Group Number = 9

Assignment = 5

Aditya Babar (230)

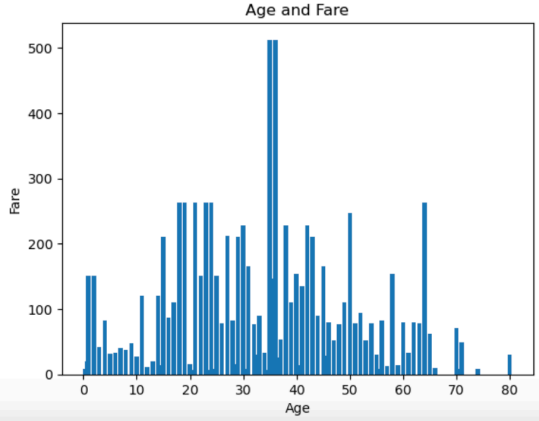
Janhavi Kawadkar (231)

Rohan Agrawal (236)

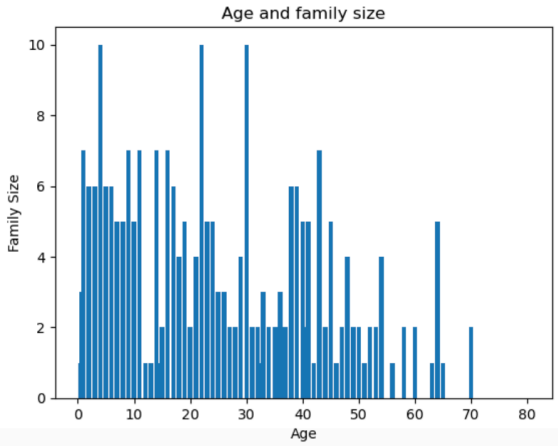
In [3]:
```
import pandas as pd

df = pd.read_csv("titanic.csv")

print(df)
```

```
      Age Cabin Embarked     Fare  \
0    22.0   NaN        S   7.2500
1    38.0   C85        C  71.2833
2    26.0   NaN        S   7.9250
3    35.0  C123        S  53.1000
4    35.0   NaN        S   8.0500
..    ...   ...      ...      ...
886  27.0   NaN        S  13.0000
887  19.0   B42        S  30.0000
888  22.0   NaN        S  23.4500
889  26.0  C148        C  30.0000
890  32.0   NaN        Q   7.7500

                                                  Name  Parch  PassengerId  \
0                              Braund, Mr. Owen Harris      0            1
1    Cumings, Mrs. John Bradley (Florence Briggs Th...      0            2
2                               Heikkinen, Miss. Laina      0            3
3         Futrelle, Mrs. Jacques Heath (Lily May Peel)      0            4
4                             Allen, Mr. William Henry      0            5
..                                                 ...    ...          ...
886                              Montvila, Rev. Juozas      0          887
887                       Graham, Miss. Margaret Edith      0          888
888           Johnston, Miss. Catherine Helen "Carrie"      2          889
889                              Behr, Mr. Karl Howell      0          890
890                                Dooley, Mr. Patrick      0          891

     Pclass     Sex  SibSp  Survived            Ticket Title  Family_Size
0         3    male      1       0.0         A/5 21171    Mr            1
```

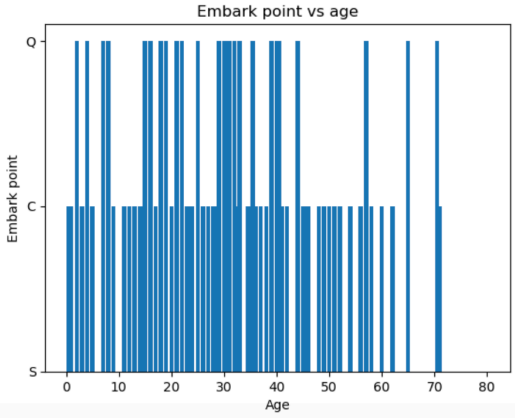
In [2]:
```
import matplotlib.pyplot as plt

# Sample data
x = df["Age"]
y = df["Fare"]

# Create a bar plot
plt.bar(x, y)

# Customize the plot
plt.title("Age and Fare")
plt.xlabel("Age")
plt.ylabel("Fare")

# Display the plot
plt.show()
```



