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In [22]: # Day 59 - Titanic Data Analysis using Pandas and Matplotlib
# -----
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

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In [23]: # Step 1: Load Titanic Dataset
data = pd.read_csv("titanic.csv")
```

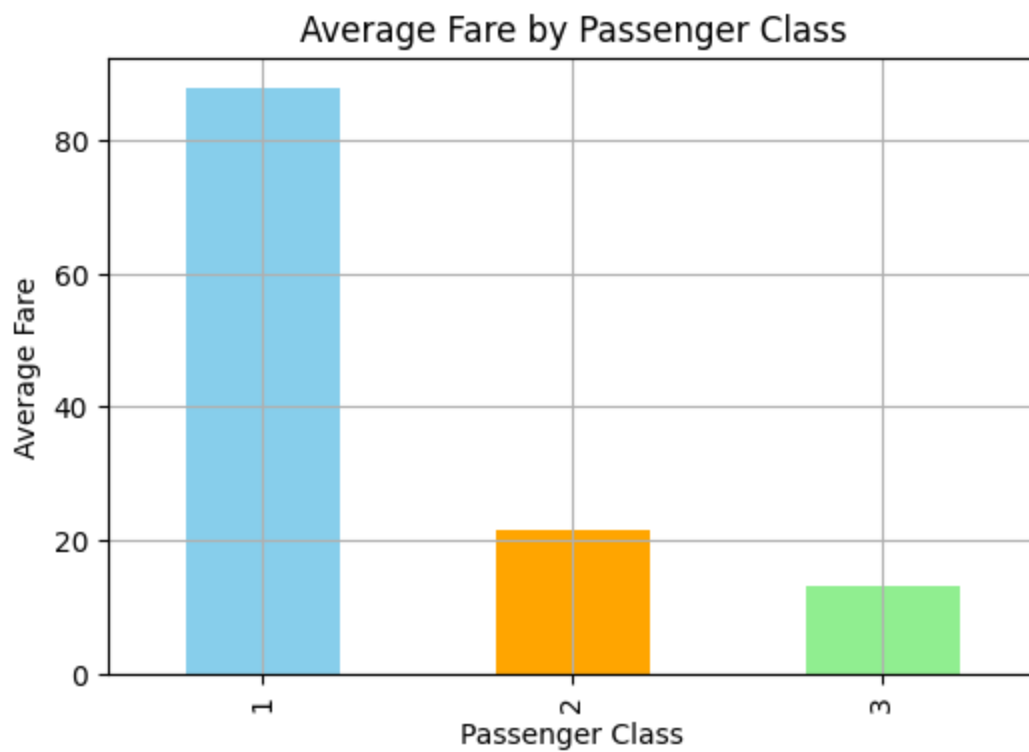
```
In [24]: # Display first few rows
print("First 5 Rows:\n", data.head(), "\n")
```

First 5 Rows:

	survived	pclass	name \
0	0	3	Braund, Mr. Owen Harris
1	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...
2	1	3	Heikkinen, Miss. Laina
3	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)
4	0	3	Allen, Mr. William Henry

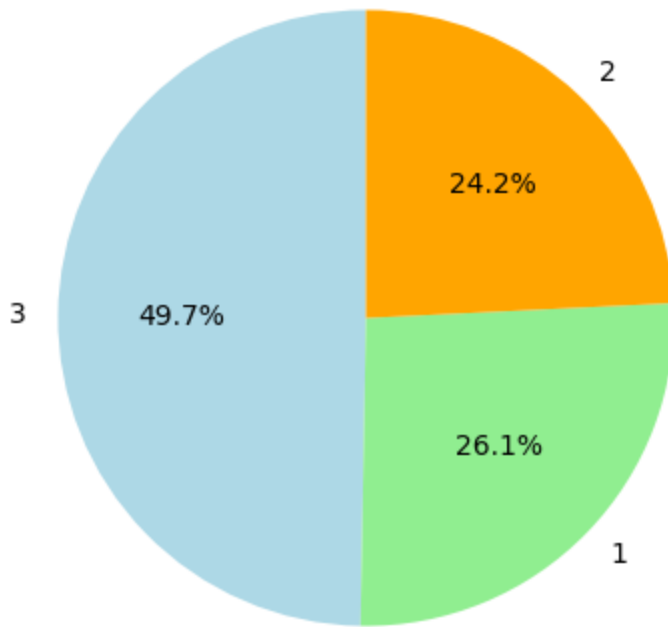
	sex	age	fare	sibsp	parch
0	male	22.0	7.2500	1	0
1	female	38.0	71.2833	1	0
2	female	26.0	7.9250	0	0
3	female	35.0	53.1000	1	0
4	male	35.0	8.0500	0	0

