

Experiment 11

Aim: Data Cleaning and Preprocessing with Pandas: Use the Pandas library in Python to clean and preprocess large datasets, addressing issues such as missing values, outliers, and inconsistent data.

Dataset Preprocessing and Visualization:

Head:

```
/ived pclass      sex    age   sibsp  parch     fare embarked
0      3 male  22.000000 1.000000 7.250000 S
1      1 female 38.000000 1.000000 71.283300 C
1      3 female 26.000000 0.000000 7.925000 S
1      1 female 35.000000 1.000000 53.100000 S
0      3 male  35.000000 0.000000 8.050000 S
> adult_male deck embark_town alive alone
1      True  NaN Southampton no False
1     False   C Cherbourg yes False
1     False  NaN Southampton yes True
1     False   C Southampton yes False
1      True  NaN Southampton no True
```

Fig 1: Dataset Printing

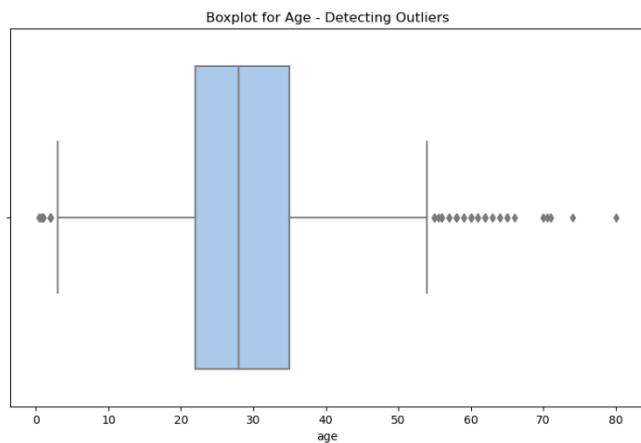


Fig 2: Box Plot for Detecting Outliers

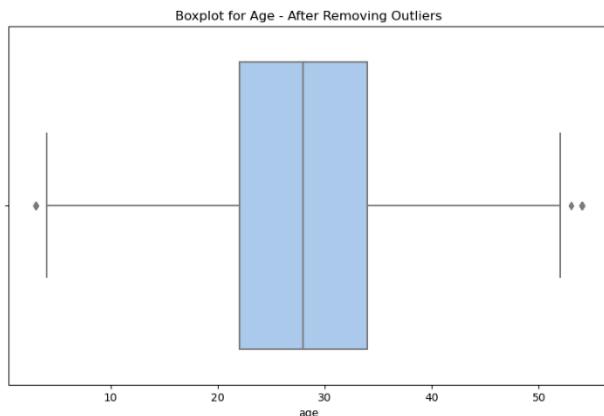


Fig 3: Box Plot after Removing Outliers

Cleaned Dataset Statistics:

	survived	pclass	age	sibsp	parch	fare
count	825.000000	825.000000	825.000000	825.000000	825.000000	825.000000
mean	0.380606	2.341818	28.515152	0.507879	0.357576	31.483615
std	0.485830	0.824096	10.177256	1.090670	0.798599	49.956429
min	0.000000	1.000000	3.000000	0.000000	0.000000	0.000000
25%	0.000000	2.000000	22.000000	0.000000	0.000000	7.895800
50%	0.000000	3.000000	28.000000	0.000000	0.000000	13.416700
75%	1.000000	3.000000	34.000000	1.000000	0.000000	30.070800
max	1.000000	3.000000	54.000000	8.000000	6.000000	512.329200

Fig 4: Descriptive Statistics after Preprocessing

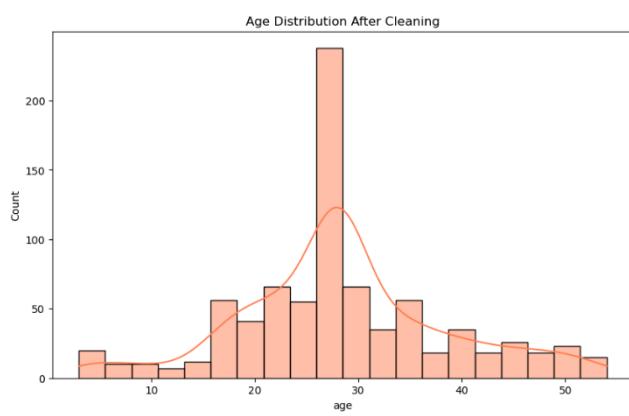


Fig 5: Age Distribution after Cleaning

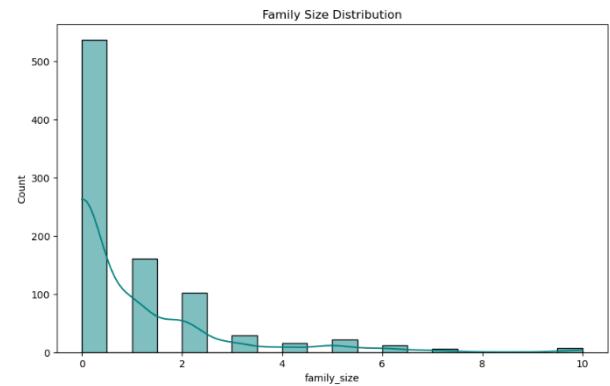


Fig 6: Family Size Distribution