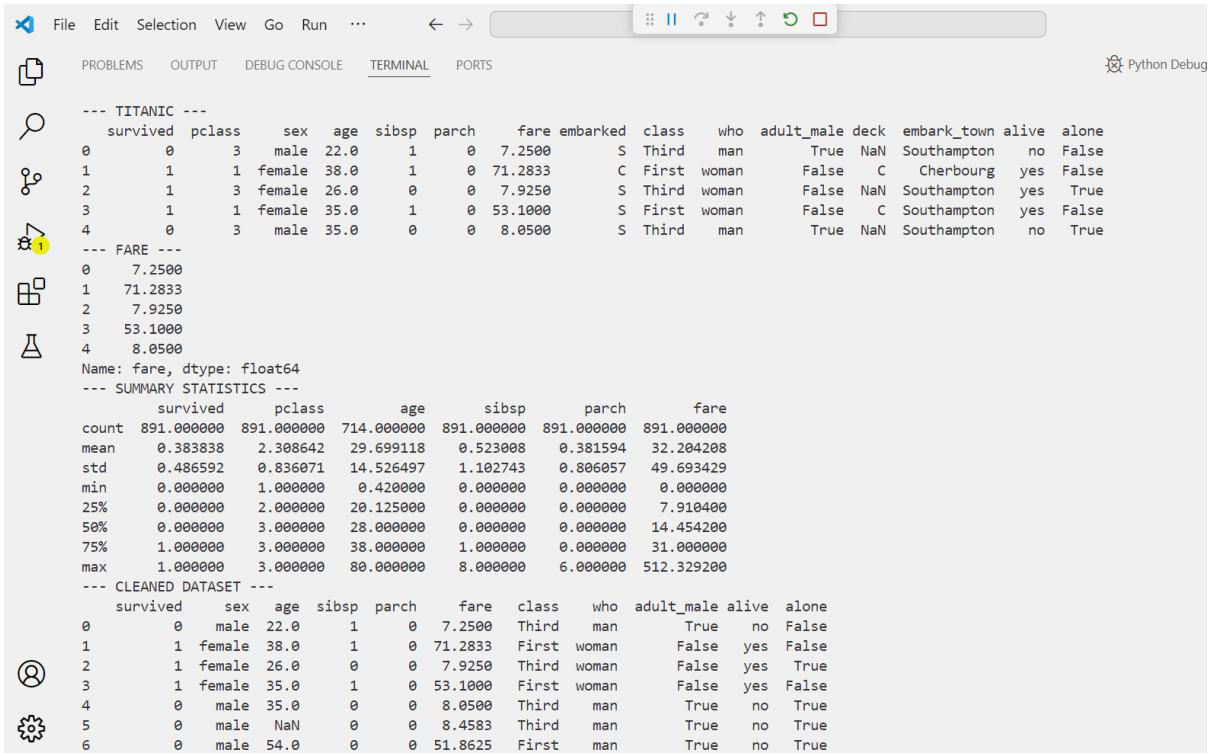
```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np  # Import NumPy library

# Load the Titanic dataset
titanic = sns.load_dataset("titanic")

# Display basic information about the dataset
print("--- TITANIC ---")
print(titanic.head())  # Display the first few rows of the dataset

# Extract and print the 'fare' column
x = titanic["fare"]
print("--- FARE ---")
print(x.head())

# Display summary statistics of the dataset
print("--- SUMMARY STATISTICS ---")
print(titanic.describe())

# Data cleanup: Remove unnecessary columns
titanic_cleaned = titanic.drop(['pclass', 'embarked', 'deck', 'embark_town'], axis=1)
print("--- CLEANED DATASET ---")
print(titanic_cleaned.head(15))  # Display the cleaned dataset

# Display information about the cleaned dataset
print("--- CLEANED DATASET INFO ---")
print(titanic_cleaned.info())

# Check for missing values in the cleaned dataset
print("--- MISSING VALUES ---")
```

```
print(titanic_cleaned.isnull().sum())

# Exclude non-numeric columns for correlation computation
numeric_columns = titanic_cleaned.select_dtypes(include=[np.number]).columns
correlation_matrix = titanic_cleaned[numeric_columns].corr()

# Display correlation matrix
print("--- CORRELATION MATRIX ---")
print(correlation_matrix)

# Visualize age distribution using a histogram
a1 = titanic['age'].dropna()  # Drop missing values from the 'age' column
sns.histplot(a1, kde=True)
plt.title('Age Distribution')
plt.xlabel('Age')
plt.show()

# Visualize fare distribution using a histogram
a2 = titanic['fare'].dropna()  # Drop missing values from the 'fare' column
sns.histplot(a2, kde=True)
plt.title('Fare Distribution')
plt.xlabel('Fare')
plt.show()

# Visualize number of parents/children aboard using a count plot
sns.countplot(x='parch', data=titanic)
plt.title('Number of Parents/Children Aboard')
plt.xlabel('Number of Parents/Children')
plt.show()
```

OUTPUT -



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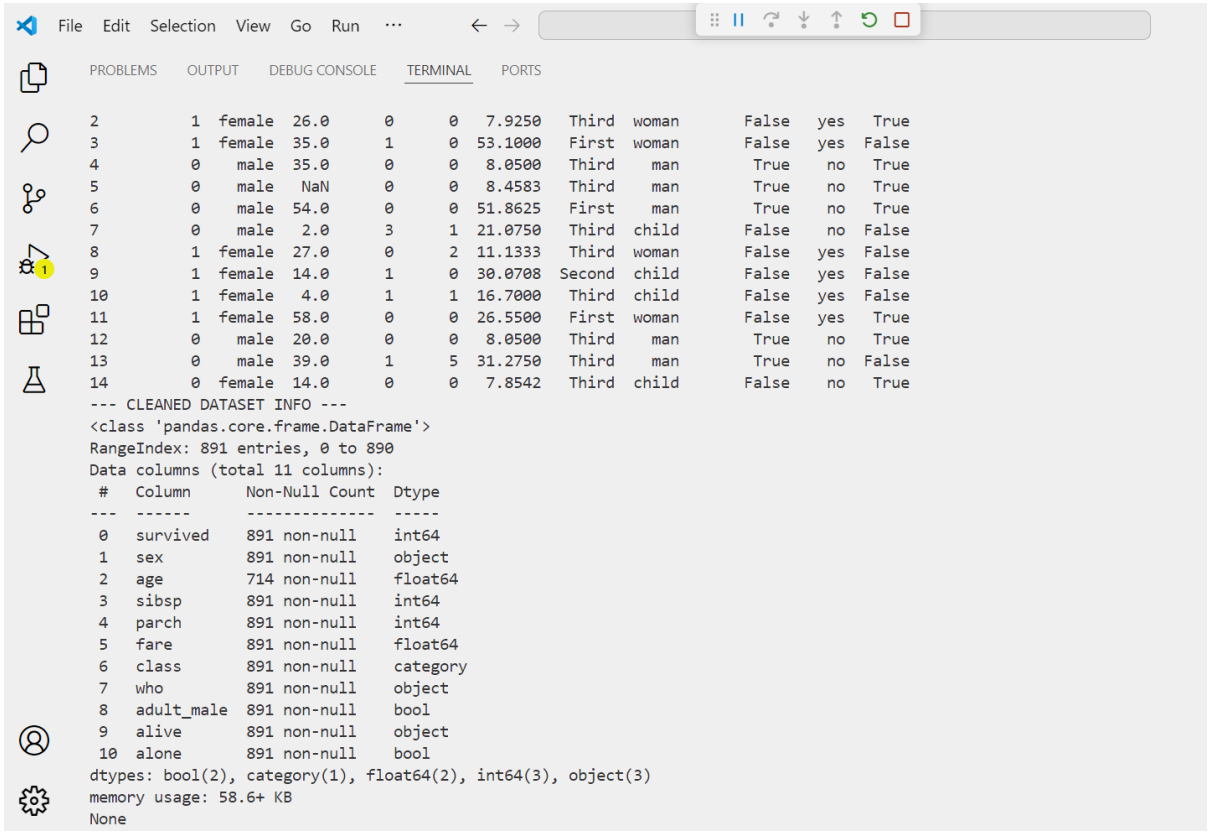
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug

```
--- TITANIC ---
   survived  pclass     sex   age  sibsp  parch     fare embarked  class    who  adult_male deck  embark_town alive  alone
0         0       3    male  22.0      1      0   7.2500        S  Third    man        True  NaN  Southampton    no  False
1         1       1  female  38.0      1      0  71.2833        C  First  woman       False    C    Cherbourg   yes  False
