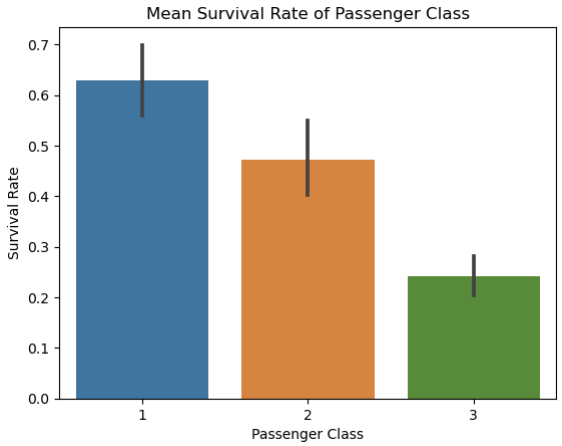
1. Determine if the survival rate is associated to passenger class

```
Pclass
1    0.629630
2    0.472826
3    0.242363
```



From the mean survival rate of each class and the bar graph, it appears that class 1 passengers had higher survival rate than class 2 passengers, which had higher survival rate than class 3 passengers.

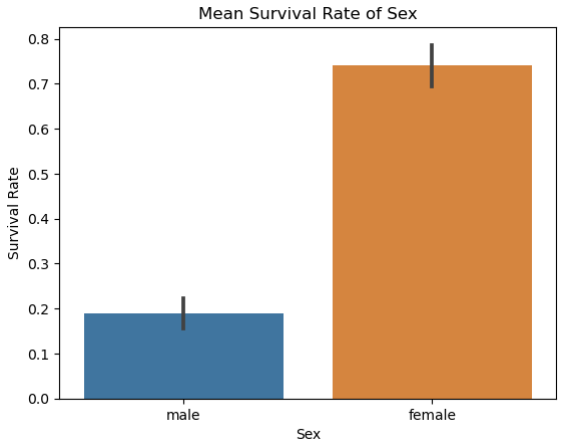
H_0 = Survival rate is independent from passenger class
H_a = Survival rate is associated with passenger class

```
X²: 102.89
p-value: 4.55e-23
DoF: 2 -> Decision point = 5.99
```

X^2 of 102.89 is greater than of decision point for DoF of 2 (5.99); therefore, H_0 is rejected, and that survival rate is dependent on passenger class.

2. Determine if the survival rate is associated to gender

```
Sex
female    0.742038
male      0.188908
```



The mean survival rate of female almost quadrupled that of male survival rate according to both the table and the bar graph.

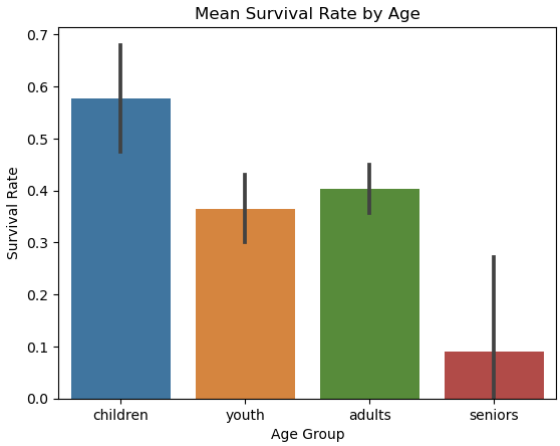
H_0 = Survival rate is independent from gender
H_a = Survival rate is associated with gender

```
X²: 260.72
p-value: 1.20e-58
DoF: 1 -> Decision point = 3.84
```

As X^2 of 260.72 is much greater than of decision point for DoF of 1 (3.84); therefore, H_0 is rejected, and that survival rate is significantly dependent on the gender.

3. Determine the survival rate is associated to age

```
AgeGroup
adults      0.402353
children    0.576923
seniors     0.090909
youth       0.365000
```



Higher survival rate is observed in children followed by adults, youth, and seniors according to both the table and the bar graph.

H_0 = Survival rate is independent of age
H_a = Survival rate is associated with age

```
X²: 15.39
p-value: 1.51e-3
DoF: 3 -> Decision point = 7.82
```

X^2 of 15.39 is greater than the decision point of 7.82 for DoF of 3; therefore, H_0 is rejected. Survival rate is associated with age.