Boat Sales

This data set is about the sales data of boats.

01. Data Source

This data set is from the Kaggle.com website.

https://www.kaggle.com/datasets/karthikbhandary2/boat-sales/data

Kaggle, operating under Google LLC, serves as a platform and online community for data scientists and machine learning practitioners. It facilitates users in discovering and sharing datasets, creating models within a web-based data science environment, collaborating with fellow professionals, and participating in competitions aimed at addressing data science challenges.

This data set is all about the popularity of the boats. It has 10 columns. It has details of the boats regarding the year it was built the type of boat, price and much more.

Columns:

Price
Character, boat price listed in different currencies (e.g. EUR, Â£, CHF etc.) on the website

Boat Type
Character, type of the boat

Manufacturer
Character, manufacturer of the boat

Type
Character, condition of the boat and engine type(e.g. Diesel, Unleaded, etc.)

Year Built
Numeric, year of the boat built

Length
Numeric, length in meter of the boat

Width
Numeric, width in meter of the boat

Material
Character, material of the boat (e.g. GRP, PVC, etc.)

Location
Character, location of the boat is listed

Number of views last 7 days
Numeric, number of the views of the list last 7 days

Why I have choosen this data set?

I used to sail a lot with my husband, we also had our own boat on Balaton, the largest in Hungary, that's why I chose this line of data

02. Data Profile

Data Cleaning

I used phyton to perform the data cleaning, with Jupiter notebook. Missing values were found in the following columns: manufacturer, material, location, width. I deleted the rows with the missing values from the database.

Number of Missing Values:

```
Price                          0
Boat Type                      0
Manufacturer                1338
Type                           6
Year Built                     0
Length                         9
Width                         56
Material                    1749
Location                      36
Number of views last 7 days    0
```

I did not find any duplicate.

When examining the outliers in the bank database, I analyzed three numerical columns using statistical methods: the 'Year Built', 'Length', and 'Width' columns. There was also a fourth numerical column in the database, but since it represented the number of internet views, there was no point in investigating an outlier using mathematical methods, as a very popular ship can produce extreme outlier views. Here, I only checked that there were no completely unrealistic values in the data. When examining the outliers, it became apparent that many ships had a zero written for their year of construction. This was obviously not missing data but outliers. However, in practice, we can consider this as missing data. I entered this in such a way that I filled in the median instead of zero.

Descriptive Statistical Analysis

Columns and basic info about dataframe:

```
Index: 7019 entries, 1 to 9887
Data columns (total 10 columns):
 #   Column                        Non-Null Count  Dtype
---  ------                        --------------  -----
 0   Price                         7019 non-null   object
 1   Boat Type                     7019 non-null   object
 2   Manufacturer                  7019 non-null   object
 3   Type                          7019 non-null   object
 4   Year Built                    7019 non-null   int64
 5   Length                        7019 non-null   float64
 6   Width                         7019 non-null   float64
 7   Material                      7019 non-null   object
 8   Location                      7019 non-null   object
 9   Number of views last 7 days   7019 non-null   int64
dtypes: float64(2), int64(2), object(6)
```

Descriptive statistical analysis of numerical columns:

	Year Built	Length	Width	Number of views last 7 days
count	7019.000000	7019.000000	7019.000000	7019.000000
mean	2006.867218	11.036492	3.433109	159.909104
std	12.262252	5.144034	1.119766	167.153110
min	1901.000000	1.980000	0.860000	13.000000
25%	2001.000000	7.280000	2.540000	72.000000
50%	2008.000000	9.950000	3.200000	112.000000
75%	2018.000000	13.500000	4.180000	185.000000
max	2021.000000	56.000000	16.000000	3263.000000

