK 25900	Sport Boat	Pioner power boats	new boat from stock	2020	3.00	1.0
4	EUR 3399	Fishing Boat	Linder power boats	new boat from stock	2019	3.55	1.4
...
9876	CHF 5000	Pilothouse	Lambro power boats	Used boat, Unleaded	0	6.50	2.4
9877	CHF 5000	Cabin Boat	Princess power boats	Used boat	1974	7.20	2.7
9878	CHF 4999	Sport Boat, Wakeboard/Wakesurf, Water ski	Tullio Abbate power boats	Used boat, Unleaded	1980	6.00	2.1
9882	CHF 4950	Fishing Boat	Staempfli power boats	Used boat, Unleaded	1984	6.00	1.6
9887	CHF 3780	Fishing Boat	DarekCo power boats	new boat from stock	2019	3.60	1.6

6432 rows × 10 columns



In [15]: ▶ # we have slice out the sales fishing boat how many fishing boat are sold i

In []: ▶

In [16]:

▶ boat

Out[16]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Widt
0	CHF 3337	Motor Yacht	Rigiflex power boats	new boat from stock	2017	4.00	1.9
1	EUR 3490	Center console boat	Terhi power boats	new boat from stock	2020	4.00	1.5
2	CHF 3770	Sport Boat	Marine power boats	new boat from stock	0	3.69	1.4
3	DKK 25900	Sport Boat	Pioner power boats	new boat from stock	2020	3.00	1.0
4	EUR 3399	Fishing Boat	Linder power boats	new boat from stock	2019	3.55	1.4
...
9876	CHF 5000	Pilothouse	Lambro power boats	Used boat,Unleaded	0	6.50	2.4
9877	CHF 5000	Cabin Boat	Princess power boats	Used boat	1974	7.20	2.7
9878	CHF 4999	Sport Boat,Wakeboard/Wakesurf,Water ski	Tullio Abbate power boats	Used boat,Unleaded	1980	6.00	2.1
9882	CHF 4950	Fishing Boat	Staempfli power boats	Used boat,Unleaded	1984	6.00	1.6
9887	CHF 3780	Fishing Boat	DarekCo power boats	new boat from stock	2019	3.60	1.6

6432 rows × 10 columns



In [17]:

▶ FishingBoat = boat.loc[boat['Boat Type'] == 'Fishing Boat']

In [18]:

▶ FishingBoat.reset_index()

Out[18]:

	index	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material
0	4	EUR 3399	Fishing Boat	Linder power boats	new boat from stock	2019	3.55	1.46	Aluminium
1	8	EUR 3333	Fishing Boat	Crescent power boats	new boat from stock	2019	3.64	1.37	NaN
2	10	CHF 3500	Fishing Boat	Terhi power boats	Used boat,Electric	1987	4.35	1.75	GRP
3	11	CHF 3480	Fishing Boat	Marine power boats	new boat from stock	0	4.13	1.41	Aluminium
4	14	CHF 4500	Fishing Boat	Italmarine power boats	Used boat,Unleaded	1997	3.72	1.33	Aluminium Vi
...
140	9857	EUR 5900	Fishing Boat	Hatecke power boats	Used boat,Unleaded	1985	4.80	1.80	NaN
141	9867	DKK 36500	Fishing Boat	Hunter power boats	Used boat	2000	5.00	1.00	NaN
142	9874	EUR 4790	Fishing Boat	Linder power boats	new boat from stock,Unleaded	2019	3.55	1.46	Aluminium
143	9882	CHF 4950	Fishing Boat	Staempfli power boats	Used boat,Unleaded	1984	6.00	1.62	Plastic
144	9887	CHF 3780	Fishing Boat	DarekCo power boats	new boat from stock	2019	3.60	1.60	GRP

145 rows × 11 columns



In [19]:

▶ FishingBoat= FishingBoat.sort_values(by = ["Year Built"], axis = 0, ascendi

In [20]:

▶ FishingBoat.reset_index()

Out[20]:

	index	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material
0	8529	CHF 39900	Fishing Boat	AW Yachts power boats	new boat from stock,Unleaded	2020	6.55	2.50	NaN
1	9585	CHF 14950	Fishing Boat	Starweld power boats	new boat from stock	2020	5.03	2.08	Aluminium
2	930	CHF 49968	Fishing Boat	EdgeWater power boats	new boat on order,Unleaded	2020	5.70	2.30	GRP
3	493	CHF 29500	Fishing Boat	Linder power boats	new boat from stock,Unleaded	2020	4.60	1.85	Aluminium
4	420	CHF 25950	Fishing Boat	ERC power boats	new boat from stock	2020	5.30	2.00	GRP
...
140	9679	EUR 11490	Fishing Boat	NaN	Used boat,Unleaded	0	6.50	2.50	GRP
141	9270	CHF 21705	Fishing Boat	Orkney power boats	new boat from stock	0	5.20	2.00	GRP
142	9657	CHF 12872	Fishing Boat	Terhi power boats	new boat from stock,Unleaded	0	4.45	1.85	Thermoplastic
143	196	EUR 14400	Fishing Boat	NaN	new boat from stock	0	5.00	2.00	NaN
144	352	CHF 21900	Fishing Boat	FÄ¼llemann power boats	new boat on order	0	6.03	1.90	GRP