2         1       3  female  26.0      0      0   7.9250        S  Third  woman       False  NaN  Southampton   yes   True
3         1       1  female  35.0      1      0  53.1000        S  First  woman       False    C  Southampton   yes  False
4         0       3    male  35.0      0      0   8.0500        S  Third    man        True  NaN  Southampton    no   True
--- FARE ---
0     7.2500
1    71.2833
2     7.9250
3    53.1000
4     8.0500
Name: fare, dtype: float64
--- SUMMARY STATISTICS ---
         survived      pclass         age       sibsp       parch        fare
count  891.000000  891.000000  714.000000  891.000000  891.000000  891.000000
mean     0.383838    2.308642   29.699118    0.523008    0.381594   32.204208
std      0.486592    0.836071   14.526497    1.102743    0.806057   49.693429
min      0.000000    1.000000    0.420000    0.000000    0.000000    0.000000
25%      0.000000    2.000000   20.125000    0.000000    0.000000    7.910400
50%      0.000000    3.000000   28.000000    0.000000    0.000000   14.454200
75%      1.000000    3.000000   38.000000    1.000000    0.000000   31.000000
max      1.000000    3.000000   80.000000    8.000000    6.000000  512.329200
--- CLEANED DATASET ---
    survived     sex   age  sibsp  parch     fare   class    who  adult_male alive  alone
0          0    male  22.0      1      0   7.2500   Third    man        True    no  False
1          1  female  38.0      1      0  71.2833   First  woman       False   yes  False
2          1  female  26.0      0      0   7.9250   Third  woman       False   yes   True
3          1  female  35.0      1      0  53.1000   First  woman       False   yes  False
4          0    male  35.0      0      0   8.0500   Third    man        True    no   True
5          0    male   NaN      0      0   8.4583   Third    man        True    no   True
6          0    male  54.0      0      0  51.8625   First    man        True    no   True
```



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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
2          1  female  26.0      0      0   7.9250   Third  woman       False   yes   True
3          1  female  35.0      1      0  53.1000   First  woman       False   yes  False
4          0    male  35.0      0      0   8.0500   Third    man        True    no   True
5          0    male   NaN      0      0   8.4583   Third    man        True    no   True
6          0    male  54.0      0      0  51.8625   First    man        True    no   True
7          0    male   2.0      3      1  21.0750   Third  child       False    no  False
