In [2]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

df=pd.read_csv('D:/Internship Data Analyst Apr 2025/Day5/titanic/test.csv')
df
```

Out[2]:

	PassengerId	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Ca
0	892	3	Kelly, Mr. James	male	34.5	0	0	330911	7.8292	N
1	893	3	Wilkes, Mrs. James (Ellen Needs)	female	47.0	1	0	363272	7.0000	N
2	894	2	Myles, Mr. Thomas Francis	male	62.0	0	0	240276	9.6875	N
3	895	3	Wirz, Mr. Albert	male	27.0	0	0	315154	8.6625	N
4	896	3	Hirvonen, Mrs. Alexander (Helga E Lindqvist)	female	22.0	1	1	3101298	12.2875	N
...	...	...	...	...	...	...	...	...	...	
413	1305	3	Spector, Mr. Woolf	male	NaN	0	0	A.5. 3236	8.0500	N
414	1306	1	Oliva y Ocana, Dona. Fermina	female	39.0	0	0	PC 17758	108.9000	C
415	1307	3	Saether, Mr. Simon Sivertsen	male	38.5	0	0	SOTON/O.Q. 3101262	7.2500	N
416	1308	3	Ware, Mr. Frederick	male	NaN	0	0	359309	8.0500	N
417	1309	3	Peter, Master. Michael J	male	NaN	1	1	2668	22.3583	N

418 rows × 11 columns

In [4]:
```
#First 5 rows
print(df.head())
```

```
   PassengerId  Pclass                                          Name     Sex  \
0          892       3                              Kelly, Mr. James    male
1          893       3              Wilkes, Mrs. James (Ellen Needs)  female
2          894       2                     Myles, Mr. Thomas Francis    male
3          895       3                              Wirz, Mr. Albert    male
4          896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female

    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
3  27.0      0      0   315154   8.6625   NaN        S
4  22.0      1      1  3101298  12.2875   NaN        S
```

In [5]:
```
#data info
print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 418 entries, 0 to 417
Data columns (total 11 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   PassengerId  418 non-null    int64  
 1   Pclass       418 non-null    int64  
 2   Name         418 non-null    object 
 3   Sex          418 non-null    object 
 4   Age          332 non-null    float64
 5   SibSp        418 non-null    int64  
 6   Parch        418 non-null    int64  
 7   Ticket       418 non-null    object 
 8   Fare         417 non-null    float64
 9   Cabin        91 non-null     object 
 10  Embarked     418 non-null    object 
dtypes: float64(2), int64(4), object(5)
memory usage: 36.1+ KB
```

In [6]:
```
#data Summary
print(df.describe())
```

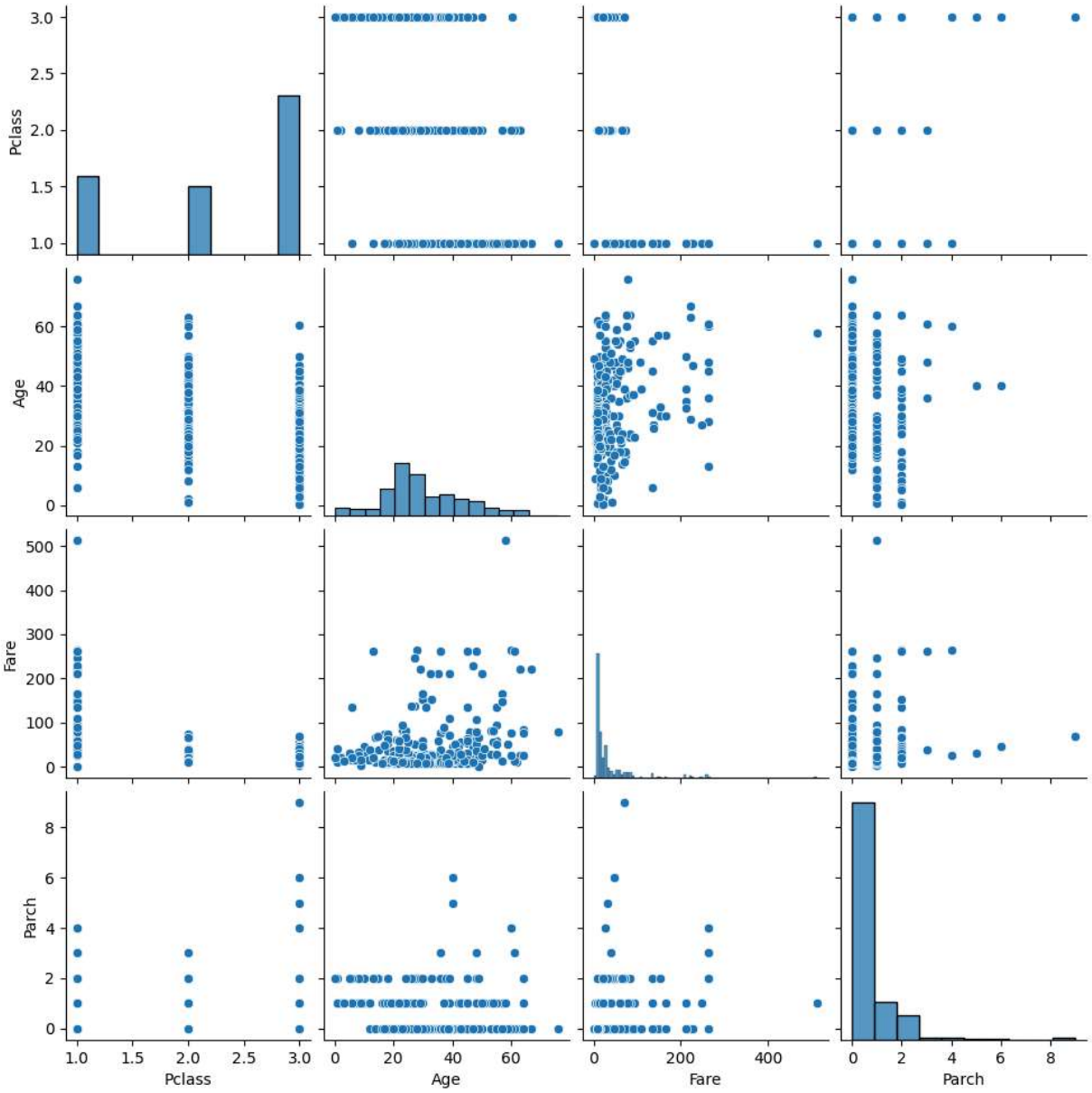
```
       PassengerId      Pclass         Age       SibSp       Parch        Fare
count   418.000000  418.000000  332.000000  418.000000  418.000000  417.000000
mean   1100.500000    2.265550   30.272590    0.447368    0.392344   35.627188
std     120.810458    0.841838   14.181209    0.896760    0.981429   55.907576
min     892.000000    1.000000    0.170000    0.000000    0.000000    0.000000
25%     996.250000    1.000000   21.000000    0.000000    0.000000    7.895800
50%    1100.500000    3.000000   27.000000    0.000000    0.000000   14.454200
75%    1204.750000    3.000000   39.000000    1.000000    0.000000   31.500000
max    1309.000000    3.000000   76.000000    8.000000    9.000000  512.329200
```

In [7]:
```
#value counts
print(df['Sex'].value_counts())
```

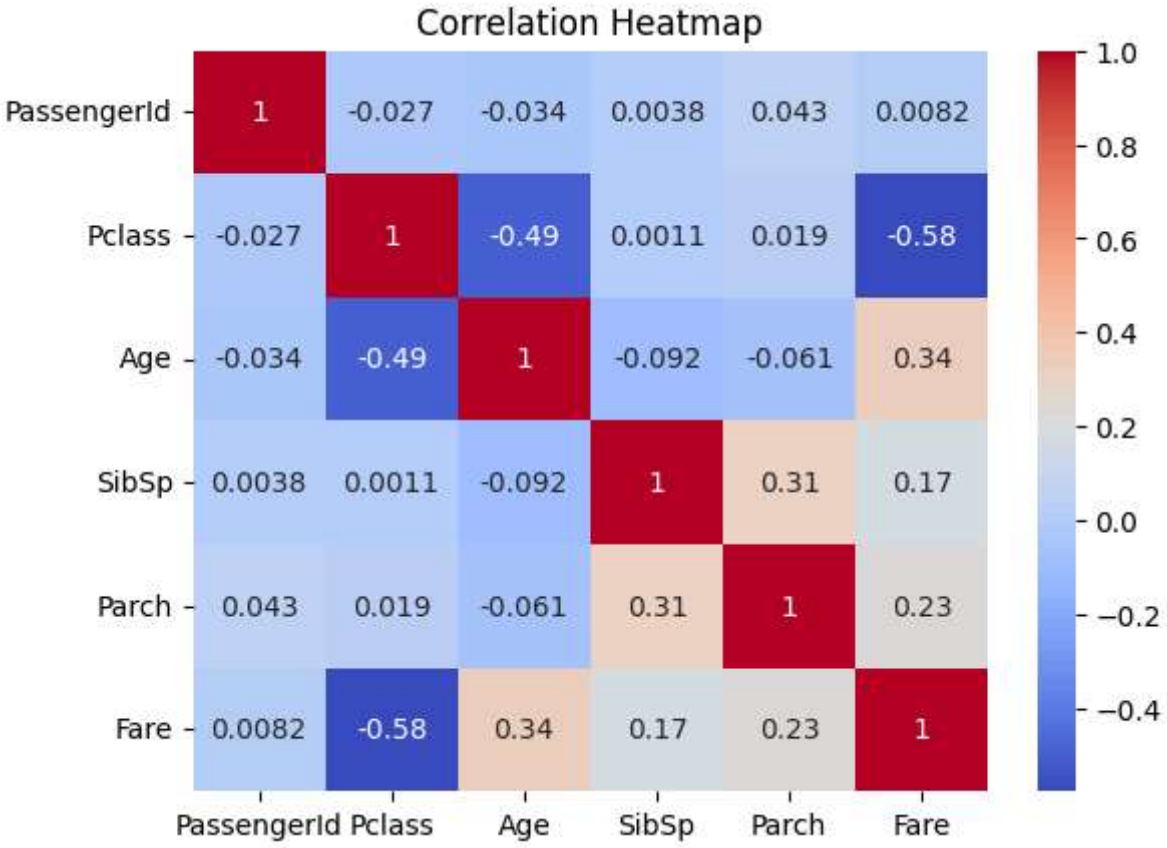
```
Sex
male      266
female    152
Name: count, dtype: int64
```

In [8]:
```
#pair plot
sns.pairplot(df[['Pclass','Age','Fare','Parch']])
```

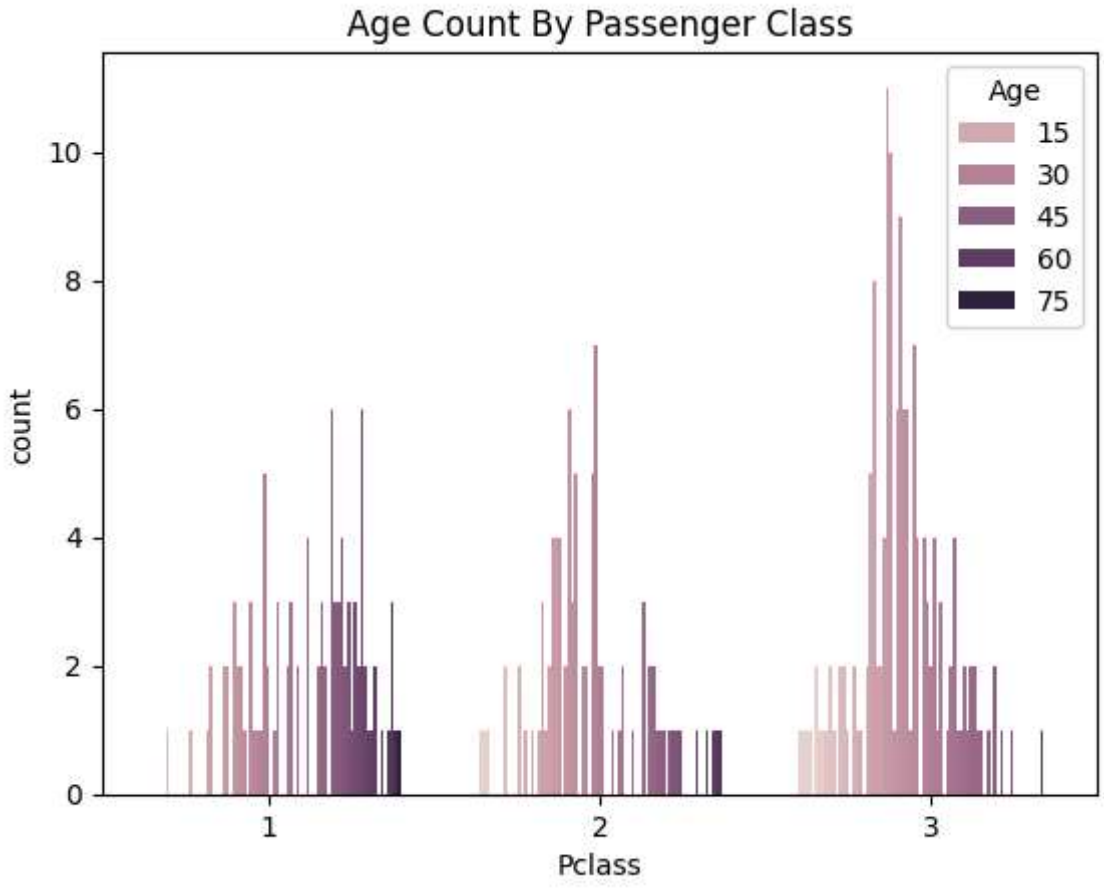
