Analysis Report of Titanic (EDA)

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Company: -Elevatelabs(Internship)

1. Introduction

- Goal: Understand patterns in survival based on features like age, sex, passenger class, etc.
- Dataset: Titanic dataset from Kaggle or seaborn library

2. Libraries

We used `pandas`, `numpy`, `seaborn`, and `matplotlib` for data handling and visualization.

3. Data Loading and Cleaning

Missing values in `age` were filled with the median, and missing `embarked` rows were dropped.

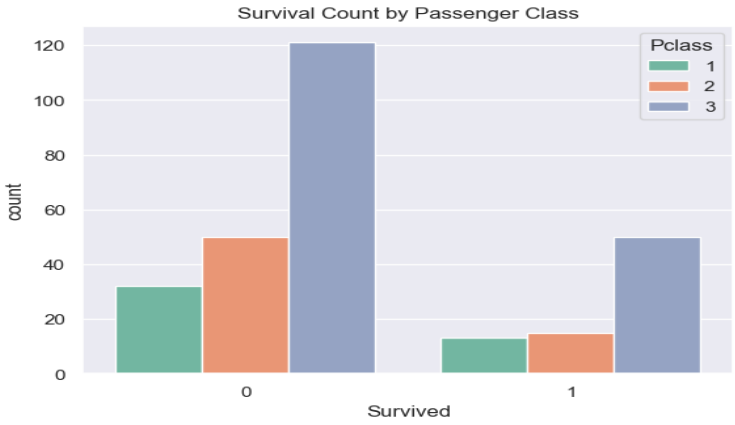
4. Analysis

- **Survival rate:** More females survived than males.
- **Average: Survival** rate, Age
- **Class:** First-class passengers had the highest survival rates.
- **Age:** Children had better survival rates.
- **Sex:** Gender was a major survival factor.

