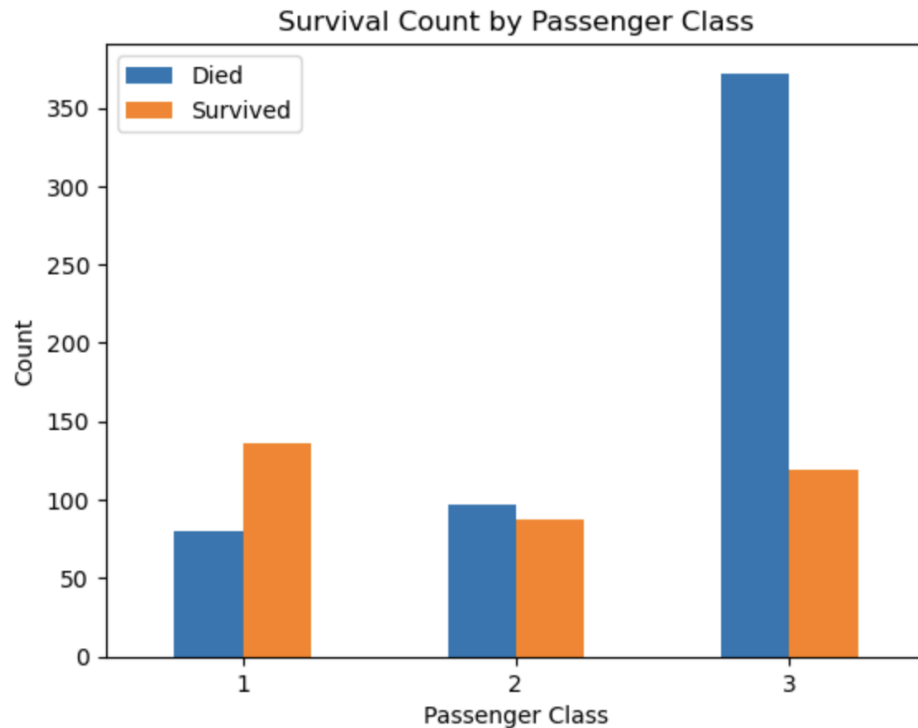


Assignment 3-part 2

Source_dataset: Titanic

Hypothesis 1: Determine if the survival rate is associated to the class of passenger



A side-by-side graph has been plotted to determine if the survival rate is associated with the class of passenger.

From the graph, we can see that **passenger class 3 has the highest survival rate.**

Chi_square test:

Chi-squared value: 102.88898875696056

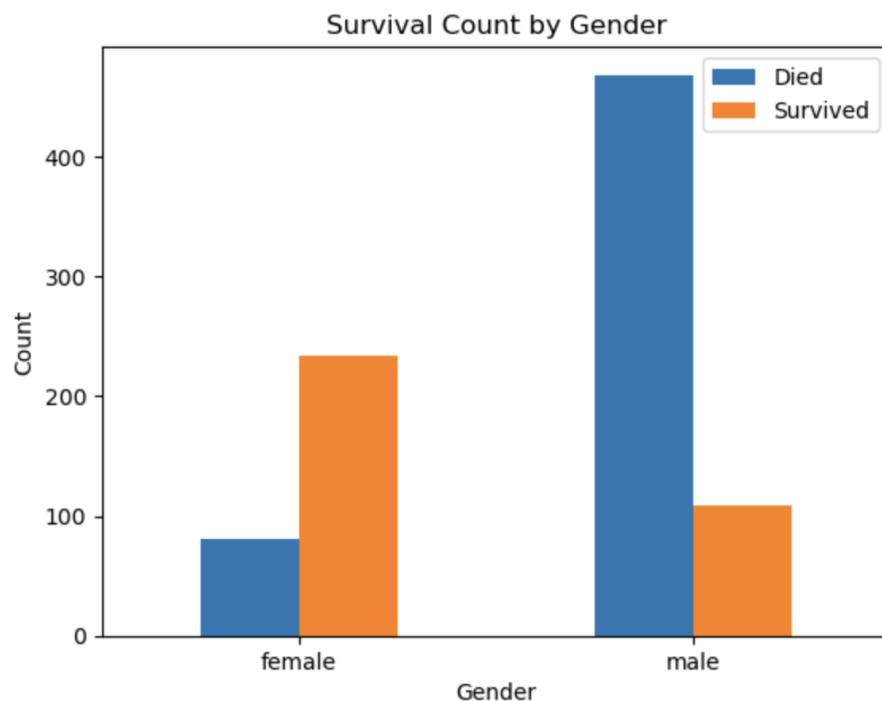
Degree of freedom: 2

P-value: 4.549251711298793e-23

From the above test, we can compare the chi-square value and the decision point to understand the association. The degree of freedom corresponds to the decision point(DP) of 5.99. Since the chi-square value is greater than DP, thus we have significant data to conclude that survival rate and passenger class are not significantly independent of each other.

Hence we can conclude that survival rate is associated with the class of passenger.

Hypothesis 2:Determine if the survival rate is associated to the gender.



A side-by-side graph has been plotted to determine if the survival rate is associated with gender.

From the graph, we can see that **females had a higher survival rate compared to men.**

Chi_square test:

Chi-squared value: 260.71702016732104

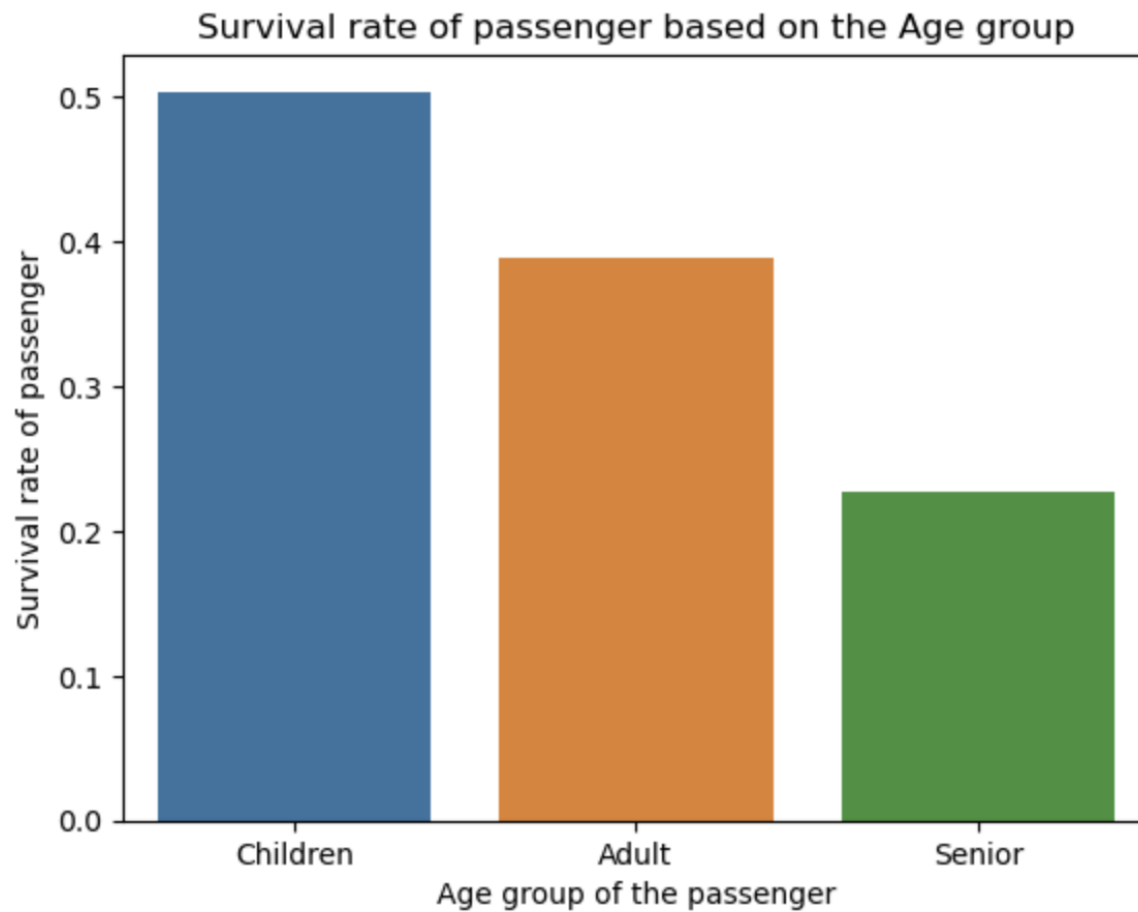
Degree of freedom: 1

P-value: 1.1973570627755645e-58

From the above test, we can compare the chi-square values and the decision point to understand the association. The degree of freedom corresponds to the decision point(DP) of 3.84. Since the chi-square value is greater than DP, thus we have significant data to conclude that survival rate and gender are not significantly independent of each other.

Hence we can conclude that the survival rate is associated with the gender of the passenger.

Hypothesis 3: Determining the survival rate is associated to the age



For the above analysis, the age group has been split into 3:

- Children (0-18)
- Adult (19-60)
- Senior (61-100)

From the graph we can see that children had more survival rate when compared to other age categories.