145 rows × 11 columns



In [21]:

▶ FishingBoat.drop(FishingBoat[FishingBoat['Year Built'] == 0].index , axis =

In [22]: `FishingBoat.reset_index()`

Out[22]:

	index	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material
0	8529	CHF 39900	Fishing Boat	AW Yachts power boats	new boat from stock,Unleaded	2020	6.55	2.50	NaN
1	9585	CHF 14950	Fishing Boat	Starweld power boats	new boat from stock	2020	5.03	2.08	Aluminium
2	930	CHF 49968	Fishing Boat	EdgeWater power boats	new boat on order,Unleaded	2020	5.70	2.30	GRP
3	493	CHF 29500	Fishing Boat	Linder power boats	new boat from stock,Unleaded	2020	4.60	1.85	Aluminium
4	420	CHF 25950	Fishing Boat	ERC power boats	new boat from stock	2020	5.30	2.00	GRP
...
125	8211	EUR 44000	Fishing Boat	Riva power boats	Used boat,Unleaded	1976	10.45	3.43	GRP
126	36	CHF 3800	Fishing Boat	Hensa power boats	Used boat,Unleaded	1974	5.40	1.67	Plastic
127	9819	EUR 6999	Fishing Boat	NaN	Used boat,Unleaded	1974	4.20	1.50	Aluminium
128	5955	EUR 135000	Fishing Boat	NaN	Used boat,Diesel	1971	20.50	5.30	Wood
129	9839	CHF 6800	Fishing Boat	Steiner power boats	Used boat,Unleaded	1971	5.60	1.62	GRP

130 rows × 11 columns



In [23]: `# We are removing aplhabets in price column`

In [24]: `FishingBoat["Price"] = FishingBoat["Price"].str.replace('[a-zA-Z]', '', re`

```
In [25]: ▶ FishingBoat.count()
```

```
Out[25]: Price                130
         Boat Type            130
         Manufacturer         120
         Type                 130
         Year Built           130
         Length               129
         Width                129
         Material             114
         Location             130
         Number of views last 7 days 130
         dtype: int64
```

```
In [26]: ▶ FishingBoat.drop(FishingBoat[FishingBoat['Length'] == 0].index , axis = 0,
```

```
In [27]: ▶ FishingBoat.drop(FishingBoat[FishingBoat['Width'] == 0].index , axis = 0, i
```

```
In [28]: ▶ FishingBoat.drop(FishingBoat[FishingBoat['Material'] == 0].index , axis = 0,
```

```
In [29]: ▶ FishingBoat.drop(FishingBoat[FishingBoat['Manufacturer'] == 0].index , axis
```

```
In [30]: ▶ missing_values = FishingBoat.isnull().sum()
```

```
In [31]: ▶ print(missing_values)
```

```
Price                0
Boat Type            0
Manufacturer         10
Type                 0
Year Built           0
Length               1
Width                1
Material             16
Location             0
Number of views last 7 days 0
dtype: int64
```

```
In [32]: ▶ FishingBoat[FishingBoat.isnull().any(axis = 1)]
```

Out[32]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material	
8529	39900	Fishing Boat	AW Yachts power boats	new boat from stock,Unleaded	2020	6.55	2.50	NaN	Switzerland Neuenburg
758	42000	Fishing Boat	Pegazus power boats	Used boat	2020	5.60	2.54	NaN	Switzerland Lake C...
9716	10200	Fishing Boat	AS Marine power boats	Used boat	2020	5.70	2.10	NaN	Italy (LON...
8776	31420	Fishing Boat	Jeanneau power boats	new boat from stock	2019	6.97	2.81	NaN	Canada C...
2005	135000	Fishing Boat	Boston Whaler power boats	new boat from stock,Unleaded	2019	7.75	2.74	NaN	
9787	8900	Fishing Boat	NaN	Used boat	2019	5.00	1.87	Aluminium	Switzerland R...
8	3333	Fishing Boat	Crescent power boats	new boat from stock	2019	3.64	1.37	NaN	Germany B... Boote Ob...
8187	44500	Fishing Boat	Invictus power boats	new boat from stock,Unleaded	2018	6.10	2.40	NaN	Germany Lake C... Ä» k... I...
103	10500	Fishing Boat	Orkney power boats	Used boat	2016	NaN	NaN	NaN	Switzerland
7585	59000	Fishing Boat	Capelli power boats	Used boat,Unleaded	2016	7.80	2.76	NaN	Italy Ä» Ä»
8304	45000	Fishing Boat	Jeanneau power boats	Used boat	2013	6.96	2.78	NaN	Switzerland Lago I... Ä»
58	49500	Fishing Boat	Uttern power boats	Used boat	2007	5.00	2.00	NaN	Denmark S...
7358	65000	Fishing Boat	NaN	Used boat	2007	9.13	3.04	GRP	Italy
9077	25000	Fishing Boat	Bayliner power boats	Used boat,Unleaded	2006	7.00	2.50	NaN	France d'Azur
862	43000	Fishing Boat	Jeanneau power boats	Used boat,Diesel	2004	9.76	3.16	NaN	France H...
9359	18500	Fishing Boat	Saver power boats	Used boat,Unleaded	2003	7.20	2.50	NaN	Italy
5986	130000	Fishing Boat	NaN	Used boat,Diesel	2003	11.73	3.78	GRP	Italy Ä» Ä»
9867	36500	Fishing Boat	Hunter power boats	Used boat	2000	5.00	1.00	NaN	Denmark S...

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material	
8608	35000	Fishing Boat	NaN	Used boat,Diesel	1997	7.75	3.21	GRP	Ital
8337	40000	Fishing Boat	NaN	Used boat,Unleaded	1996	9.18	2.93	GRP	
28	4000	Fishing Boat	NaN	Used boat,Unleaded	1994	5.60	1.58	GRP	Switze Lake Â» Alte
863	43000	Fishing Boat	NaN	Used boat,Unleaded	1992	8.10	2.50	GRP	Italy
6542	95000	Fishing Boat	NaN	Used boat,Diesel	1988	13.50	4.25	GRP	Italy Â
9857	5900	Fishing Boat	Hatecke power boats	Used boat,Unleaded	1985	4.80	1.80	NaN	Ger
9819	6999	Fishing Boat	NaN	Used boat,Unleaded	1974	4.20	1.50	Aluminium	Be
5955	135000	Fishing Boat	NaN	Used boat,Diesel	1971	20.50	5.30	Wood	Nether Gron

In [33]: `FishingBoat.dropna(inplace = True)`

In [34]: `FishingBoat.isnull().sum()`

```
Out[34]: Price      0
         Boat Type   0
         Manufacturer 0
         Type        0
         Year Built   0
         Length      0
         Width       0
         Material     0
         Location     0
         Number of views last 7 days 0
         dtype: int64
```

```
In [35]: ▶ FishingBoat
```

Out[35]:

	Price	Boat Type	Manufacturer	Type	Year Built	Length	Width	Material	Loca
9585	14950	Fishing Boat	Starweld power boats	new boat from stock	2020	5.03	2.08	Aluminium	Switzerl Murter Â» Ker
930	49968	Fishing Boat	EdgeWater power boats	new boat on order,Unleaded	2020	5.70	2.30	GRP	Switzerl Villare
493	29500	Fishing Boat	Linder power boats	new boat from stock,Unleaded	2020	4.60	1.85	Aluminium	Switzerl Â» Biele Â» V S Lattri
420	25950	Fishing Boat	ERC power boats	new boat from stock	2020	5.30	2.00	GRP	Switzerl Â» L Maggiore Quai
409	25000	Fishing Boat	The Captains power boats	new boat on order	2020	6.60	1.85	GRP	Switzerl Â» L Consta Romansl
...
8180	44900	Fishing Boat	Riva Bertram power boats	Used boat,Unleaded	1978	7.54	2.90	GRP	Spair Mallorca Cala c
9646	13000	Fishing Boat	Adec power boats	Used boat,Unleaded	1978	5.30	2.10	GRP	Switzerl Â» L Consta Â» g
8211	44000	Fishing Boat	Riva power boats	Used boat,Unleaded	1976	10.45	3.43	GRP	Italy Â» Tirr
36	3800	Fishing Boat	Hensa power boats	Used boat,Unleaded	1974	5.40	1.67	Plastic	Switzerl Â» Sih
9839	6800	Fishing Boat	Steiner power boats	Used boat,Unleaded	1971	5.60	1.62	GRP	Switzerl Â» L Consta Altenrl

104 rows × 10 columns



```
In [ ]: ▶
```

Now Data for Fishing Boat has been Clean now we have to Visulize boat prices

```
In [42]: ▶ Type = FishingBoat["Manufacturer"]  
views = FishingBoat["Number of views last 7 days"]
```

