What is Grammer of Graphics?

Mapping:

1- Mapping data

2- Aeshetic (color, shape, size)

3- Geometric (Object: Line, Bar, points, Box, Map)

Libraries for data science

Scientific Computing

1- Pandas: Data structures & tools 2D dataframes

2- Numpy: Arrays & Matrices

3- Scipy: Optimization and solving diffrential equations

Data visualization

1- Matplotlib: Plots, graph and figures

2- Seaborn: heat maps, times series and other plots

ML Algorithmic Development

1- Scikit-learn: Machine learning: regression, classification, clustring analysis and so on

2- Statsmodels: Explore data, estimation of statical models and perform statical analysis

Variable Type Matter

Type of visualization depends on the variable type

1- Catagorical Variable: Counts(plot type)

a- Male vs Female

b- 0 vs 1

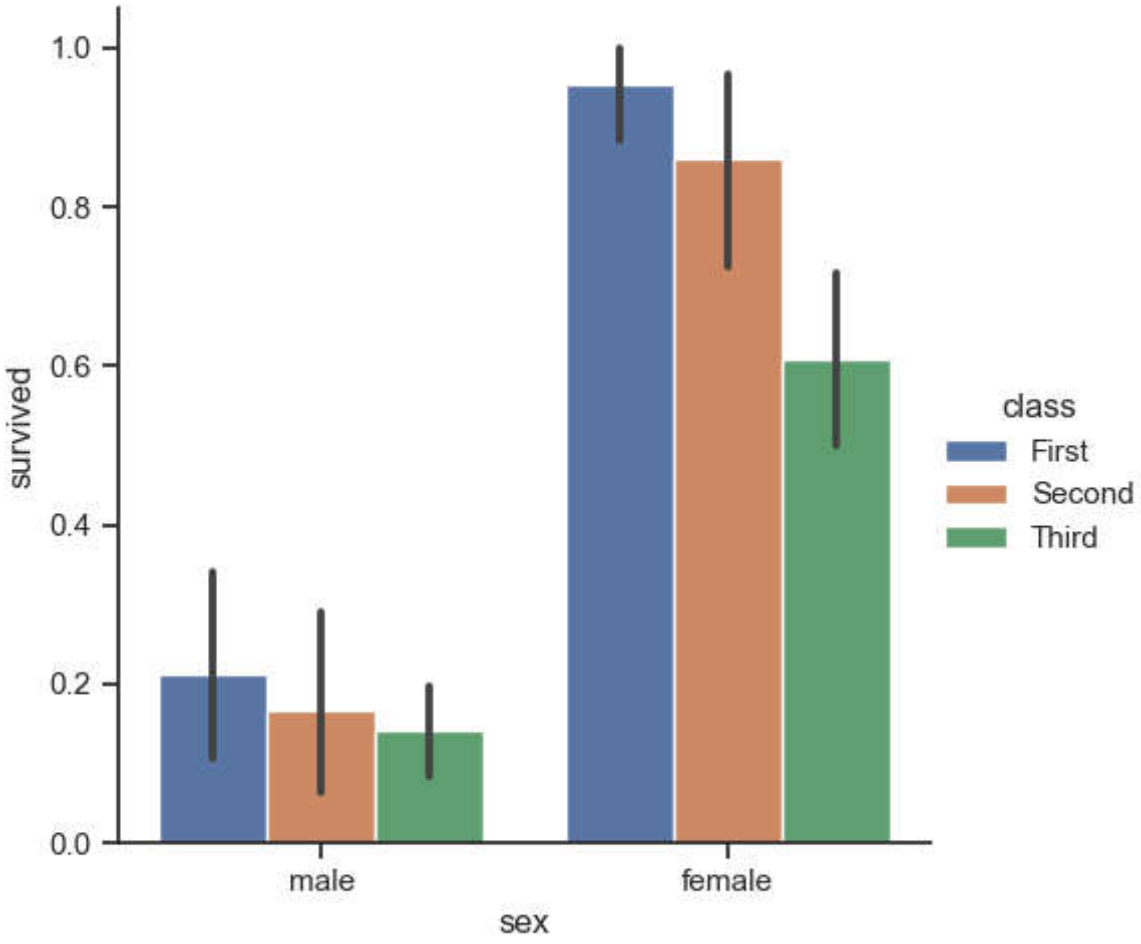
c- Yes vs No

2- Continuous Variable

a- Scatter plot

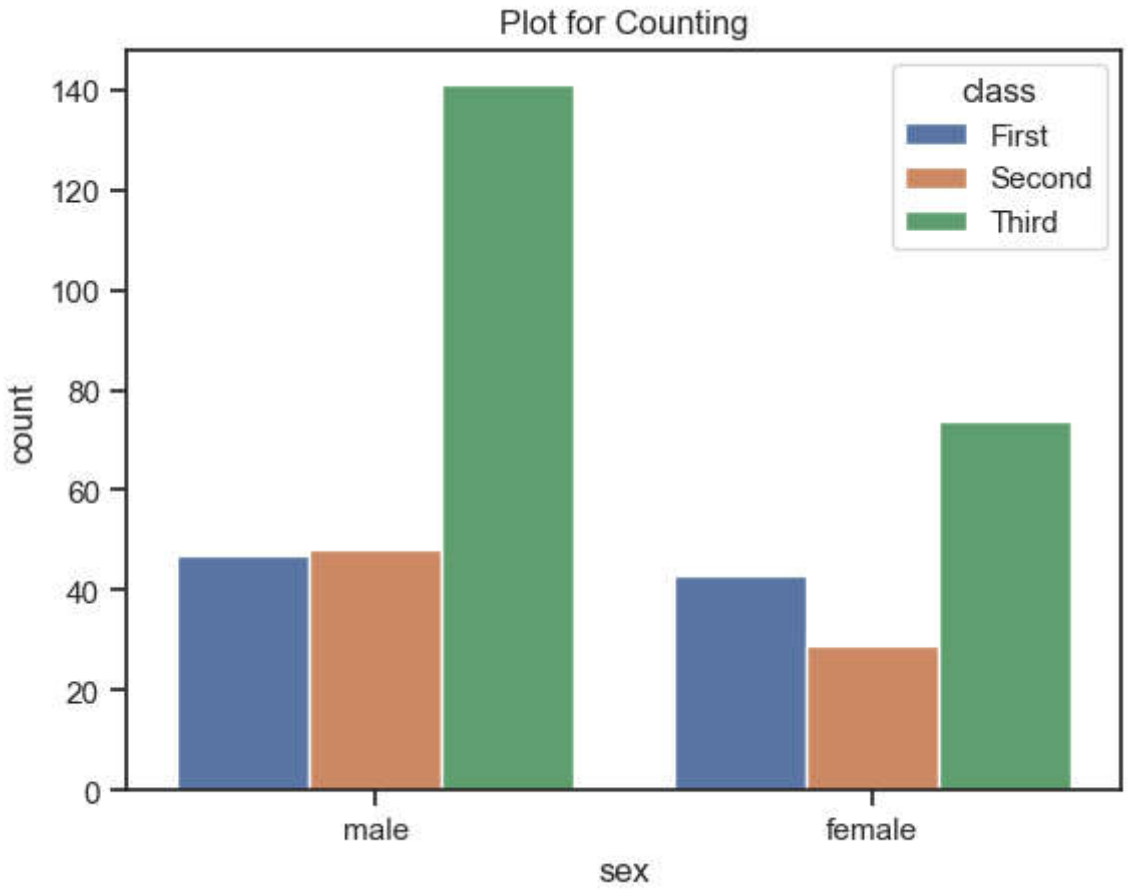
b- Statical proportions (means and their comparison)

In [12]:
```
import seaborn as sns
import matplotlib.pyplot as plt
sns.set_theme(style="ticks", color_codes=True)
titanic = sns.load_dataset("titanic")
sns.catplot(x= "sex", y= "survived", hue="class", kind="bar", data=titanic)
plt.show()
```

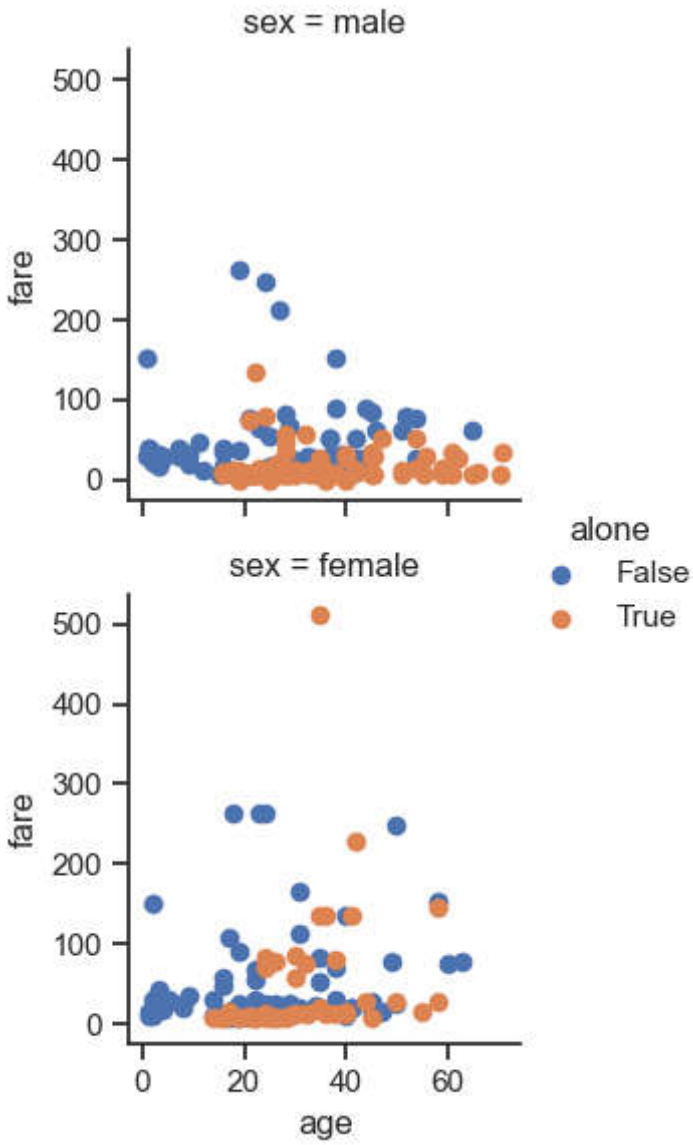


In [7]:
```
import seaborn as sns
import matplotlib.pyplot as plt
sns.set_theme(style="ticks", color_codes=True)
titanic = sns.load_dataset("titanic")
p1 = sns.countplot(x= "sex", hue="class", data=titanic)
```

```
p1.set_title("Plot for Counting")
plt.show()
```



In [10]:
```
import seaborn as sns
import matplotlib.pyplot as plt
sns.set_theme(style="ticks", color_codes=True)
titanic = sns.load_dataset("titanic")
g=sns.FacetGrid(titanic, row="sex", hue="alone")
g=(g.map(plt.scatter, "age", "fare").add_legend())
plt.show()
```


sex = male
sex = female
fare
age
alone
False
True
0
100
200
300
400
500
0
20
40
60

In [ ]: