In [1]:
```
import pandas as pd
```

In [3]:
```
df = pd.read_csv(r"C:\Users\HP\.ipynb_checkpoints\train.csv")
```

In [4]:
```
df.head()  # Shows the first 5 rows of the dataframe
```

Out[4]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Ca
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	

In [5]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   PassengerId  891 non-null    int64  
 1   Survived     891 non-null    int64  
 2   Pclass       891 non-null    int64  
 3   Name         891 non-null    object 
 4   Sex          891 non-null    object 
 5   Age          714 non-null    float64
 6   SibSp        891 non-null    int64  
 7   Parch        891 non-null    int64  
 8   Ticket       891 non-null    object 
 9   Fare         891 non-null    float64
 10  Cabin        204 non-null    object 
 11  Embarked     889 non-null    object 
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
```

In [6]:

```
df.describe()
```

Out[6]:

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
count	891.000000	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	446.000000	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	257.353842	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	1.000000	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	223.500000	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	446.000000	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	668.500000	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	891.000000	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

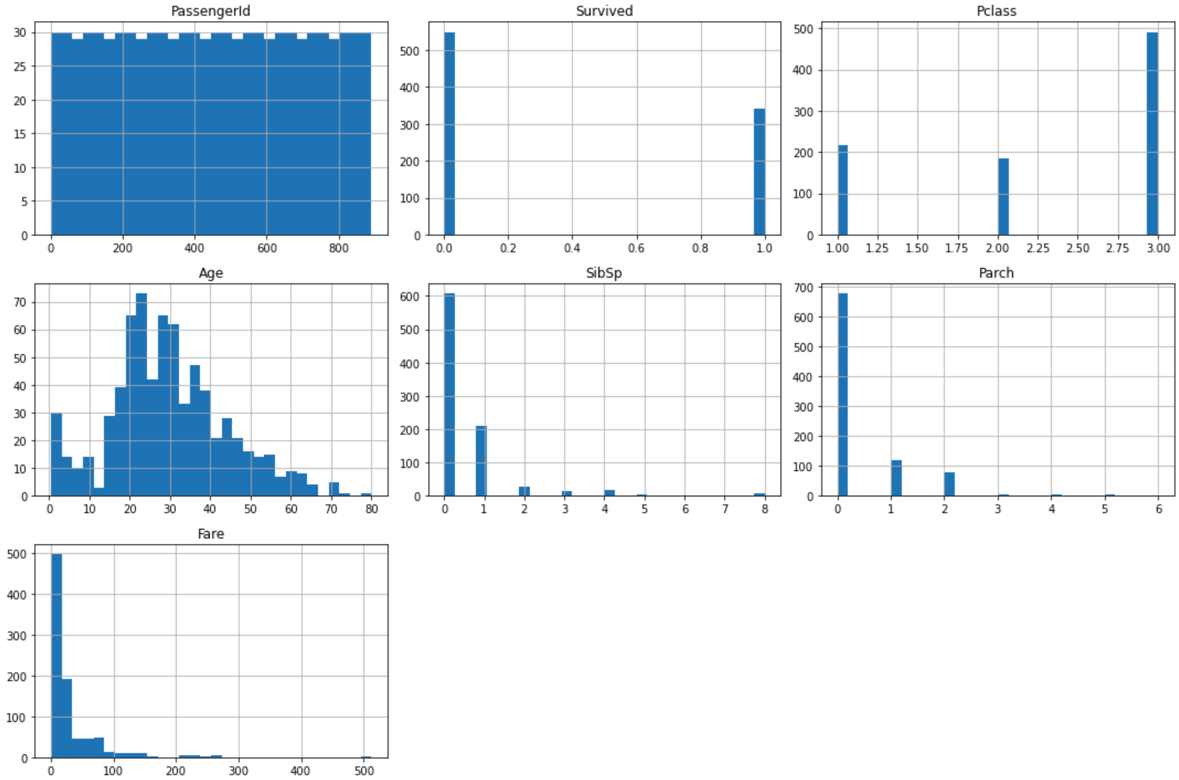
In [7]:

