Lab 14 - Recursion Maze

Goals

By the end of this lab you should:

- have a recursive function capable of generating an ascii maze.

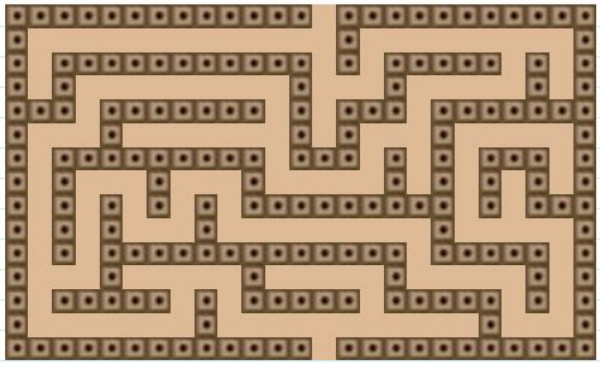
Collaboration policy:

For this assignment, collaboration **IS ALLOWED**. You will be working on the first stages of a larger programming assignment.

The Minotaur

In Greek mythology, the Minotaur was a monster with the body of a man and the head and tail of a bull. The Minotaur was the offspring of the Cretan Queen Pasiphae and a majestic bull. Due to the Minotaur's monstrous form, King Minos ordered the craftsman, Daedalus, and his son, Icarus, to build a huge maze known as the Labyrinth to house the beast. The Minotaur remained in the Labyrinth receiving annual offerings of youths and maidens to eat. He was eventually killed by the Athenian hero Theseus.

What a terrible creature. One can only imagine the disposition of such a thing, half man and half cow, condemned to wander around forever in a twisted Greek housing project. But how did such bovine architecture come to be? Daedalus wasn't keen to let slip the details of its creation. Perhaps he didn't create it after all. I submit that it was the Minotaur who actually did most the work in carving out the labyrinth and I will even advance a formula to support it.



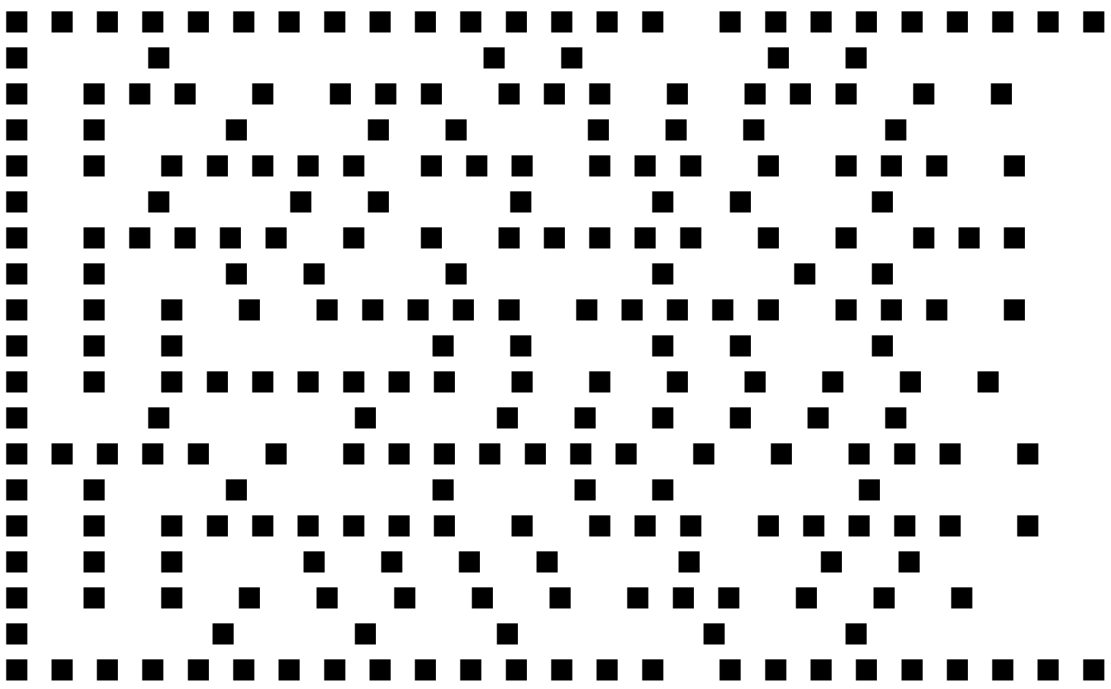
Suppose we have a field of standing stones. It doesn't matter where the Minotaur enters the field. What does matter is he can only step in any of the 4 compass directions, North, South, East, or West. Now suppose this bull-headed creature is so strong he can knock down two stones in a row. He chooses a random direction and promptly breaks down one stone and then another one by ramming them with his head and then he has to rest.

The formula goes like this:

1. Look for two stones to break down.
2. Choose a direction at random.
3. Knock down those two stones.
4. Repeat

Note: You will have to also randomly designate an entrance and exit point for the maze. Just make the exit point somewhere on the opposite wall.

Create two constants for the row and size of the 2d array. Suggested size 11 rows, 13 columns. Works best if the number of rows and columns are odd numbers. If you want to avoid getting double walls, make sure your entrance is at an odd index. If you want to make your maze look a little better, you can use the unicode character \u25A0 to print a black box instead of a letter. Place a space after each character for a more even output as shown below.



Submission:

Zip file on Canvas. Remember to test your code on goormide before you submit. To compile

your code, I will be using the command: **`g++ -std=c++11 *.cpp`**