```
In [25]: # Step 2: Bar Chart – Average Fare by Passenger Class
avg_fare = data.groupby('pclass')['fare'].mean()
plt.figure(figsize=(6,4))
avg_fare.plot(kind='bar', color=['skyblue', 'orange', 'lightgreen'])
plt.title('Average Fare by Passenger Class')
plt.xlabel('Passenger Class')
plt.ylabel('Average Fare')
plt.grid(True)
plt.show()
```

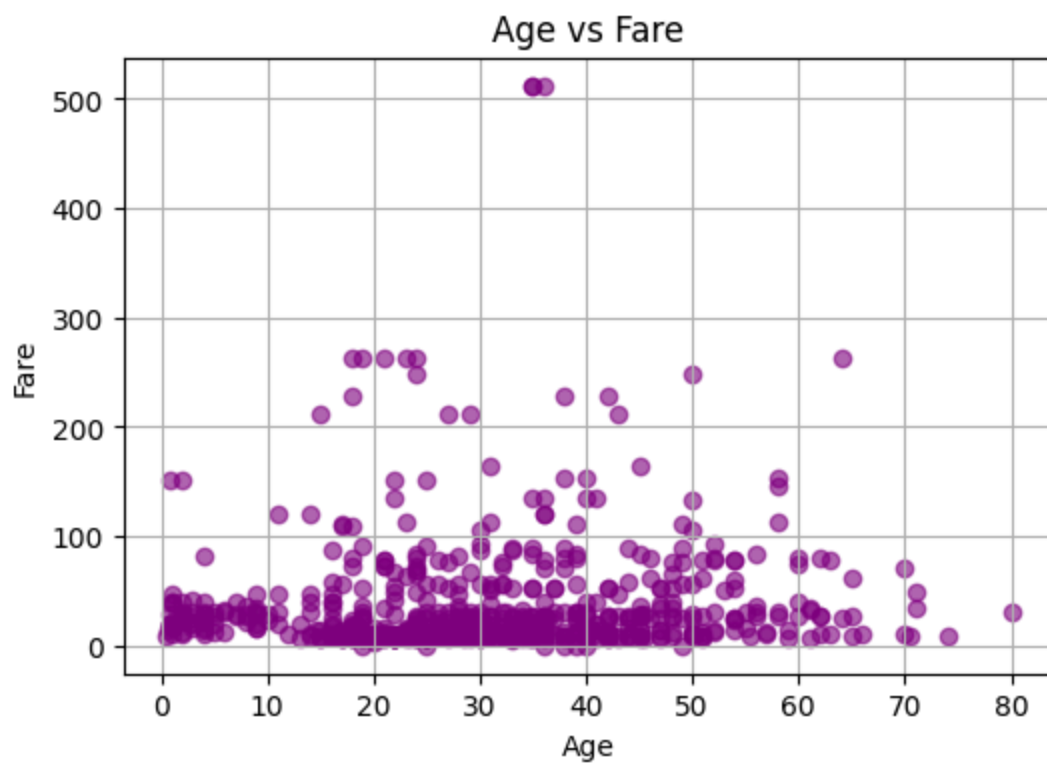


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In [26]: # Step 3: Pie Chart – Passenger Class Distribution
plt.figure(figsize=(5,5))
data['pclass'].value_counts().plot(
    kind='pie',
    autopct='%1.1f%%',
    startangle=90,
    colors=['lightblue', 'lightgreen', 'orange']
)
plt.title('Passenger Class Distribution')
plt.ylabel('')
plt.show()
```

