

# TDT4136 - Assignment 3

Filip F Egge

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### Subproblem A.1 - Grids with Obstacles

Figure 1: Board 1-1

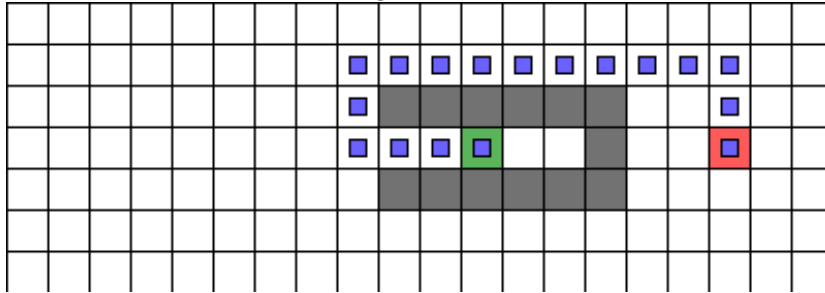


Figure 2: Board 1-2

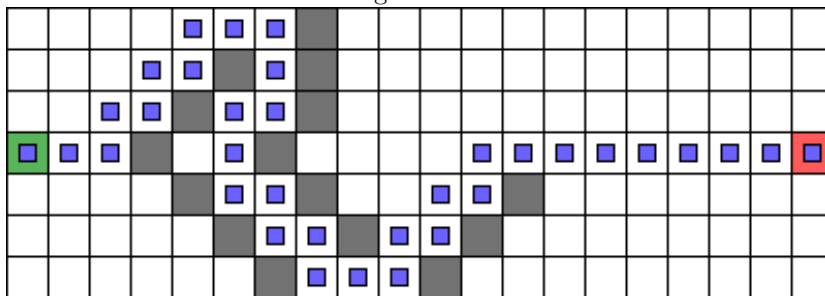


Figure 3: Board 1-3

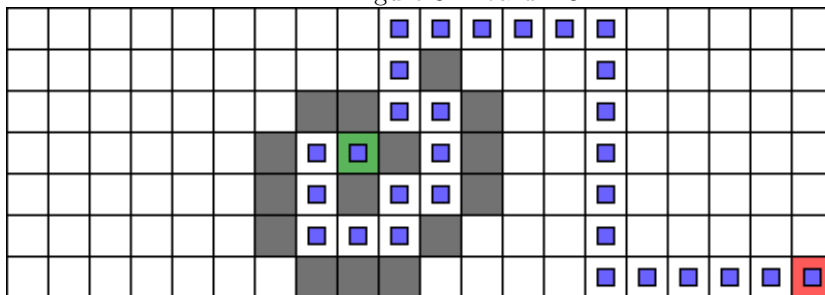
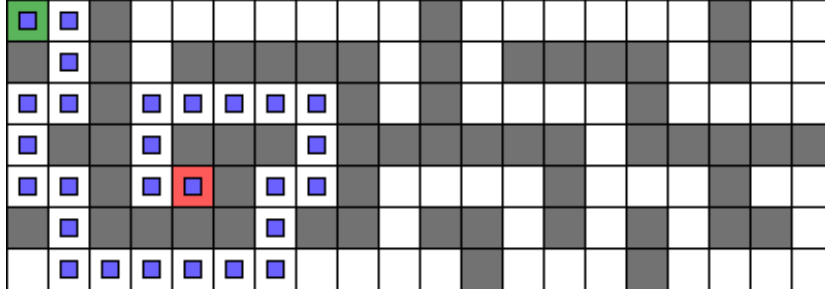


Figure 4: Board 1-4



## Subproblem A.2 - Grids with Different Cell Costs

Figure 5: Board 2-1

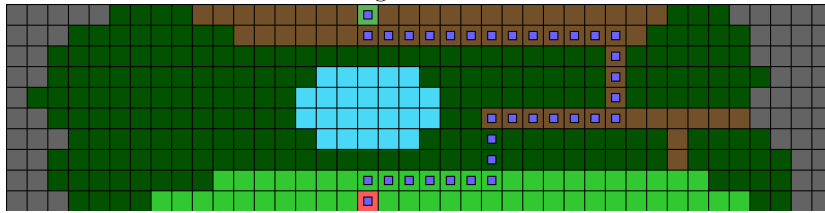


Figure 6: Board 2-2

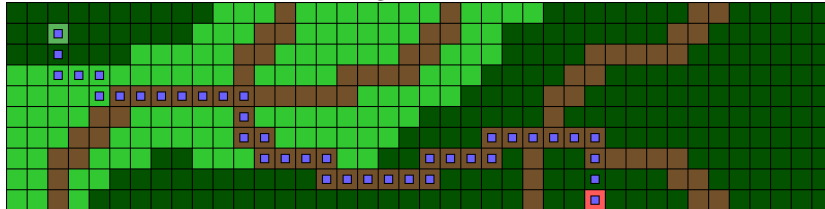
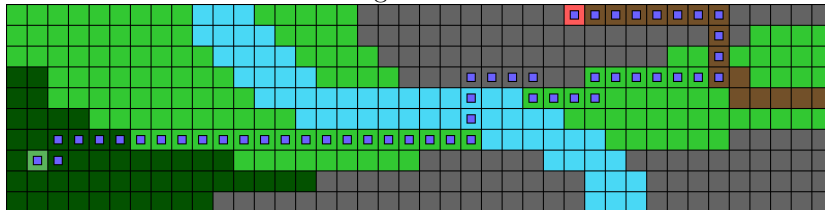


Figure 7: Board 2-3



[illegible]

For this part of the exercise i modified BFS to use a FIFO queue and Dijkstra to sort the open list on  $g(s)$ . This however did not seem to work with my implementation, and i tried finding where i went wrong. I spent to long trying to figure it out, and desided to deliever in it's current state. For the visualization i used red squared for nodes in the closed list, and yellow for nodes in the open list.

The grid is 10x10. The grey squares are located at (row, column) coordinates: (3, 4), (3, 5), (3, 6), (3, 7), (3, 8), (3, 9), (4, 4), (4, 5), (4, 6), (4, 7), (4, 8), (4, 9), (5, 4), (5, 5), (5, 6), (5, 7), (5, 8), (5, 9), (6, 4), (6, 5), (6, 6), (6, 7), (6, 8), (6, 9), (7, 4), (7, 5), (7, 6), (7, 7), (7, 8), (7, 9), (8, 4), (8, 5), (8, 6), (8, 7), (8, 8), (8, 9), (9, 4), (9, 5), (9, 6), (9, 7), (9, 8), (9, 9). The yellow squares are at: (1, 4), (1, 5), (1, 6), (1, 7), (1, 8), (1, 9), (2, 4), (2, 5), (2, 6), (2, 7), (2, 8), (2, 9), (3, 1), (3, 2), (3, 3), (3, 10), (4, 1), (4, 2), (4, 3), (4, 10), (5, 1), (5, 2), (5, 3), (5, 10), (6, 1), (6, 2), (6, 3), (6, 10), (7, 1), (7, 2), (7, 3), (7, 10), (8, 1), (8, 2), (8, 3), (8, 10), (9, 1), (9, 2), (9, 3), (9, 10), (10, 1), (10, 2), (10, 3), (10, 10). The blue squares are at: (1, 2), (1, 3), (1, 4), (1, 5), (1, 6), (1, 7), (1, 8), (1, 9), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6), (2, 7), (2, 8), (2, 9), (3, 4), (3, 5), (3, 6), (3, 7), (3, 8), (3, 9), (4, 4), (4, 5), (4, 6), (4, 7), (4, 8), (4, 9), (5, 4), (5, 5), (5, 6), (5, 7), (5, 8), (5, 9), (6, 4), (6, 5), (6, 6), (6, 7), (6, 8), (6, 9), (7, 4), (7, 5), (7, 6), (7, 7), (7, 8), (7, 9), (8, 4), (8, 5), (8, 6), (8, 7), (8, 8), (8, 9), (9, 4), (9, 5), (9, 6), (9, 7), (9, 8), (9, 9), (10, 4), (10, 5), (10, 6), (10, 7), (10, 8), (10, 9). The green square is at (5, 6). The red squares are at (5, 7) and (6, 9).

[illegible]

Figure 11: BFS - Board 1-2

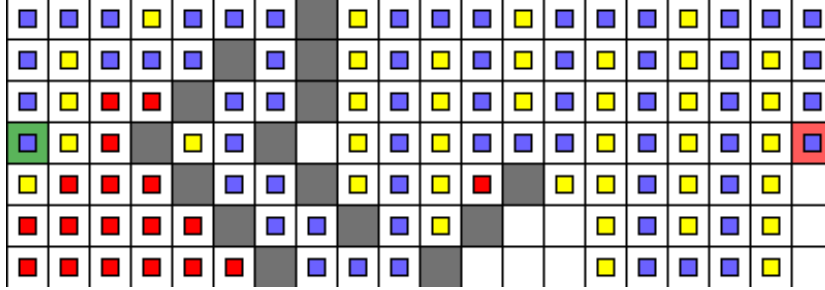


Figure 12: Dijkstra - Board 1-2

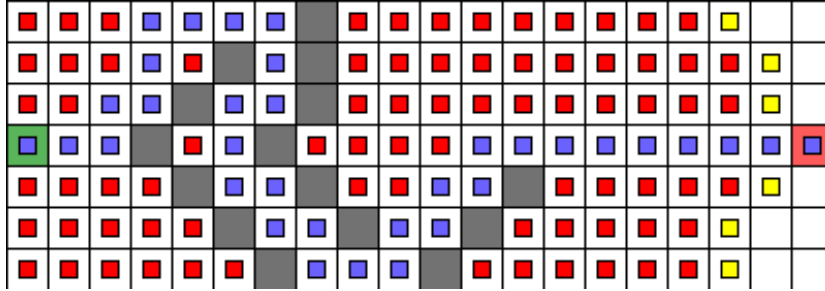


Figure 13: BFS - Board 1-3

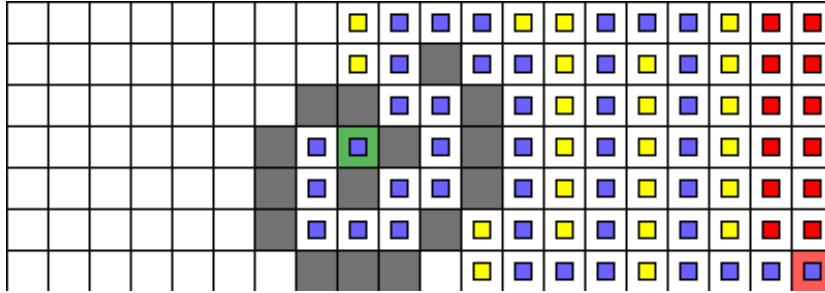


Figure 14: Dijkstra - Board 1-3

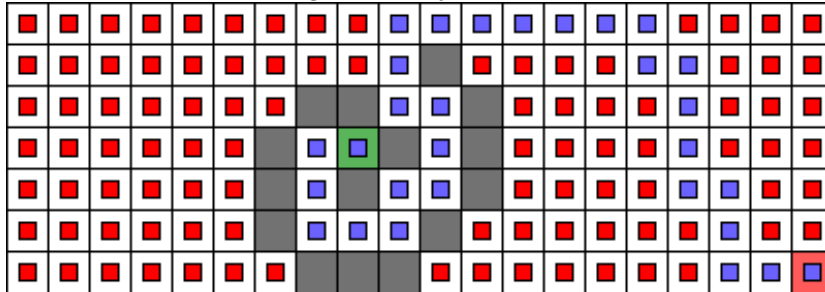


Figure 15: BFS - Board 1-4

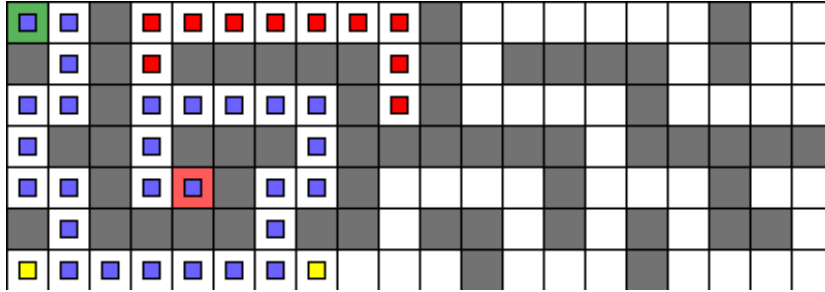


Figure 16: Dijkstra - Board 1-4

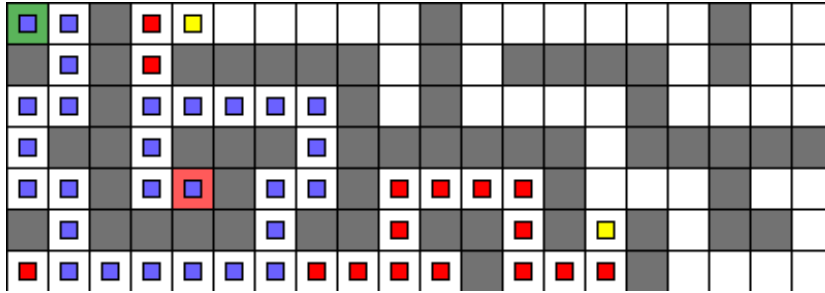


Figure 17: BFS - Board 2-1

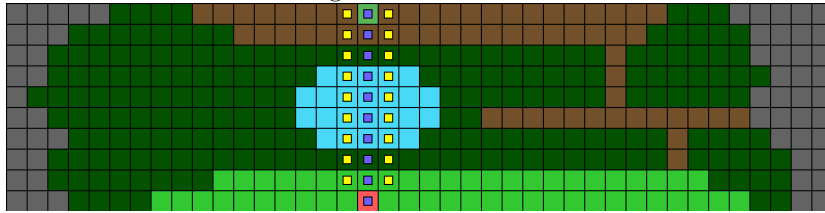


Figure 18: Dijkstra - Board 2-1

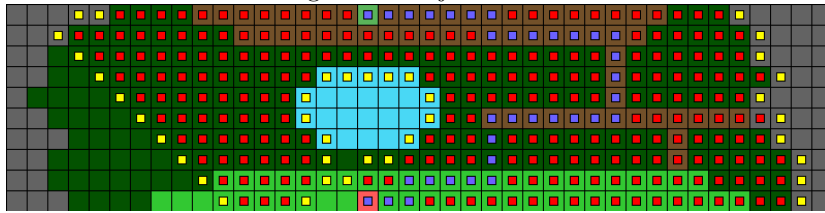


Figure 19: BFS - Board 2-2

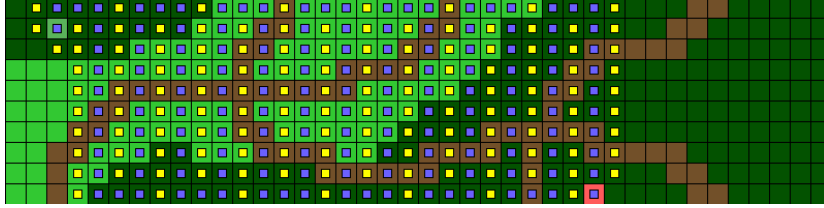


Figure 20: Dijkstra - Board 2-2

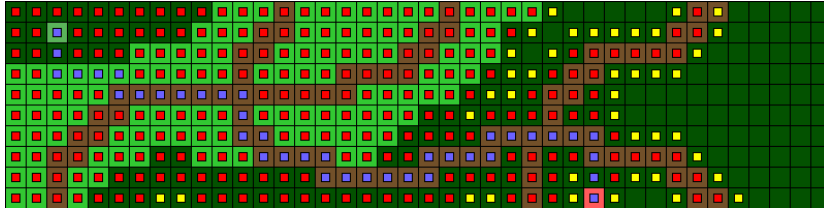


Figure 21: BFS - Board 2-3

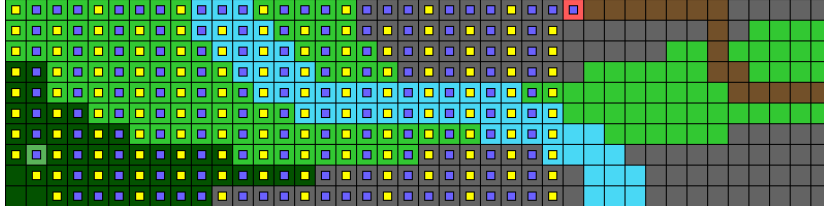


Figure 22: Dijkstra - Board 2-3

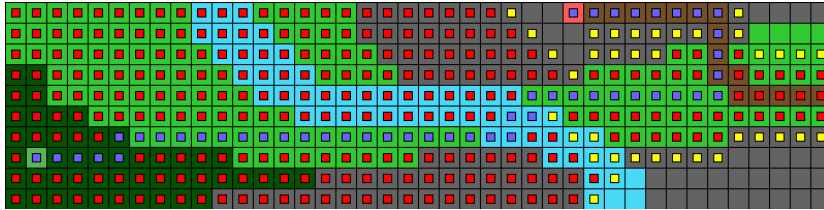


Figure 23: BFS - Board 2-4

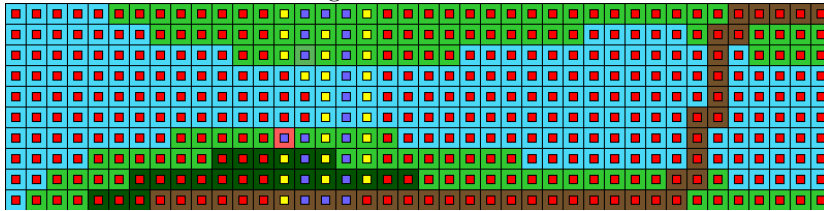


Figure 24: Dijkstra - Board 2-4

