

```

import pandas as pd

# Read CSV file into DataFrame
df = pd.read_csv('/content/tested.csv')

# Display the first few rows of the DataFrame
print("Original DataFrame:")
print(df.head())

# Handling missing values
df_filled = df.fillna(0)
print("\nDataFrame with Missing Values Filled:")
print(df_filled.head())

# Removing duplicates
df_no_duplicates = df.drop_duplicates()
print("\nDataFrame without Duplicates:")
print(df_no_duplicates.head())

# Filtering data (example: passengers older than 30)
filtered_df = df[df['Age'] > 30]
print("\nFiltered DataFrame (Age > 30):")
print(filtered_df.head())

# Sorting data (example: by Age)
sorted_df = df.sort_values(by='Age')
print("\nSorted DataFrame by Age:")
print(sorted_df.head())

# Grouping data (example: mean Fare by Pclass)
grouped_df = df.groupby('Pclass')['Fare'].mean()
print("\nGrouped DataFrame by Pclass (mean Fare):")
print(grouped_df.head())

```

→ Original DataFrame:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch
0	892	0	3	Kelly, Mr. James	male	34.5	0	0
1	893	1	3	Wilkes, Mrs. James (Ellen Needs)	female	47.0	1	0
2	894	0	2	Myles, Mr. Thomas Francis	male	62.0	0	0
3	895	0	3	Wirz, Mr. Albert	male	27.0	0	0
4	896	1	3	Hirvonen, Mrs. Alexander (Helga E Lindqvist)	female	22.0	1	1

	Ticket	Fare	Cabin	Embarked
0	330911	7.8292	NaN	Q
1	363272	7.0000	NaN	S
2	240276	9.6875	NaN	Q
3	315154	8.6625	NaN	S
4	3101298	12.2875	NaN	S

DataFrame with Missing Values Filled:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch
0	892	0	3	Kelly, Mr. James	male	34.5	0	0
1	893	1	3	Wilkes, Mrs. James (Ellen Needs)	female	47.0	1	0
2	894	0	2	Myles, Mr. Thomas Francis	male	62.0	0	0
3	895	0	3	Wirz, Mr. Albert	male	27.0	0	0
4	896	1	3	Hirvonen, Mrs. Alexander (Helga E Lindqvist)	female	22.0	1	1

	Ticket	Fare	Cabin	Embarked
0	330911	7.8292	0	Q
1	363272	7.0000	0	S
2	240276	9.6875	0	Q
3	315154	8.6625	0	S
4	3101298	12.2875	0	S

DataFrame without Duplicates:

```
PassengerId  Survived  Pclass \
0            892       0      3
1            893       1      3
2            894       0      2
3            895       0      3
4            896       1      3
```

```
          Name    Sex   Age  SibSp  Parch \
0     Kelly, Mr. James    male  34.5      0      0
1  Wilkes, Mrs. James (Ellen Needs)  female  47.0      1      0
2     Myles, Mr. Thomas Francis    male  62.0      0      0
3        Wirz, Mr. Albert    male  27.0      0      0
```

Filtered DataFrame (Age > 30):

```
PassengerId  Survived  Pclass          Name    Sex \
0            892       0      3    Kelly, Mr. James    male
1            893       1      3  Wilkes, Mrs. James (Ellen Needs)  female
2            894       0      2    Myles, Mr. Thomas Francis    male
11           903       0      1    Jones, Mr. Charles Cresson    male
13           905       0      2    Howard, Mr. Benjamin    male
```

```
  Age  SibSp  Parch  Ticket    Fare Cabin Embarked
0  34.5      0      0  330911  7.8292   NaN      Q
1  47.0      1      0  363272  7.0000   NaN      S
2  62.0      0      0  240276  9.6875   NaN      Q
11 46.0      0      0      694  26.0000   NaN      S
13 63.0      1      0  24065   26.0000   NaN      S
```

Sorted DataFrame by Age:

```
PassengerId  Survived  Pclass          Name \
354          1246       1      3  Dean, Miss. Elizabeth Gladys Millvina ""
201          1093       0      3  Danbom, Master. Gilbert Sigvard Emanuel
281          1173       0      3    Peacock, Master. Alfred Edward
307          1199       0      3      Aks, Master. Philip Frank
250          1142       1      2    West, Miss. Barbara J
```

```
  Sex   Age  SibSp  Parch          Ticket    Fare Cabin Embarked
354  female  0.17      1      2      C.A. 2315  20.575   NaN      S
201  male   0.33      0      2      347080  14.400   NaN      S
281  male   0.75      1      1  SOTON/O.Q. 3101315  13.775   NaN      S
307  male   0.83      0      1      392091  9.350   NaN      S
250  female  0.92      1      2      C.A. 34651  27.750   NaN      S
```

Grouped DataFrame by Pclass (mean Fare):

```
Pclass
1    94.280297
2    22.202104
-    ...
```