5. Visualizations

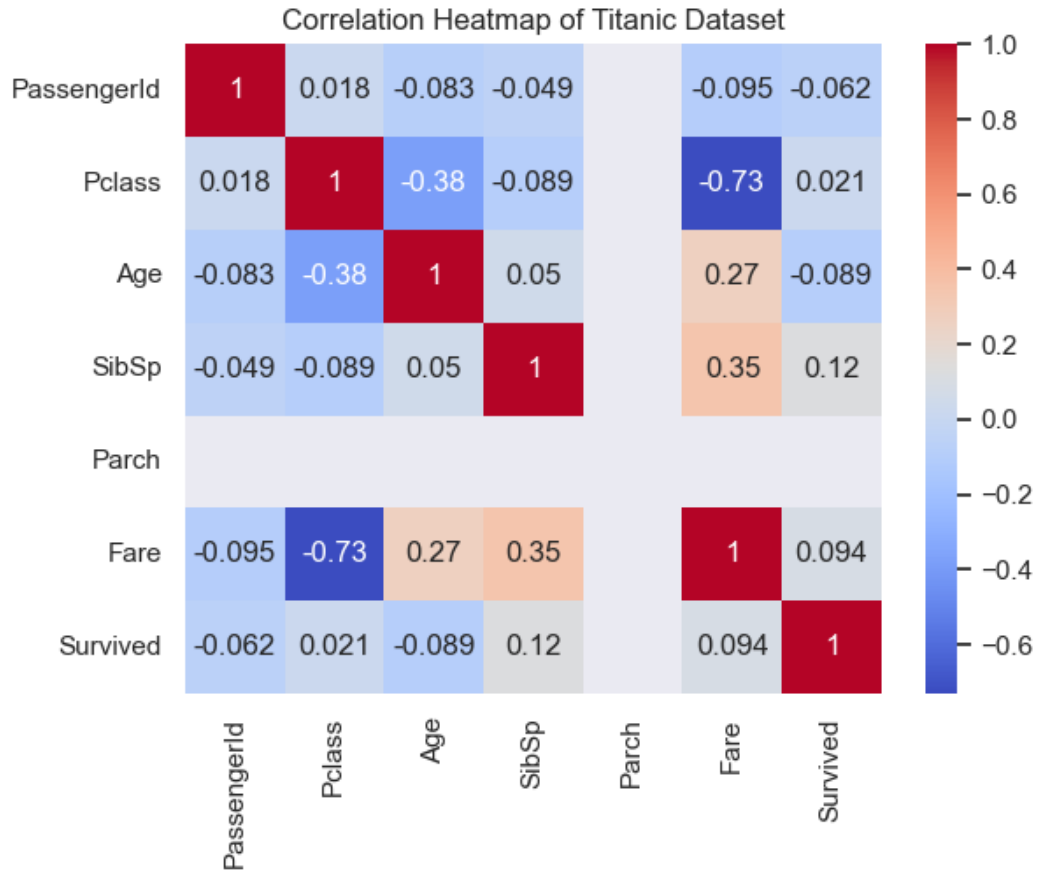
	PassengerId	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked	Survived
0	892	3	Kelly, Mr. James	male	34.5	0	0	330911	7.8292	B57 B59 B63 B66	Q	0
1	893	3	Wilkes, Mrs. James (Ellen Needs)	female	47.0	1	0	363272	7.0000	B57 B59 B63 B66	S	1
2	895	3	Wirz, Mr. Albert	male	27.0	0	0	315154	8.6625	B57 B59 B63 B66	S	0
3	897	3	Svensson, Mr. Johan Cervin	male	14.0	0	0	7538	9.2250	B57 B59 B63 B66	S	0
4	898	3	Connolly, Miss. Kate	female	30.0	0	0	330972	7.6292	B57 B59 B63 B66	Q	1
5	900	3	Abrahim, Mrs. Joseph (Sophie Halaut Easu)	female	18.0	0	0	2657	7.2292	B57 B59 B63 B66	C	1
6	901	3	Davies, Mr. John Samuel	male	21.0	2	0	A/4 48871	24.1500	B57 B59 B63 B66	S	0
7	902	3	Ilieff, Mr. Ylio	male	27.0	0	0	349220	7.8958	B57 B59 B63 B66	S	0
8	903	1	Jones, Mr. Charles Cresson	male	46.0	0	0	694	26.0000	B57 B59 B63 B66	S	0
9	906	1	Chaffee, Mrs. Herbert Fuller (Carrie Constance Toogood)	female	47.0	1	0	W.E.P. 5734	61.1750	E31	S	1
10	907	2	del Carlo, Mrs. Sebastiano (Argenia Genovesi)	female	24.0	1	0	SC/PARIS 2167	27.7208	B57 B59 B63 B66	C	1
11	908	2	Keane, Mr. Daniel	male	35.0	0	0	233734	12.3500	B57 B59 B63 B66	Q	0
12	909	3	Assaf, Mr. Gerios	male	21.0	0	0	2692	7.2250	B57 B59 B63 B66	C	0
13	910	3	Ilmakangas, Miss. Ida Livija	female	27.0	1	0	STON/O2. 3101270	7.9250	B57 B59 B63 B66	S	1
14	911	3	Assaf Khalil, Mrs. Mariana (Miriam")"	female	45.0	0	0	2696	7.2250	B57 B59 B63 B66	C	1
15	914	1	Flegenheim, Mrs. Alfred (Antoinette)	female	27.0	0	0	PC 17598	31.6833	B57 B59 B63 B66	S	1
16	917	3	Robins, Mr. Alexander A	male	50.0	1	0	A/5. 3337	14.5000	B57 B59 B63 B66	S	0
17	919	3	Daher, Mr. Shedid	male	22.5	0	0	2698	7.2250	B57 B59 B63 B66	C	0
18	920	1	Brady, Mr. John Bertram	male	41.0	0	0	113054	30.5000	A21	S	0
19	921	3	Samaan, Mr. Elias	male	27.0	2	0	2662	21.6792	B57 B59 B63 B66	C	0
20	922	2	Louch, Mr. Charles Alexander	male	50.0	1	0	SC/AH 3085	26.0000	B57 B59 B63 B66	S	0

