Alycia Riese

Data Structures Project 4

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Abstract

The purpose of this project was to create a maze with a connected path between the top left cell and the bottom right cell. The user is prompted for a number of rows, number of columns, and whether or not they want to see each iteration of the maze creation. The maze is created with the provided number of rows and columns and is created. Then, two random cell positions are chosen and if they are next to each other, the wall is smashed. This will continue until the top left cell and the bottom right cell are connected.

File Manifest

- a.out - Linux executable output file.
- build.sh - Build script used to compile program.
- DisjSets.h - Header file for Disjoint Sets provided from website
- DisjSets.cpp - Code file for Disjoint Sets provided from website with modified find function.
- maze.h - Header file for maze from website.
- maze.cpp - Code file for maze that implements functions defined in maze.h
- mazeCell.h - Header file for each cell object in the maze.
- buildMaze.cpp - Main code file that handles creation of maze and smashing walls.

Analysis

a. What does it mean for two cells to “be connected” with respect to this maze?

   If two cells are connected in the maze, this means they have the same root node, so they belong to the same set.