8          1  female  27.0      0      2  11.1333   Third  woman       False   yes  False
9          1  female  14.0      1      0  30.0708  Second  child       False   yes  False
10         1  female   4.0      1      1  16.7000   Third  child       False   yes  False
11         1  female  58.0      0      0  26.5500   First  woman       False   yes   True
12         0    male  20.0      0      0   8.0500   Third    man        True    no   True
13         0    male  39.0      1      5  31.2750   Third    man        True    no  False
14         0  female  14.0      0      0   7.8542   Third  child       False    no   True
--- CLEANED DATASET INFO ---
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 11 columns):
 #   Column      Non-Null Count  Dtype
---  ------      --------------  -----
 0   survived    891 non-null    int64
 1   sex         891 non-null    object
 2   age         714 non-null    float64
 3   sibsp       891 non-null    int64
 4   parch       891 non-null    int64
 5   fare        891 non-null    float64
 6   class       891 non-null    category
 7   who         891 non-null    object
 8   adult_male  891 non-null    bool
 9   alive       891 non-null    object
 10  alone       891 non-null    bool
dtypes: bool(2), category(1), float64(2), int64(3), object(3)
memory usage: 58.6+ KB
None
```

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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
 2   age          714 non-null    float64
 3   sibsp        891 non-null    int64
 4   parch        891 non-null    int64
 5   fare         891 non-null    float64
 6   class        891 non-null    category
 7   who          891 non-null    object
 8   adult_male   891 non-null    bool
 9   alive        891 non-null    object
 10  alone        891 non-null    bool
dtypes: bool(2), category(1), float64(2), int64(3), object(3)
memory usage: 58.6+ KB
None
--- MISSING VALUES ---
survived        0
sex             0
age           177
sibsp           0
parch           0
fare            0
class           0
who             0
adult_male      0
alive           0
alone           0
dtype: int64
--- CORRELATION MATRIX ---
          survived       age     sibsp     parch      fare
survived  1.000000 -0.077221 -0.035322  0.081629  0.257307
age      -0.077221  1.000000 -0.308247 -0.189119  0.096067
sibsp    -0.035322 -0.308247  1.000000  0.414838  0.159651
parch     0.081629 -0.189119  0.414838  1.000000  0.216225
fare      0.257307  0.096067  0.159651  0.216225  1.000000
```