Flood-It – Analysis of proposed heuristics :

Heuristic 01:

For the current board I count the distinct number of colors in the board. If there are N distinct colors in the board, then for making the board of just one color we will need at least N-1 steps.

So, there can be no solution less than N-1. As a result, this is an admissible approach for solution.

Heuristic 02:

The board which is more flooded than other boards will have minimum no of moves. So, if I select that board, I think I can get an admissible solution for reaching the goal step. For the board I mark the position of flooded region. Then find the size of the flooded grid. Then return the difference of the total grid and flooded grid as heuristic value for this board.

Implemented Function:

One major function is creating the next possible state of the current board. For this purpose, there is a function named “neighbor”. First, I try to find the neighbor of the currently flooded area by iterating the grid. So, I write a function named “neighbor_01” but as it became very complex so I next decided to use DFS approach (using stack) for finding the neighbors. After finding the neighbors then I created the next possible state and save it in an array list.

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