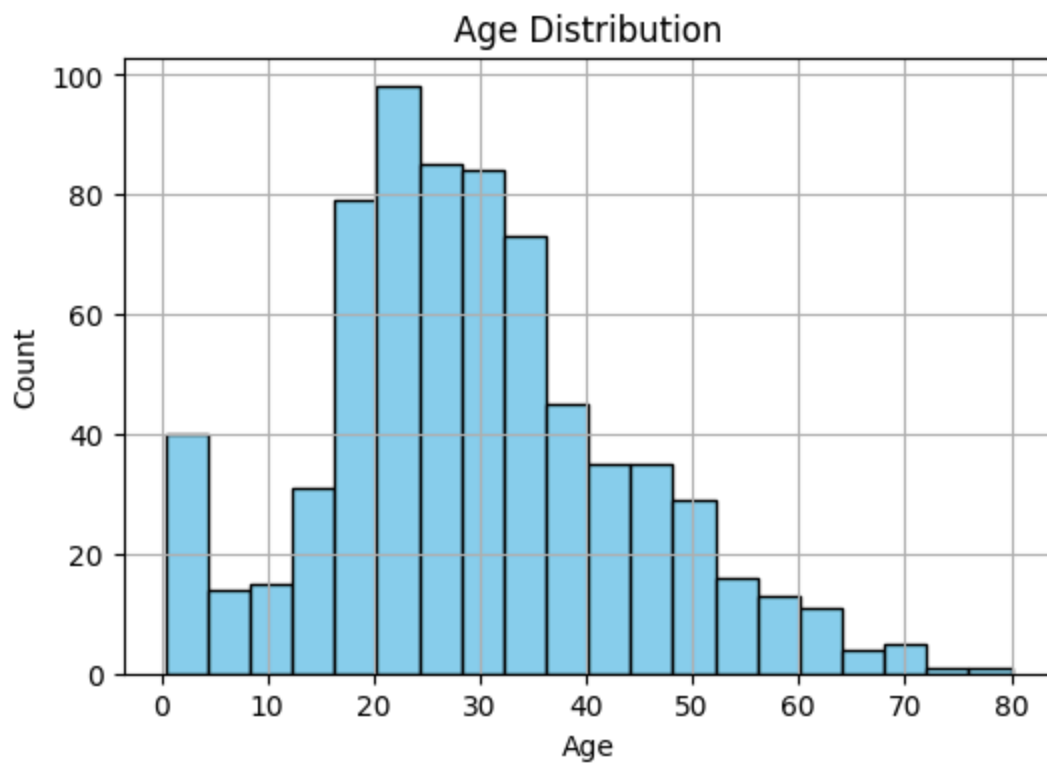
## Passenger Class Distribution



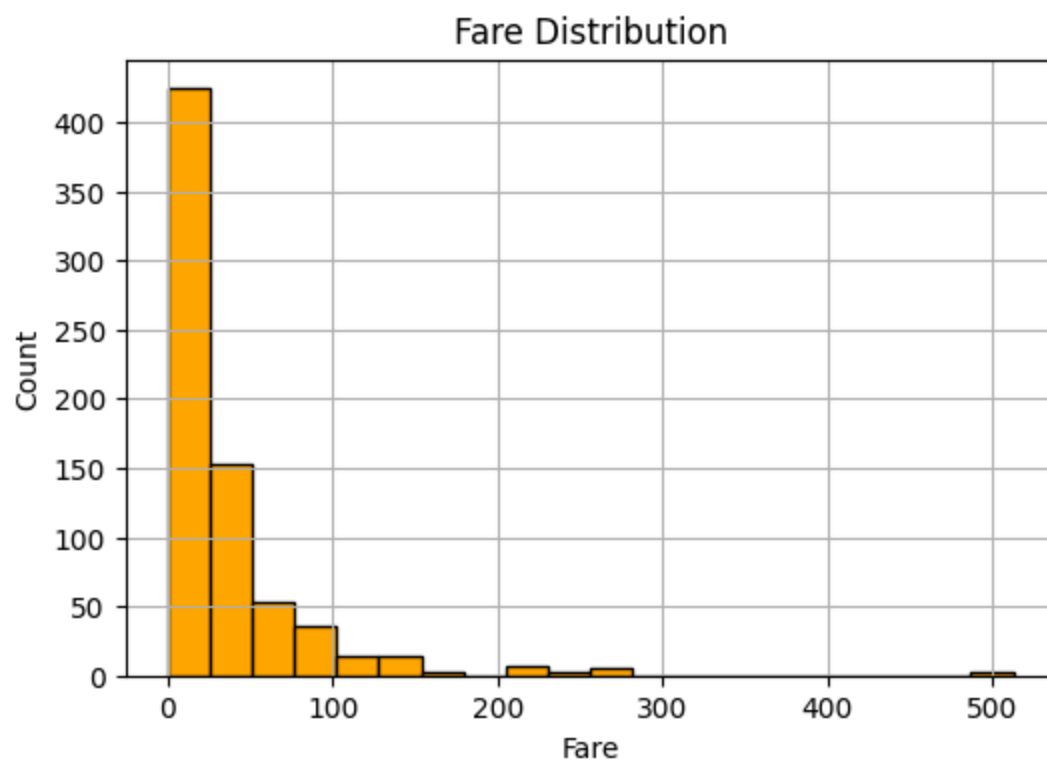
```
In [27]: # Step 4: Scatter Plot – Age vs Fare
plt.figure(figsize=(6,4))
plt.scatter(data['age'], data['fare'], color='purple', alpha=0.6)
plt.title('Age vs Fare')
plt.xlabel('Age')
plt.ylabel('Fare')
plt.grid(True)
plt.show()
```



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In [28]: # Step 5: Histogram – Age Distribution
plt.figure(figsize=(6,4))
plt.hist(data['age'].dropna(), bins=20, color='skyblue', edgecolor='black')
plt.title('Age Distribution')
plt.xlabel('Age')
plt.ylabel('Count')
plt.grid(True)
plt.show()
```



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In [29]: # Step 6: Histogram – Fare Distribution
plt.figure(figsize=(6,4))
plt.hist(data['fare'], bins=20, color='orange', edgecolor='black')
plt.title('Fare Distribution')
plt.xlabel('Fare')
plt.ylabel('Count')
plt.grid(True)
plt.show()
```



```
In [30]: print("✅ Visualization Complete – Titanic Dataset Insights Generated!")
```

✅ Visualization Complete – Titanic Dataset Insights Generated!