Countplots



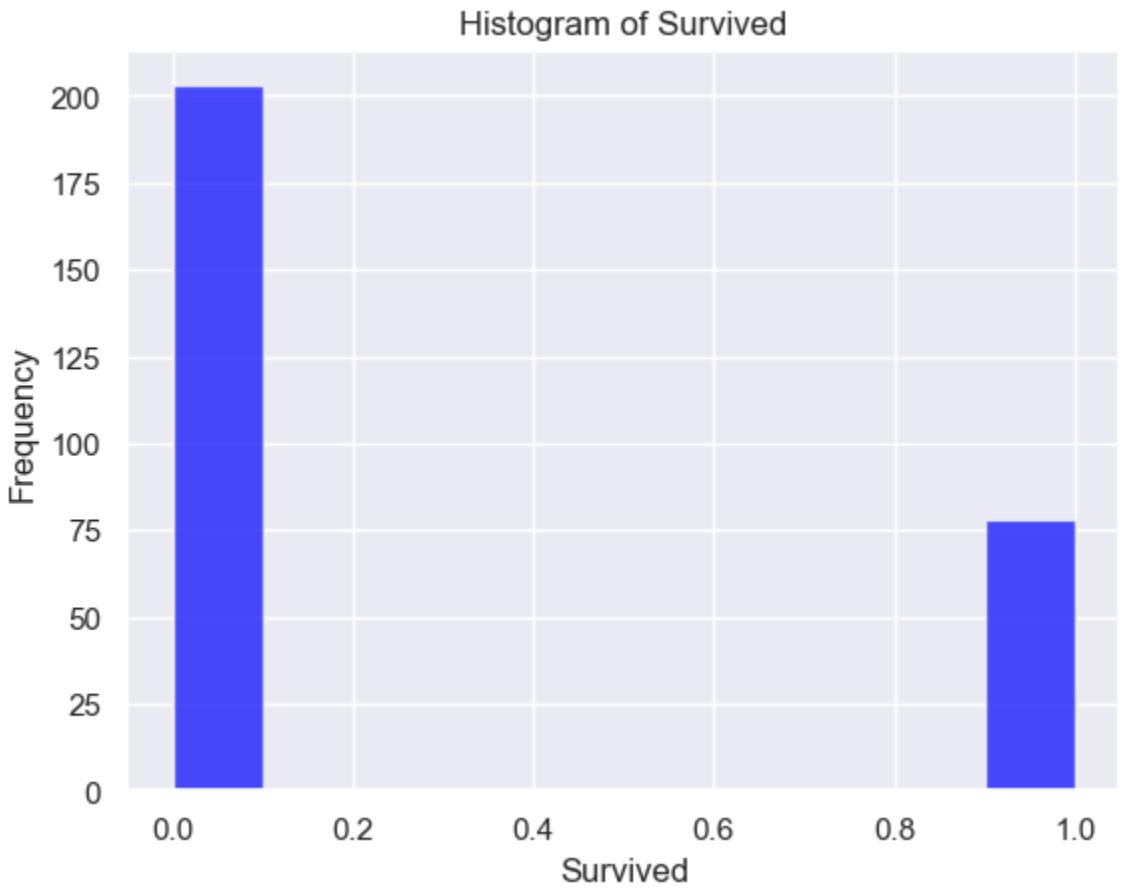
Count plots based on the Survival Count by Passenger Class.