In [3]:
```
import matplotlib.pyplot as plt

# Sample data
x = df["Age"]
y = df["Family_Size"]

# Create a bar plot
plt.bar(x, y)

# Customize the plot
plt.title("Age and family size")
plt.xlabel("Age")
plt.ylabel("Family Size")

# Display the plot
plt.show()
```

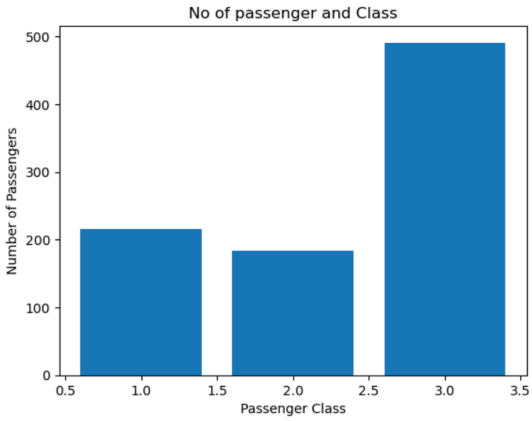


In [4]:
```
import matplotlib.pyplot as plt

# Sample data
x = df["Age"]
y = df["Embarked"]

# Create a bar plot
plt.bar(x, y)

# Customize the plot
plt.title("Embark point vs age")
plt.xlabel("Age")
plt.ylabel("Embark point")

# Display the plot
plt.show()
```



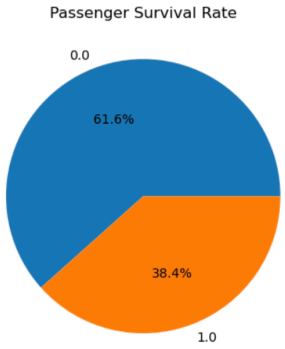
In [5]:

```
# Count the number of passengers in each class
passenger_counts = df['Pclass'].value_counts()

# Create a bar chart
plt.bar(passenger_counts.index, passenger_counts.values)
plt.xlabel('Passenger Class')
plt.ylabel('Number of Passengers')
plt.title('No of passenger and Class')
plt.show()
```

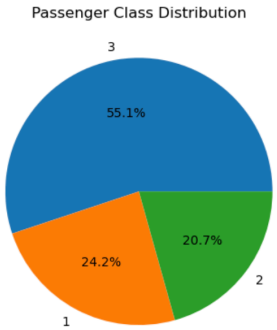


In [6]:

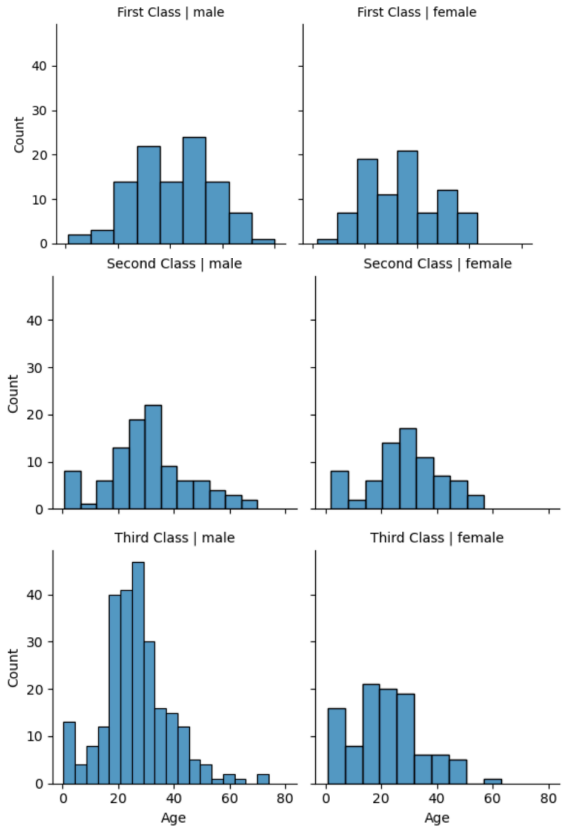
```
import matplotlib.pyplot as plt

# Count the number of survivors and non-survivors
survivor = df['Survived'].value_counts()

# Create a pie chart
plt.pie(survivor.values, labels=survivor.index, autopct='%1.1f%%')
plt.title('Passenger Survival Rate')
plt.show()
```