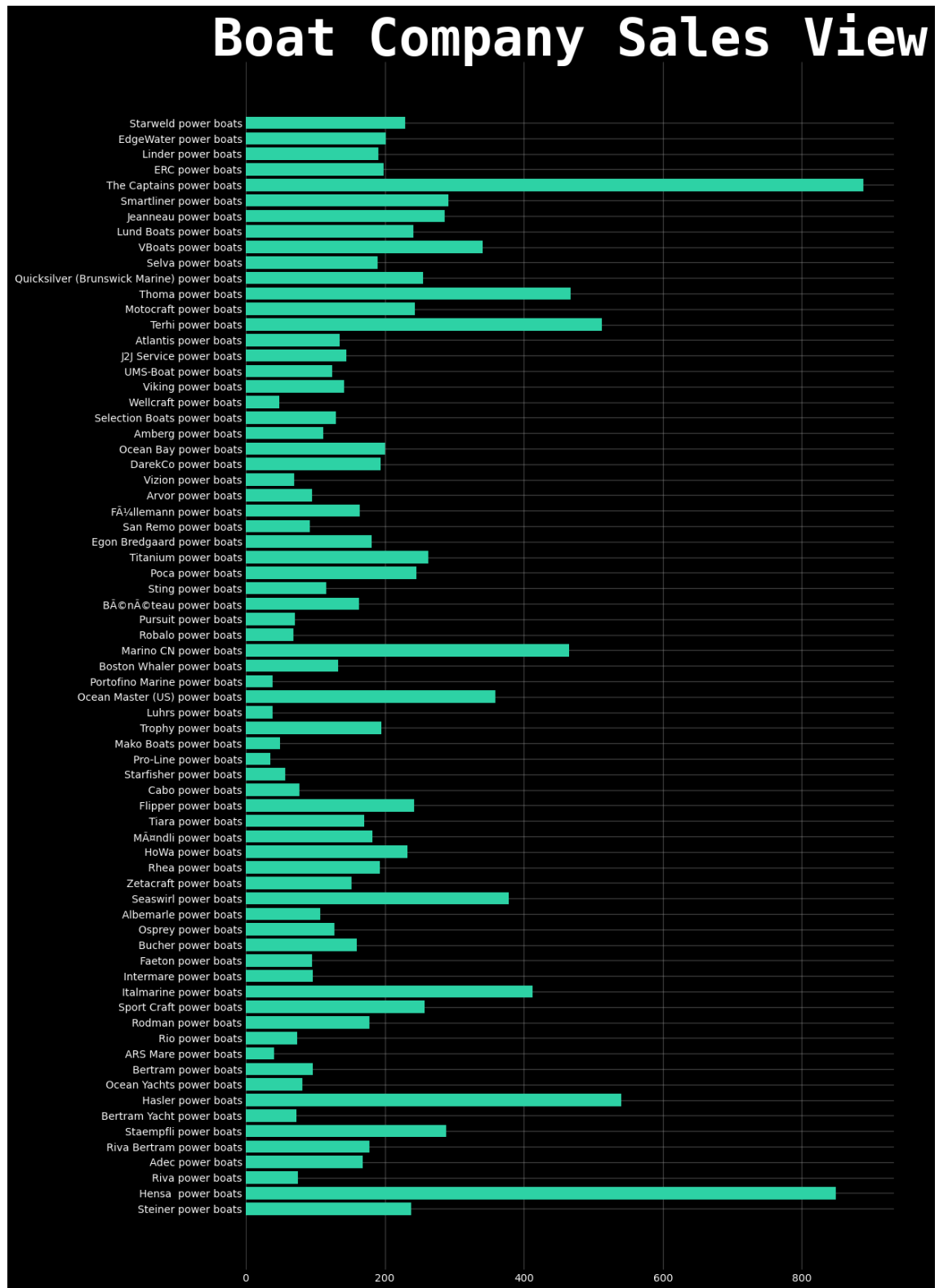


```
In [87]: # setting plot style
plt.style.use('dark_background')
# setting axis
x = FishingBoat["Manufacturer"]
y = FishingBoat["Number of views last 7 days"]
# setting figsize
fig, ax = plt.subplots(figsize = (10,20)) #width , Length
# Horizontal Bar plot
ax.barh(x , y , color = "#2ED4A5")
# Adding grid
ax.grid(color = 'grey' , alpha = 0.5)
# Removing spines/border
pos = ["top" , "bottom" , "left" , "right"]
for i in pos:
    #print(i)
    ax.spines[i].set_visible(False)
# Removing ticks
ax.xaxis.set_ticks_position('none')
ax.yaxis.set_ticks_position('none')

# Sorting In ascending order
ax.invert_yaxis()

# Adding title
ax.set_title("Boat Company Sales View" , loc = 'center',\
             fontdict = {'family' : 'monospace' , 'size' : 50 , 'weight':'bold'})
# Displaying Graph
plt.show
```

Out[87]: <function matplotlib.pyplot.show(close=None, block=None)>



In []: ▶