Heatmap



Correlation Heatmap of Titanic Dataset

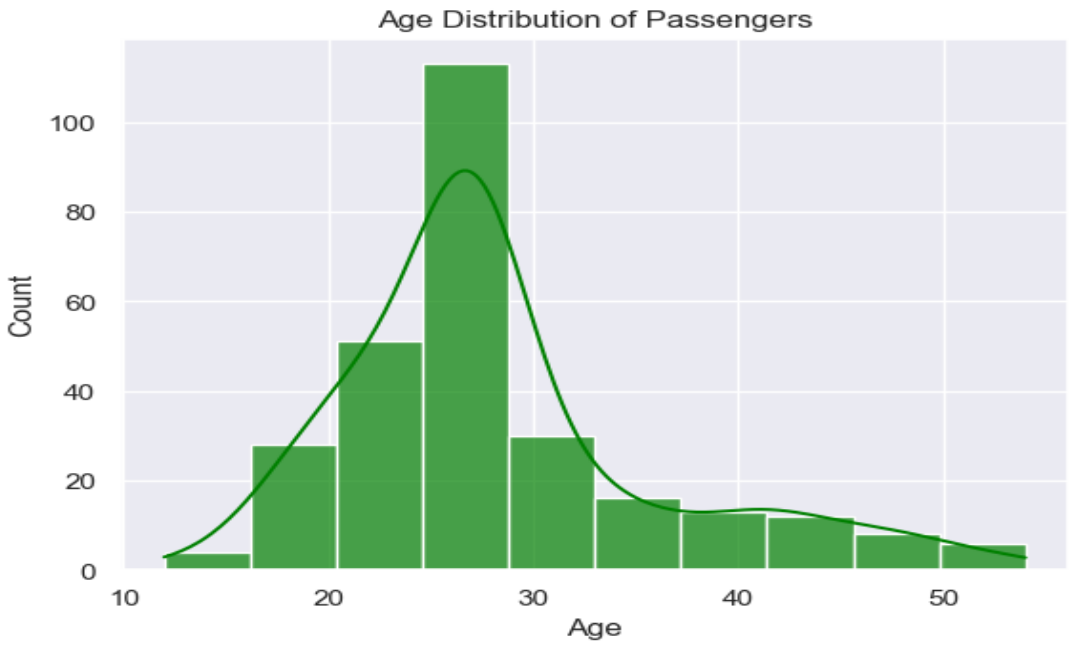
Histogram

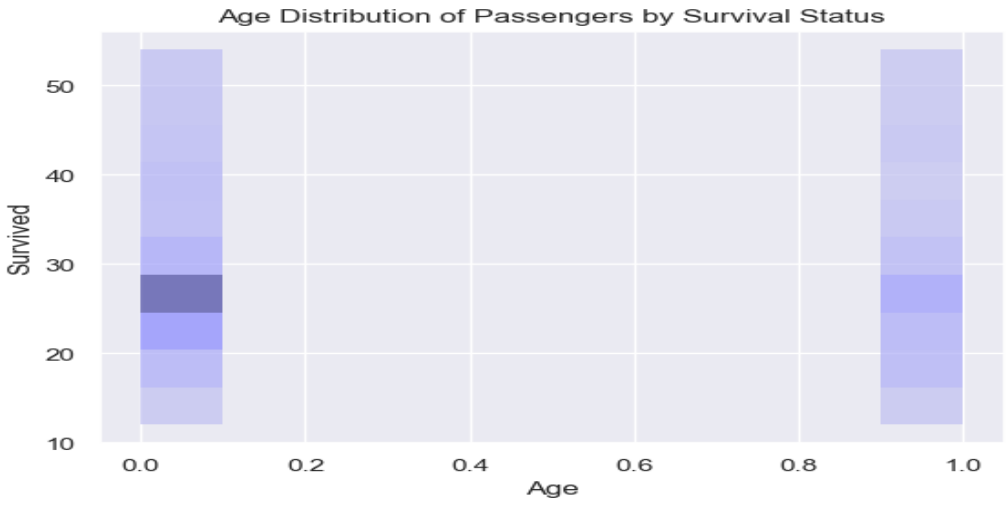