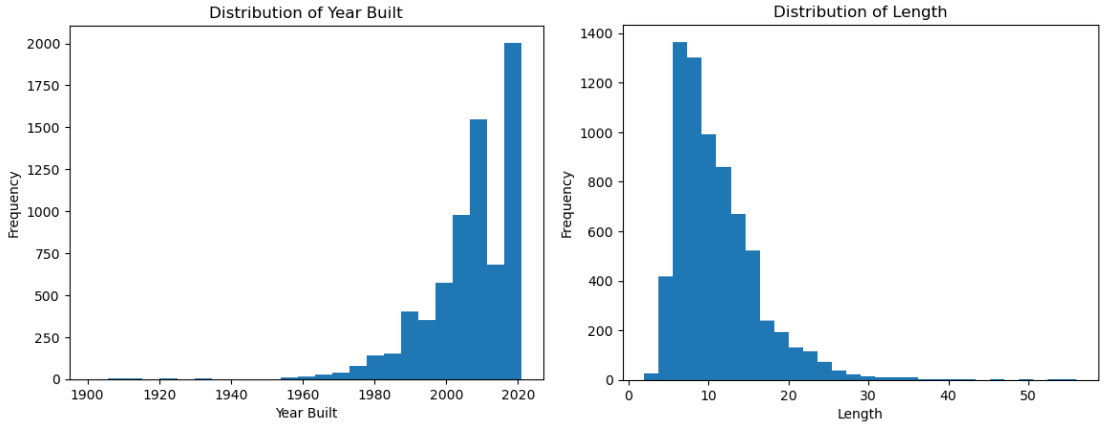
Histograms of the numerical columns:

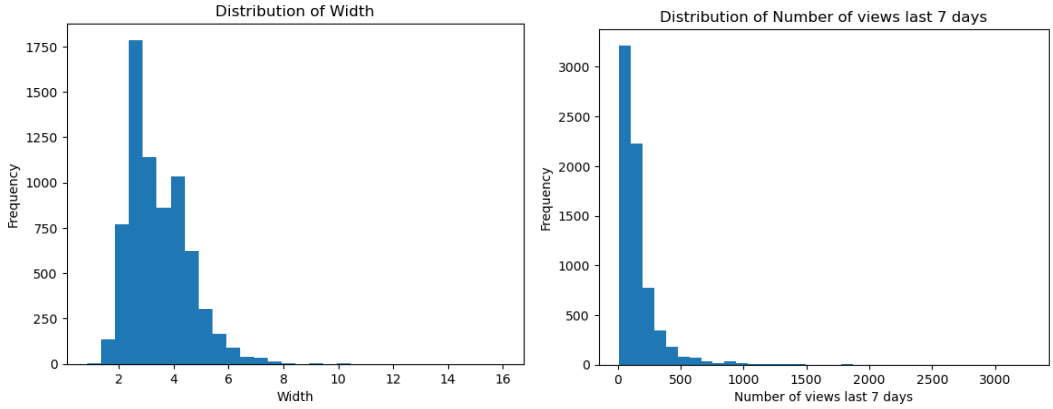
Year Built: left skewed distribution

Length: right skewed distribution

Width: right skewed distribution

Number of Views: right skewed distribution





Limitations and Data Ethics

LIMITATIONS:

1. Data Source Reliability:

- The dataset is obtained from Kaggle, a platform for data scientists. While Kaggle is reputable, there might be variations in data quality based on individual contributors. No Warranty: CC0: Public Domain license includes a disclaimer stating that the work is provided "as is" without any warranties, which means the creator does not provide any guarantees or assurances regarding the quality or fitness for a particular purpose of the work.

2. Data Cleaning Decisions:

- The decision to delete rows with missing values might lead to a loss of potentially valuable information.

ETHICAL CONSIDERATIONS:

1. Privacy Concerns:

- The dataset involves information about boats and their characteristics. While it may not contain personal information directly, sharing similar datasets with more sensitive data could pose privacy concerns.

2. Data Ownership and Attribution:

- The Kaggle dataset has CC0: Public Domain licence. This means that the work is placed in the public domain, and anyone can use, modify, distribute, or otherwise utilize the work for any purpose, without any restrictions or requirements. The creator explicitly states that they have waived all copyright and related rights, effectively placing the work in the public domain. No Restrictions: Users can copy, modify, distribute, and perform the work, even for commercial purposes, without seeking permission from or providing attribution to the original creator. Global Applicability: The CC0 license is intended to be effective worldwide, to the extent permitted by law.

Research Questions

You are working as a data analyst for a yacht and boat sales website. The marketing team is preparing a weekly newsletter for boat owners. The newsletter is designed to help sellers to get more views of their boat, as well as stay on top of market trends. They would like me to take a look at the recent data and get some insights.

The possible questions that we can ask ourselves are:

1. characteristics of the most viewed boats in the last 7 days
2. is it the most expensive boats that get the most views?
3. What are the geographical position of the most viewed boats?