# Exercise 8 Write UP

Looking at the results from the pattern detection, it is clear there were a couple factors that, especially in combination, contributed to your chances of surviving the Titanic crash. Here are the top 8 rules produced by the apriori algorithm:

|  |  |
| --- | --- |
| 1 | {'2nd', 'Child'} |
| 2 | {'2nd', 'Female', 'Child'} |
| 3 | {'Female', '1st'} |
| 4 | {'Female', 'Adult', '1st'} |
| 5 | {'2nd', 'Female'} |
| 6 | {'Female', 'Crew'} |
| 7 | {'Female', 'Crew', 'Adult'} |
| 8 | {'2nd', 'Adult', 'Female'} |

Of the top 8 patterns, not even one contains a Male, so certainly being a man hurt your chances of surviving substantially. This is the same for 3rd class passengers. The top two rules overlap quite a bit, as do the 2 below them, so we know that some males from both of those groups survived as well, or else the female version of the pattern would appear exactly as often as the generic. Ultimately, considering women and children could board first, it makes sense that female children are the most likely to survive. Lift helps us a great deal in determining this, because we have a random assortment of data that is skewed across our many variables. Just analyzing percentages might be misleading, and besides, we are most interested in how much certain characteristics changed the outcome for those individuals, and lift allows us to capture that nuance.