Histogram of Survived

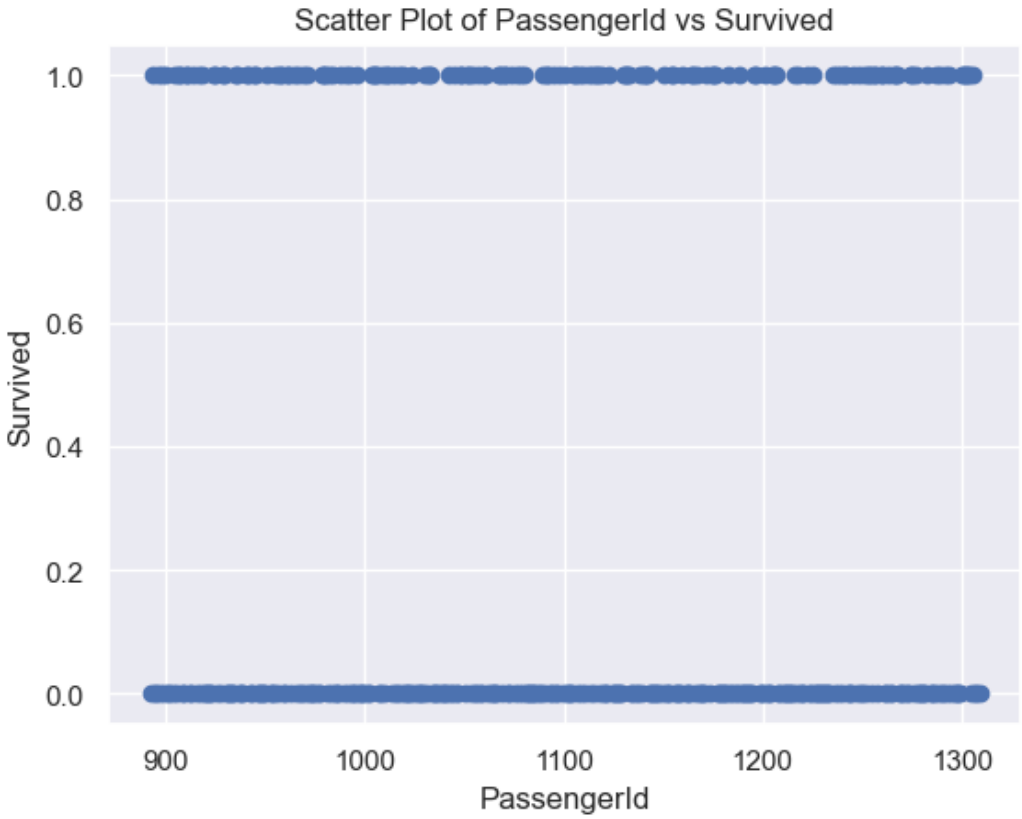
Histogram

Average age distribution of Passengers



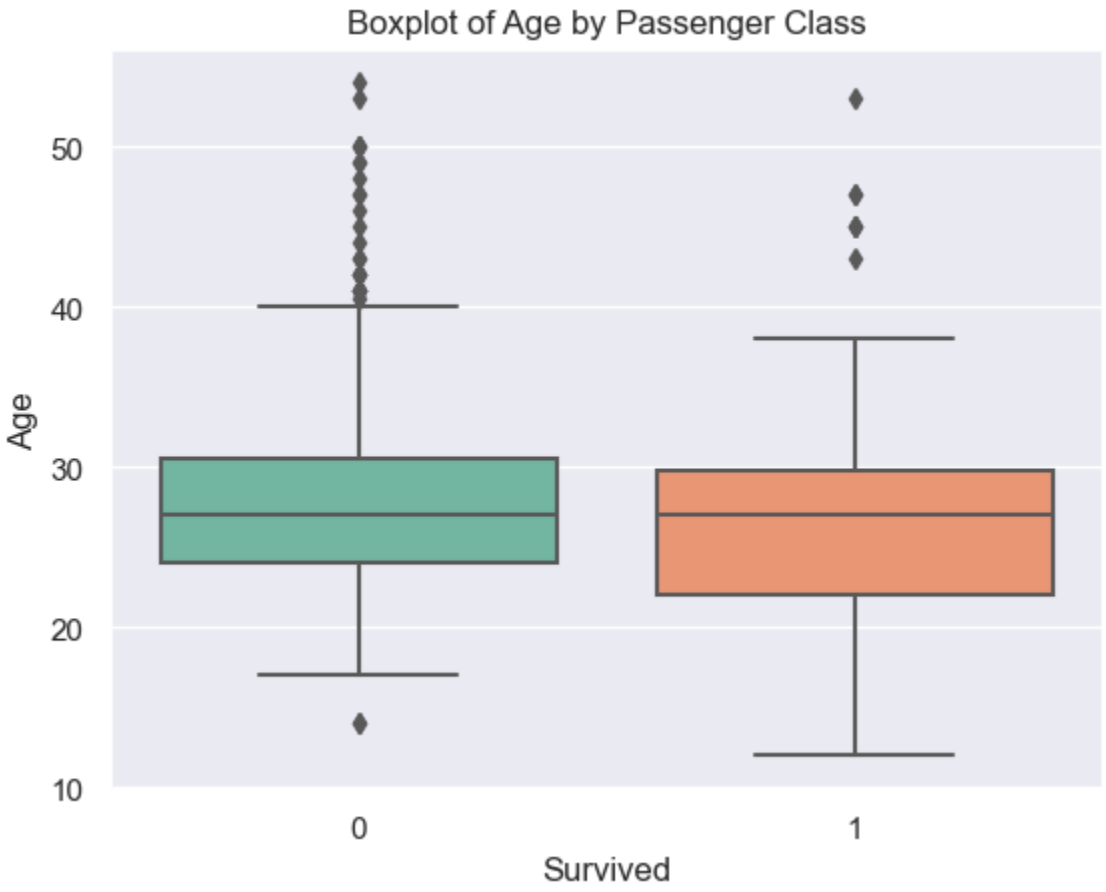


Scatter Plot



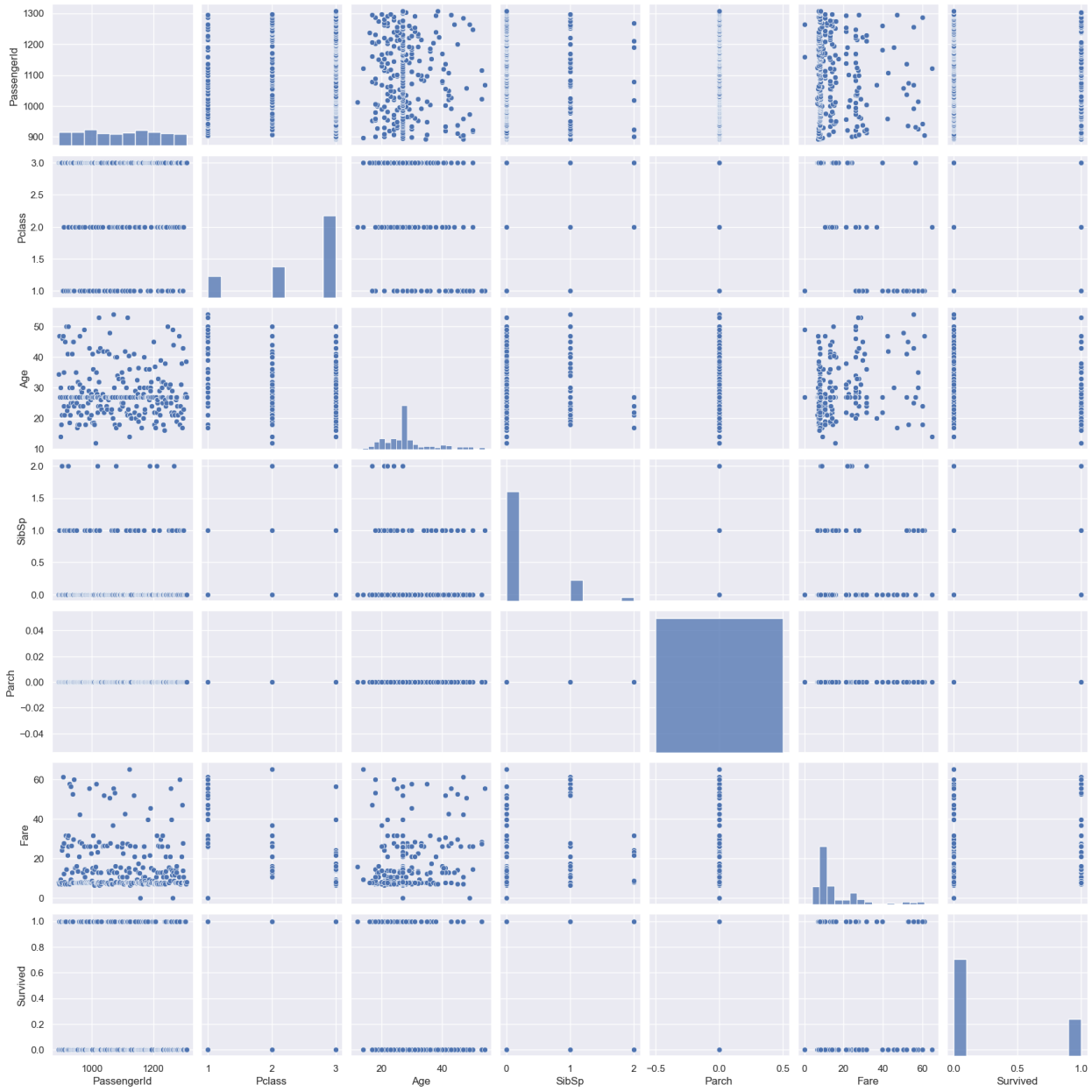
Scatterplot base on the Survived and PassengerId