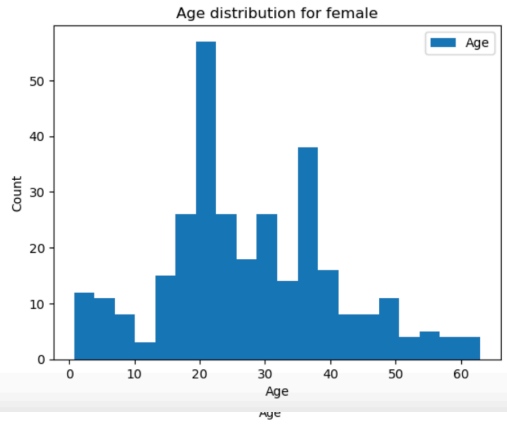
In [9]:
```
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv("titanic.csv")

class_counts = df['Pclass'].value_counts()

plt.pie(class_counts, labels=class_counts.index, autopct='%1.1f%%')
plt.title('Passenger Class Distribution')
plt.show()
```

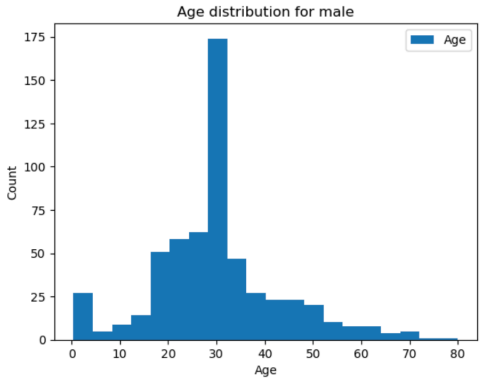


In [8]:
```
import seaborn as sns
# Load the example Titanic dataset
titanic = sns.load_dataset('titanic')
# Create a FacetGrid with two categorical variables: class and sex
grid = sns.FacetGrid(titanic, row='class', col='sex')
# Map a plot type to the grid using the desired variable: age
grid.map(sns.histplot, 'age')
# Set common labels for y-axis and x-axis
grid.set_axis_labels('Age', 'Count')

grid.set_titles(row_template='{row_name} Class', col_template='{col_name}')
plt.show() # Show the plot
```

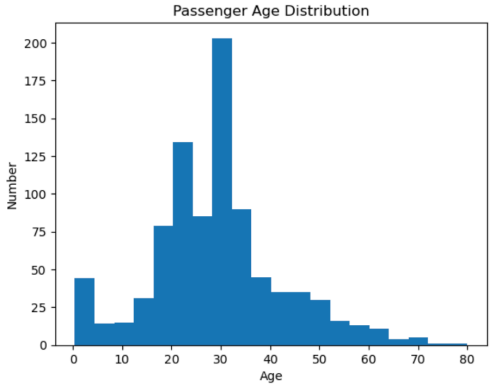


```python
import pandas as pd
import matplotlib.pyplot as plt

# Read the Titanic dataset
df = pd.read_csv("titanic.csv")

# Group the data by a column (e.g., 'Sex')
grouped_data = df.groupby('Sex')

# Plotting for each group
for group_name, group_data in grouped_data:
    plt.figure()
    group_data['Age'].plot(kind='hist', bins=20)
    plt.title(f"Age distribution for {group_name}")
    plt.xlabel('Age')
    plt.ylabel('Count')
    plt.legend()
    plt.show()
```