```
for col in df.select_dtypes(include='object').columns:
    print(f"Value counts for {col}:")
    print(df[col].value_counts())
    print("-" * 40)
```

```
Value counts for Name:
Braund, Mr. Owen Harris                     1
Boulos, Mr. Hanna                           1
Frolicher-Stehli, Mr. Maxmillian            1
Gilinski, Mr. Eliezer                       1
Murdlin, Mr. Joseph                         1
                                           ..
Kelly, Miss. Anna Katherine "Annie Kate"    1
McCoy, Mr. Bernard                          1
Johnson, Mr. William Cahoone Jr             1
Keane, Miss. Nora A                         1
Dooley, Mr. Patrick                         1
Name: Name, Length: 891, dtype: int64
----------------------------------------
Value counts for Sex:
male      577
female    314
Name: Sex, dtype: int64
----------------------------------------
Value counts for Ticket:
347082      7
CA. 2343    7
1601        7
3101295     6
CA 2144     6
           ..
9234        1
19988       1
2693        1
PC 17612    1
370376      1
Name: Ticket, Length: 681, dtype: int64
----------------------------------------
Value counts for Cabin:
B96 B98        4
G6             4
C23 C25 C27    4
C22 C26        3
F33            3
              ..
E34            1
C7             1
C54            1
E36            1
C148           1
Name: Cabin, Length: 147, dtype: int64
----------------------------------------
Value counts for Embarked:
S    644
C    168
Q     77
Name: Embarked, dtype: int64
----------------------------------------
```

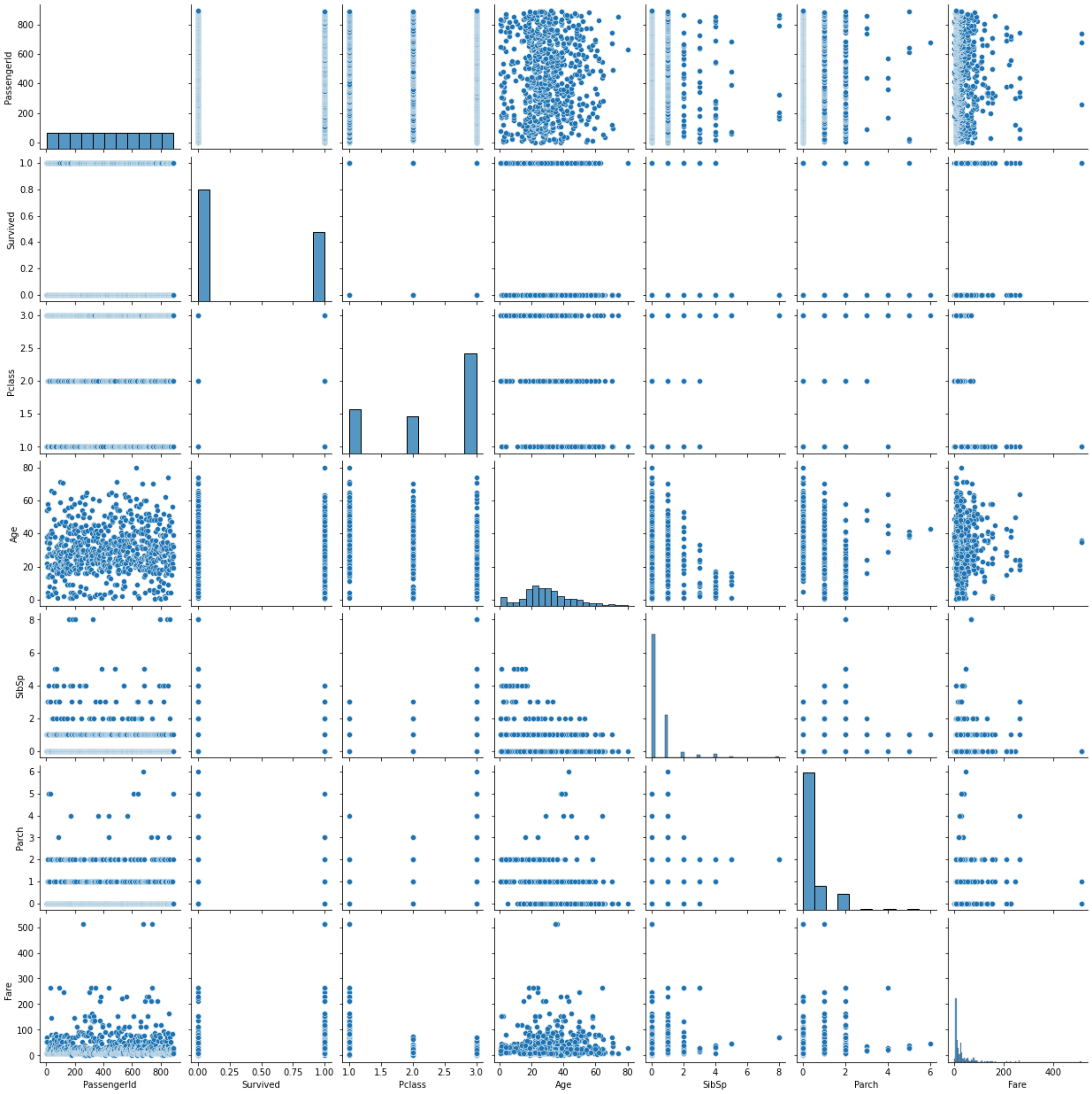
In [8]:
```
import seaborn as sns
import matplotlib.pyplot as plt
```

In [9]:
```
# Histograms for numerical features
df.hist(bins=30, figsize=(15, 10))
plt.tight_layout()
plt.show()
```

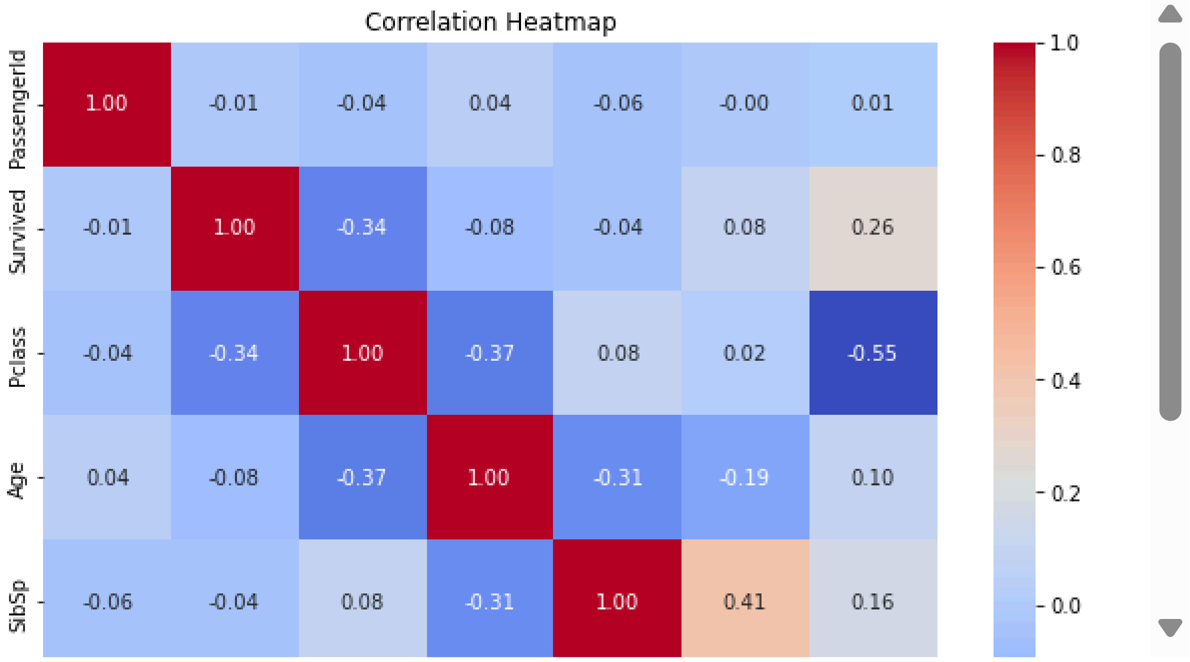


In [10]:

```
# Pairplot to see pairwise relationships
sns.pairplot(df)
plt.show()
```

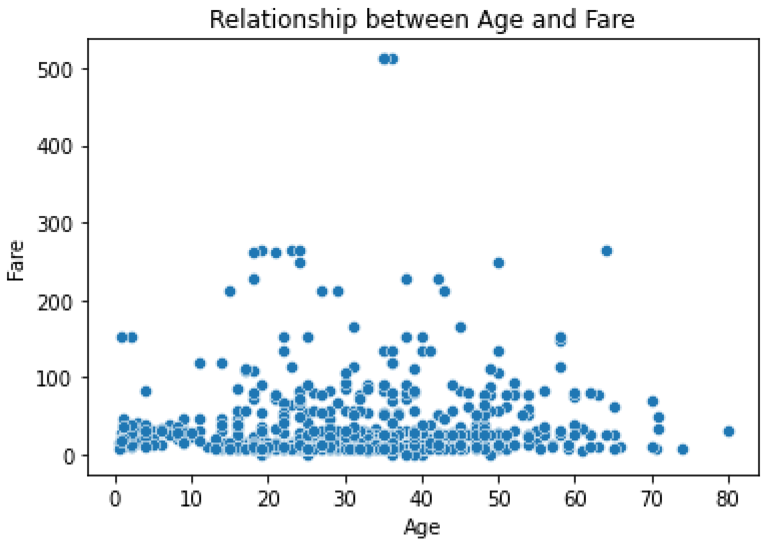


```
In [11]: # Correlation heatmap
         plt.figure(figsize=(10, 8))
         sns.heatmap(df.corr(), annot=True, cmap='coolwarm', fmt=".2f")
         plt.title('Correlation Heatmap')
         plt.show()
```



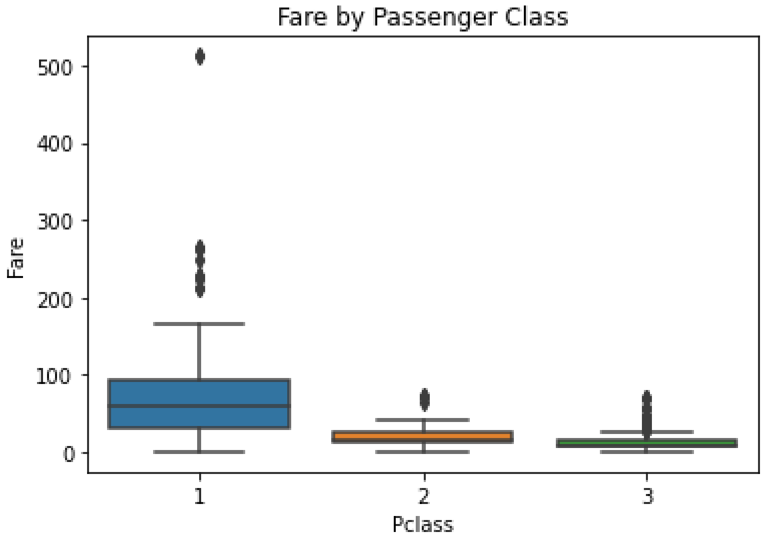
```
In [13]: print(df.columns)

         Index(['PassengerId', 'Survived', 'Pclass', 'Name', 'Sex', 'Age', 'SibSp',
                'Parch', 'Ticket', 'Fare', 'Cabin', 'Embarked'],
               dtype='object')
```

```
In [14]: sns.scatterplot(data=df, x='Age', y='Fare')  # Replace 'Age' with your chosen
         plt.title('Relationship between Age and Fare')
         plt.show()
```



In [15]:

```
sns.boxplot(x='Pclass', y='Fare', data=df)  # Replace 'Pclass' with your chose
plt.title('Fare by Passenger Class')
plt.show()
```



In [ ]: