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CS 402 Project Report

Description:

For my project I wrote a text-based adventure game that allows the play to traverse a randomly generated map looking for the stairs down to the next level. Along the way the player will encounter monsters, drink from wells, and discover artifacts.

You play the game by choosing a direction to move from your current tile. Every time the player moves, they have a chance at triggering an encounter. There are four types of encounters. The well replenishes the player’s health to full. The artifact grants the player additional experience points. A monster will engage in combat with the player until one of the two dies. The fourth is a chance at the player finding nothing when they move.

In the game, the player can save and load their characters so they can resume their game at a later date.

Development:

While working on this project, I worked with various features in C more in depth. I created a 4-linked list to manage the map. I was able to allow a player to save and load their characters. I also imported all map tiles from files. I was also able to create a randomly generated map from the map tiles. By creating a project that used many files, I learned more about how multiple files interact when imported to another program.

My biggest success and failure was creating the randomly generated map. It was easily the most time consuming part of my project. While I was able to get it working, I did it iteratively. I could not figure out how to set one up using recursion. Before I was able to get it working, there were multiple times I also set up a number of predefined maps that would be randomly chosen. Due to the time it took to get the randomly generated map working, I did not have time to actually add descriptive text to the various map tiles. They have text that identifies various tiles but that is it.

While working on the project, I had to rethink how I handled random numbers a few times. I first tried to use the rand function from C, but I later found code for the Mersenne twister prng. I then incorporated the functions in the mersenne twister to let me generate the random numbers I needed.

List of files and Relationships:

main\_test.c – This file is the main file. This runs the game.

encounters.c/h – These files determined which random encounter happened and then called the appropriate functions to handle the encounter.

combat.c/h – These files handled any combat that happened between a monster and the player.

npc.c/h – These files handle the creation and manipulation of the monsters used in the program.

player\_character.c/h – These files handle the creation and manipulation of the player’s character.

random\_rolls.c/h – These files handle the determination of the random numbers in various formats.

mersenne\_twst.c/h – These files contain the code for the Mersenne twister prng. I use these functions in random\_rolls.

map\_tiles.c/h – These files handle the importation and manipulation of the map.

Folders:

Saves – Folder that holds the saved games.

Map Tiles – Folder to hold the map tile files which the program imports.

Documents – Holds various documents I used. I have temporary code I was playing with as

I tried to get the random map to generate. I also have some early project notes.

Instructions:

To run the game, you should just have to run the makefile. That will create the main\_test.exe to run the game. I’ve included instructions in the game, but a basic overview is you enter your choice on the menu’s as they appear.