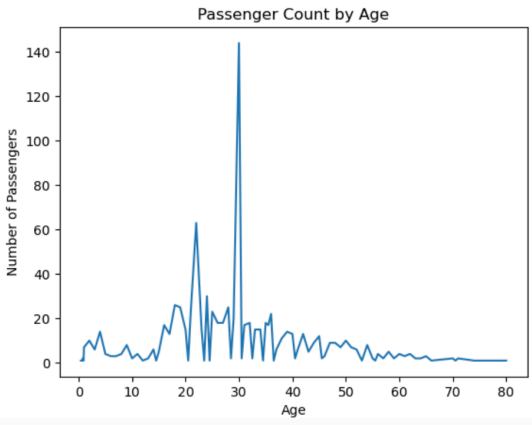




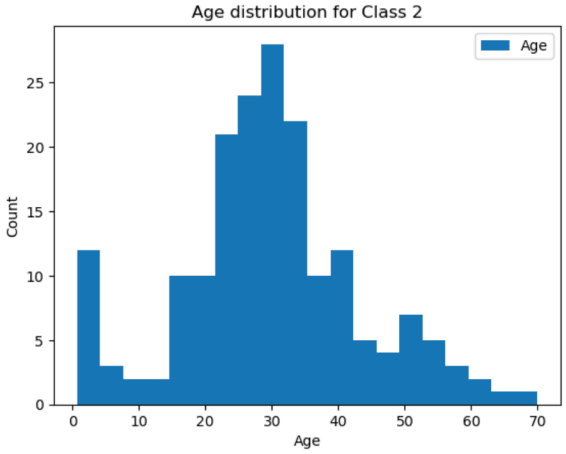
In [5]:
```
import matplotlib.pyplot as plt

df = pd.read_csv("titanic.csv")
age_data = df['Age']

plt.hist(age_data, bins=20)
plt.xlabel('Age')
plt.ylabel('Number')
plt.title('Passenger Age Distribution')
plt.show()
```

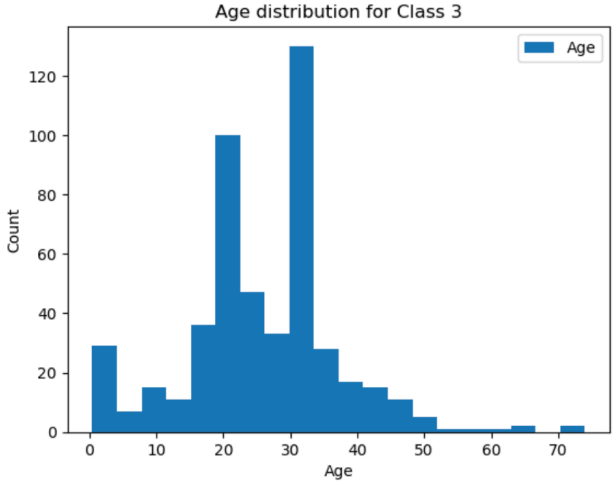


In [8]:
```
import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv("titanic.csv")

# Group the data by age and count the number of passengers in each age group
age = df['Age'].value_counts().sort_index()

# Create a line graph
plt.plot(age.index, age.values)
plt.xlabel('Age')
plt.ylabel('Number of Passengers')
plt.title('Passenger Count by Age')
plt.show()
```

