COMP-4475 - Exercise 3

The solution to this is fairly simple. A man and a woman being at the bar together creates six possible outcomes. You can immediately get rid of three outcomes because, alice and her husband are not together at the time of the murder, so they cannot be together at the bar or together at the beach. One child is alone which means that their pairing cannot be together at the bar or together at the beach. One twin is a victim and one twin is innocent which means alice and her brother cannot be together at the bar or together at the beach because one twin needs to be at the beach and the other twin needs to be at the bar. That leaves these three scenarios left at the bar:
Scenario 1: Husband - Daughter
Scenario 2: Son-Alice
Scenario 3: Brother-Daughter
In scenario 1 it puts brother and Alice at the beach as murderer and victim which we know can't be true because one is the victim and the other is innocent.
In scenario 3 it puts alice and husband at the beach at the time of the murder which we know from rule 4 on the assignment is false.
Leaving the only possible solution to be scenario 2.

To solve the problem in the code I send the 5 variables, Killer, Victim, Man, Woman, Child into a large IF statement that all needs to be true. \+togetherAH eliminates all scenarios that alice and husband are together. \+twin eliminates all scenarios where the twins are together. manWomanTogether creates the scenarios of a man and woman at the bar together. The next four lines eliminates the possibility that the man at the bar can also be the killer or victim. And same goes for the woman. Child alone just grabs a child variable. Then after that the child can't be the Killer, Victim, Man, or Woman.