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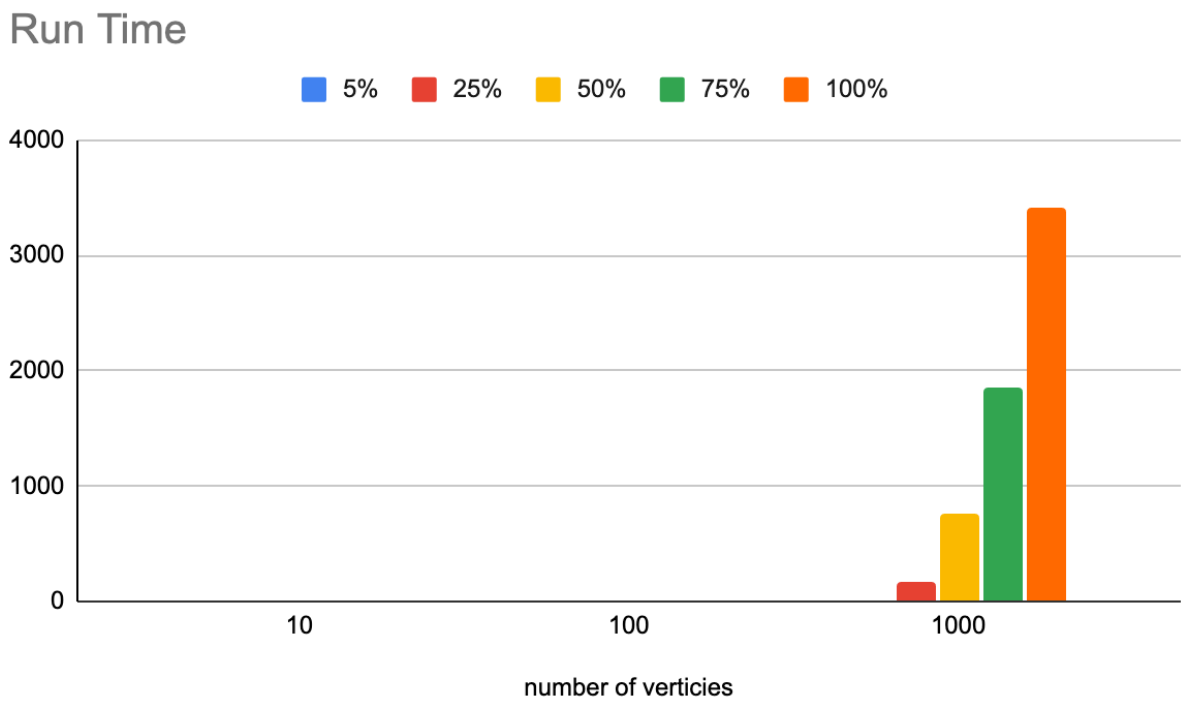
CSCI 115 Spring 2024

Projects Part 1

The way our application works is once you run it, the terminal prompts the user to type in a ‘1’ if they want to run the first part of the project or a ‘2’ if they want to run the second part of the project. If the user inputs ‘1’, then the terminal will ask what map the user wants to run: 1, 2, 3, 4, or 5. Once the user inputs the map they want to use then the map will be displayed. The terminal will then prompt the user to either input ‘n’ for movement, or ‘q’ to quit the application. Once the user inputs ‘n’, the character will move one cell of the map which is the shortest path. The user will need to continue to press ‘n’ until the character reaches the destination. Once the character reaches the end, the simulation is done. If the user inputs ‘2’ for the second part of the project, the program will automatically start calculating the run time for finding the shortest path and print out the runtime for each scenario.

Project Part 2 Report



This graph represents the run time in milliseconds for the number of vertices with different percentages of connectivity. The shortest path algorithm speed was tested with these parameters. Even though 10 and 100 vertices are difficult to see on this graph, the 1000 vertices show a clear pattern. The shortest path algorithm becomes slower the more that the vertices are connected. This is because it has more paths to consider before deciding on the shortest path.

This also proves that the algorithm calculates the shortest path, not just the smallest weighted cell near the character.