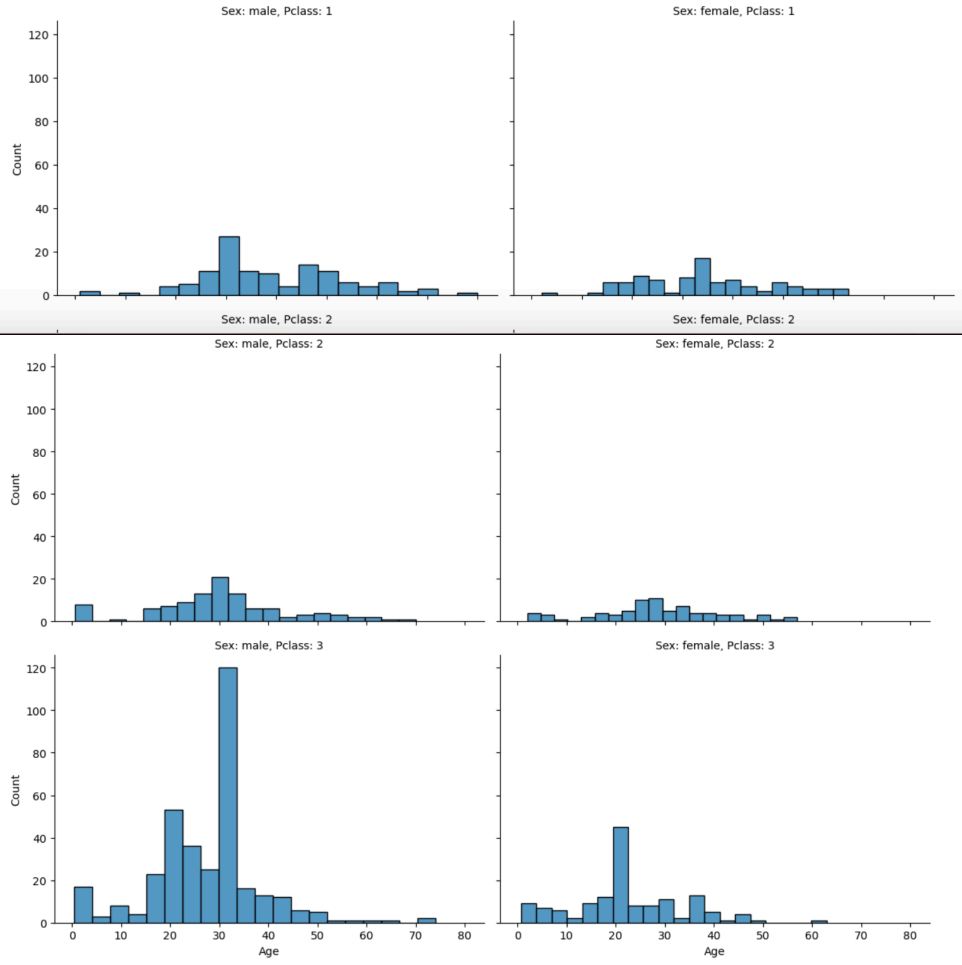


In [36]:
```python
import pandas as pd
import matplotlib.pyplot as plt

# Read the Titanic dataset
df = pd.read_csv("titanic.csv")

# Group the data by a column (e.g., 'Pclass')
grouped_data = df.groupby('Pclass')

# Plotting for each group
for group_name, group_data in grouped_data:
    plt.figure()
    group_data['Age'].plot(kind='hist', bins=20)
    plt.title(f"Age distribution for Class {group_name}")
    plt.xlabel('Age')
    plt.ylabel('Count')
    plt.legend()
    plt.show()
```

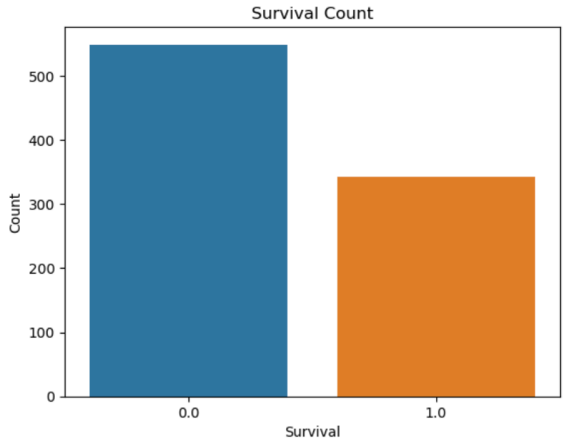




In [37]:
```
#Panel Plot

import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

# Read the Titanic dataset
df = pd.read_csv("titanic.csv")

# Create a FacetGrid object with multiple panels
g = sns.FacetGrid(df, col='Sex', row='Pclass', height=4, aspect=1.5)

# Specify the type of plot for each panel
g.map(sns.histplot, 'Age', bins=20)

# Add labels and titles to the plot
g.set_axis_labels('Age', 'Count')
g.set_titles('Sex: {col_name}, Pclass: {row_name}')

# Adjust the plot layout
plt.tight_layout()

# Show the panel graph
plt.show()
```



In [39]:
```
import seaborn as sns

sns.countplot(data=df, x='Survived')
plt.xlabel('Survival')
plt.ylabel('Count')
plt.title('Survival Count')
plt.show()
```



Survival

In [44]:
```
import seaborn as sns

sns.countplot(data=df, x='Embarked', hue='Survived')
plt.xlabel('Embarked')
plt.ylabel('Count')
plt.title('Embarked and Survival')
plt.show()
```