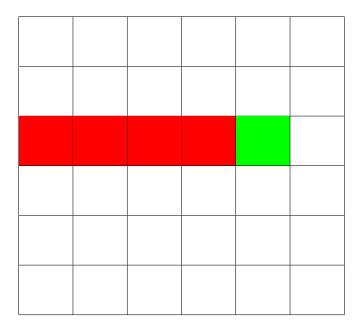# COSC 2123/1285 Algorithms and Analysis
Assignment 2: Battleship Game
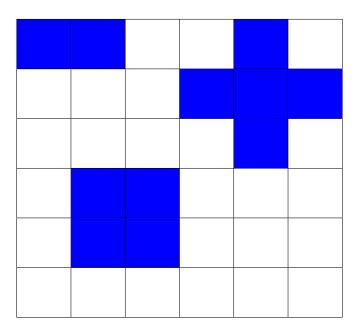
Task 4 - Case 5

For this Task you are expected to demonstrate your understanding of Strategy II, i.e., guessing and firing the next cell through computing the probability distribution for the remaining cells, using the example that is provided here:
The first board shows the player's view where the red cells show *missed* cells and the green cell shows a *hit* cell. Assume the player has fired the cells randomly so far but has just learnt about Strategy II and want to give it a try.

In this task, you are required to:

   a. compute the probabilities for the remaining cells from the first board and report the probabilities for row 2 and 3.

   b. choose and report the cell, (*row, column*) with the highest probability (in case of a tie, choose the top leftmost cell among the candidates) as the player's next guess.

   c. recompute the probabilities based on the miss/hit feedback from the board below and report the updated probabilities for row 2 and 3.

The following board shows the opponent's view, which you need to determine the outcome of the player's guess, i.e., miss or hit feedback. **NOTE:** When calculating probabilities, assume you do not have knowledge of where the ships are. This board is only used for hit/miss feedback to determine how the next probability should be calculated.

1   Notes

- Please note that for this Task, the size of the board is 6×6, and the ship set, S, only includes KoKo, Cruiser and Unicorn.

- Row and column indices start at 0 with row indices increasing from bottom to top and column indices increasing from left to right (please see Figure 1 in the Assignment specification).

- You are expected to write the answer to this Task **in the same pdf document** that you submit for Assignment 2.

- Please include the Case number, i.e., Case 5, in the first line of your answer for Task 4.