Results Assignment-1

# Problem Set A03-A11

## BFS Results

statistics: probB03.bwp method BFS planlen 3 iter 27 maxq 47

statistics: probB04.bwp method BFS planlen 4 iter 32 maxq 55

statistics: probB05.bwp method BFS planlen 5 iter 108 maxq 147

statistics: probB06.bwp method BFS planlen 6 iter 220 maxq 194

statistics: probB07.bwp method BFS planlen 7 iter 553 maxq 447

statistics: probB08.bwp method BFS planlen 8 iter 806 maxq 506

statistics: probB09.bwp method BFS planlen 9 iter 1204 maxq 597

statistics: probB10.bwp method BFS planlen 10 iter 2136 maxq 646

statistics: probB11.bwp method BFS planlen 11 iter 1899 maxq 602

## A\* Results

statistics: probA03.bwp method A\* planlen 3 iter 3 maxq 7

statistics: probA04.bwp method A\* planlen 4 iter 8 maxq 16

statistics: probA05.bwp method A\* planlen 5 iter 5 maxq 13

statistics: probA06.bwp method A\* planlen 6 iter 44 maxq 37

statistics: probA07.bwp method A\* planlen 14 iter 157 maxq 217

statistics: probA08.bwp method A\* planlen 12 iter 70 maxq 114

statistics: probA09.bwp method A\* planlen 10 iter 94 maxq 153

statistics: probA010.bwp method A\* planlen 11 iter 118 maxq 171

statistics: probA011.bwp method A\* planlen 14 iter 51 maxq 80

# Problem Set B03-B11

## BFS Results

All my BFS results ended up exceeding the MAX possible iterations.

## A\* Results

All my A\* results ended up exceeding the MAX possible iterations.

# Explanation of my Heuristic Functions:

*Note: All the heuristic function can be seen in line 26-36 in blocksworld.cpp and their implementations in Node::update\_stats function.*

h(1): Default Heuristic: This function is using the four things in order to get the heuristic calculated. One of them is depth of the node in the search-tree and second is number of incorrect blocks, third is distance of blocks from their correct-position ***for each block*** calculated using the distance formula and estimation of min moves required to get each block into correct place.

h(2): Depth + Distance of each block from correct-position ***for each block*** calculated using the distance formula.

h(3): Number of incorrect blocks + depth of the node in the search tree.

h(4): Number of incorrect blocks + distance of the nodes from their correct location + depth of the node in search tree.