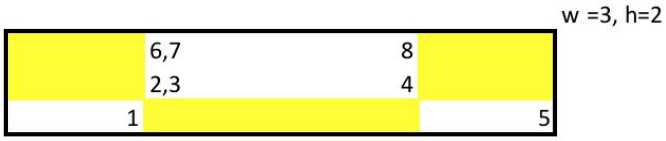
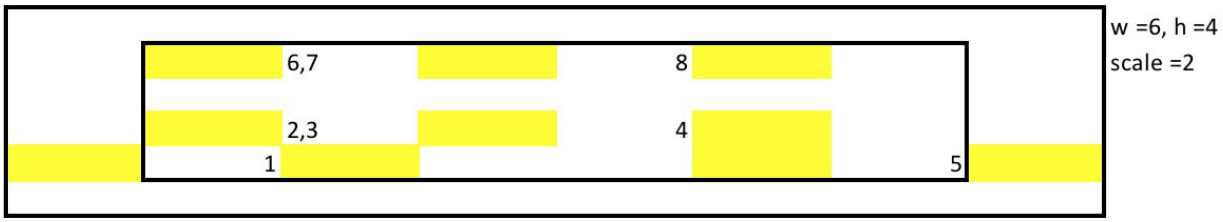
Beverly Abadines
ID# 45045110

Status Report
Week 1 : Mapping

Scaling of the Problem:
The top rectangle represents the original layout of the problem. The bottom represents how the layout is expanded by 2 and walkways are allowed around the shelves. The inner rectangle from the bottom image represents the platform for the shelves, while the outer rectangle shows the entire warehouse. The yellow blocks show valid places for a person to stand and shelf packages.





Deliverables
Breadth First Search (BFS) was used to traverse the grid. The algorithm returns paths based on any starting point and any item found in warehouse-grid.csv. It also knows to exclude shelves from its traversable path. The way it displays its shortest path, however, is by printing out *all* of the places it has travelled. In a way, it returns the cut-set of the problem until it reaches the item.

Output Format: (int x-coordinate, int y-coordinate, bool found item?)

I also tried to write an auto parser, which generate .csv files that scales to the new platform. For reasons unknown (so far) the auto parser only works on my local machine, not the server. For now, use ***warehouse-grid_modified.csv***

What can Professor Dang do to help?
I wanted to use newer commands from the C++ 11/14, such as “emplace” from the map library and other commands from fstream. The auto-parsing of the csv files worked on my local machine, but not on the server. Could the libraries on the server be updated to use C++ 11/14?

I also tried to create a map which logs where the shelves are and how many items are in each shelf, but ran issues with calling the find function with a struct as a key. Could you go over how to use maps with structs?

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How to Run:
make clean
make
./main

```
[babadine@crystalcove Mapping_W1]$ ./main
What is the file name?
warehouse-grid_modified.csv
What is the max warehouse width?
18
What is the max warehouse height?
10
By what factor should we scale the map?
2
Does this file need calibration? Y or N?
N
Starting x-coord?
0
Starting y-coord?
0
Product ID?
1
(0, 0, 0)
(0, 1, 0)
(1, 0, 1)
```

Because the parsing does not work on the server yet, the only values that can be changed are the **x-coord, y-coord,** and **Product**. Other values should follow the example above.