Boxplot:-

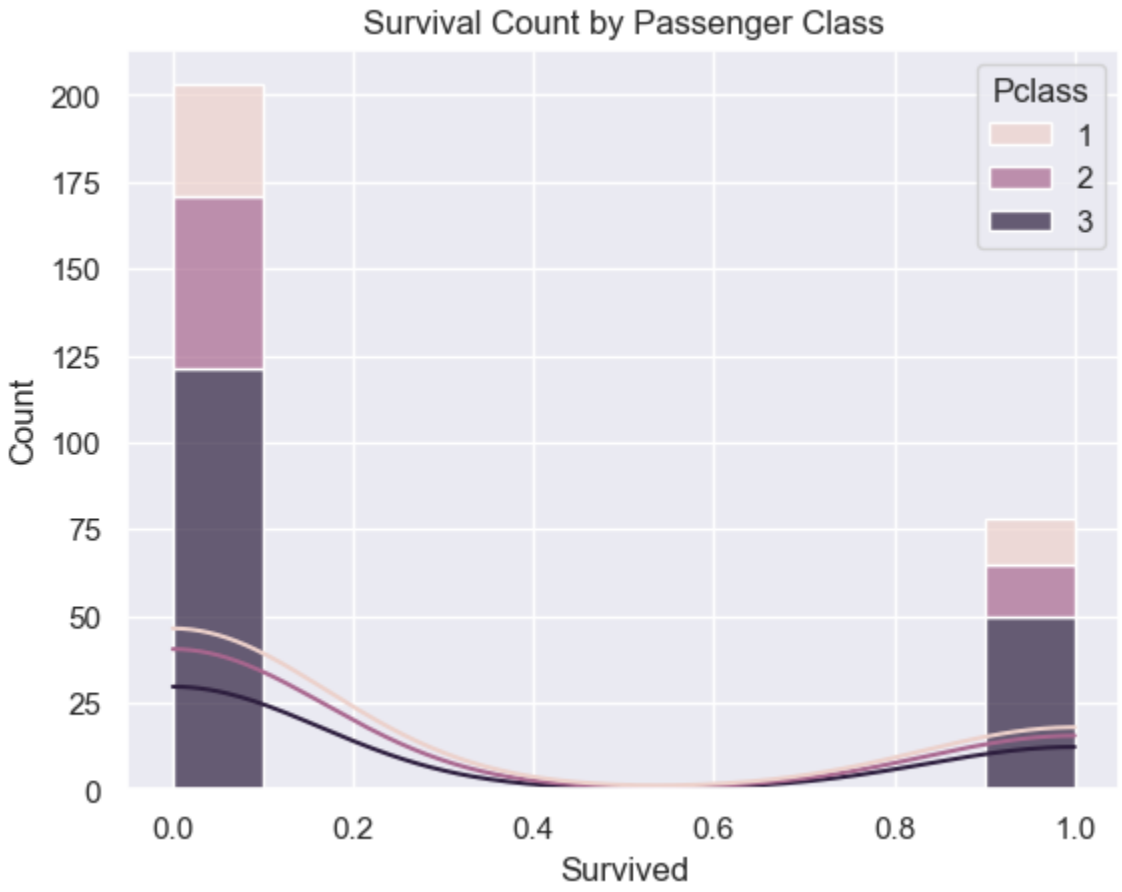


Boxplot on the Age and survived rate

Pairplot



Pairplot on Total dataset



Survived rate based on the passenger class

6. Conclusion

The analysis shows survival was strongly associated with gender, class, and age.