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In writing this assignment, the first thing that I had to consider was how am I going to get the data from the file into a workable data structure? Well, a 2d array would work perfectly since the data is in grid format, so the only thing left to do is get the dimensions to build the array. This led to me making the getDimensions function. It gets the dimensions for a files data, which are then used to create, and by extension populate the arrays. I would have included the array population in the function as well, but I couldn't get the array to work as a parameter. The pattern recognition is pretty straight forward, I manually check if there is a match through if statements, then count the number of times a match is found. Once that is done, it checks through again and prints out the coordinates of the matches it finds.

One big problem I had was a memory overflow, so that when I ran a pattern that was big enough, it would overwrite the array I used to store the pattern. I think there might be a type conversion somewhere that I am not taking into account that was causing the memory overflow, but for now I got it working by adding 4 extra spaces to the size of the array parameters, since it was consistently overwriting from the fourth-from-last column.

Besides the above mentioned, I don't think there is anything that could make it crash or fail, but because of the way that I checked for patterns in the arrays, that patterns are limited to being 3x3. While the pattern could be greater than 3x3 technically, the program will only check the first 3x3 grid of the pattern.