Out[8]:
```
<seaborn.axisgrid.PairGrid at 0x12ee89b4440>
```



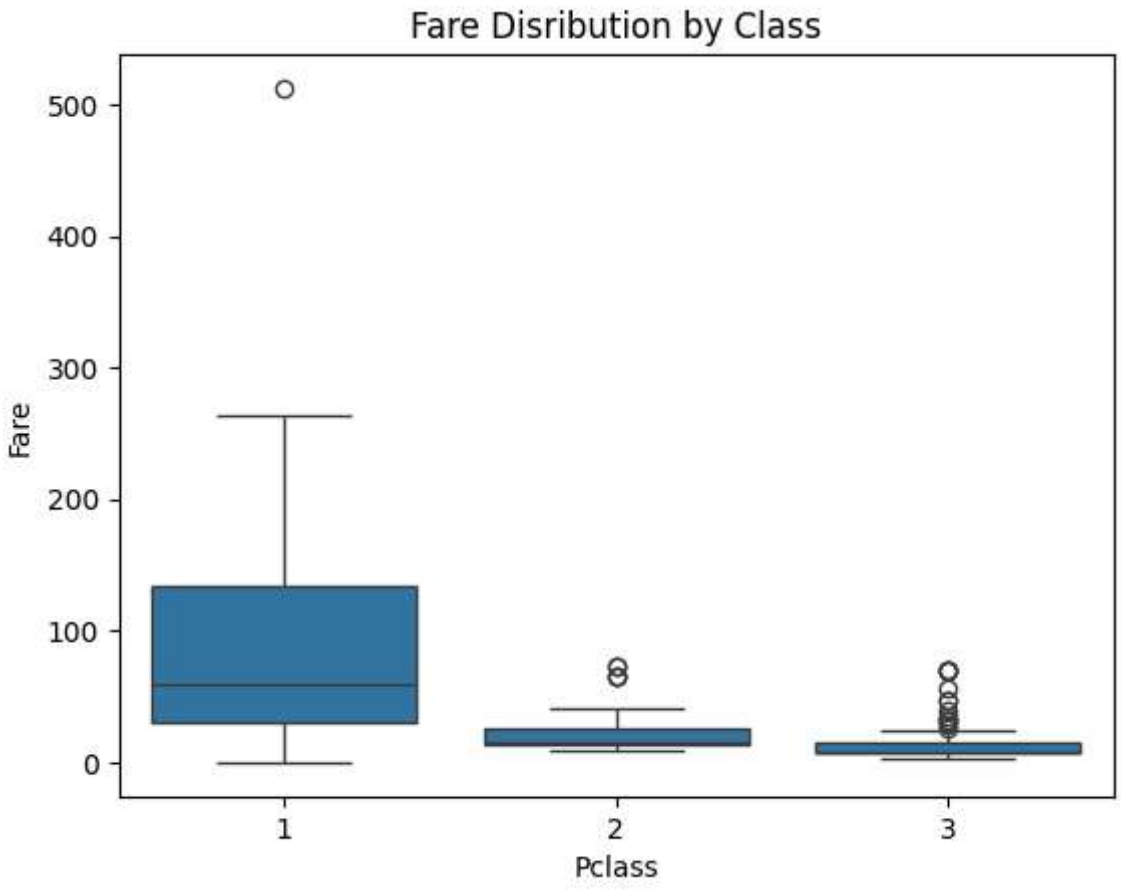
In [9]:
```
#Heatmap correlation
corr = df.corr(numeric_only=True)
sns.heatmap(corr, annot=True, cmap='coolwarm')
plt.title("Correlation Heatmap")
plt.show()

#This shows which numerical variables are positively or negatively correlated
```



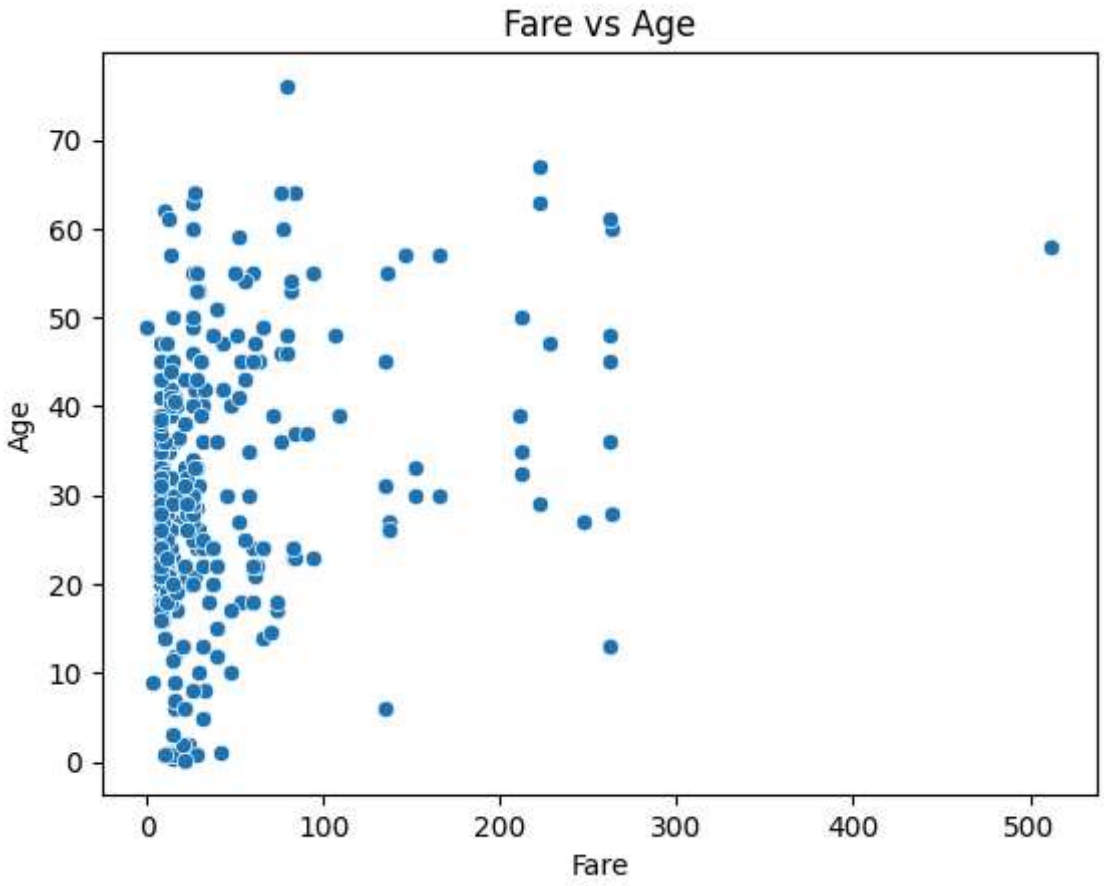
In [13]:
```
#Bar Plot or Count Plot (to compare categories)
sns.countplot(x='Pclass',hue='Age', data=df)
plt.title("Age Count By Passenger Class")
plt.show()
```



In [14]:
```
#Box Plot( to compare distributers)
sns.boxplot(x='Pclass',y='Fare', data=df)
plt.title('Fare Disribution by Class')
plt.show()
```



In [15]:
```
#Scatter Plot(if time - series data)
sns.scatterplot(x='Fare',y='Age', data=df)
plt.title('Fare vs Age')
plt.show()
```



In [ ]: