LAB REPORT

LAB #8

SECTION #2

FULL NAME

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Problem

Write a program that makes a maze game which has an avatar that is controlled by the movement of the DS4 controller. The game is won when the avatar reaches the bottom of the screen. If the avatar cannot move, the game is lost. The avatar can only move through empty spaces and not walls.

Analysis

A two dimensional array is used to make the maze and the difficulty of the maze is based on the difficulty inputted. A while loop is used and an integer flag variable is used to check whether the user has won the game or not.

Design

I used srand to seed the difficulty. I included the <stdlib.h>. I created an integer variable named flag, and then checked its value at the end of the while loop to determine if the user had won the game or not. If the if(flag) statement turned out to be true the program outputted "YOU WIN!" and otherwise it would output "YOU LOSE!"

Testing

I tried playing the game myself to make sure it worked. I reached the bottom of the screen to see whether the game would end and it would output the winning message. I tried seeing if the game would end if the avatar was stuck in a "bucket".

Comments

PART 1:

1. Explain the differences between the raw data and the averaged data in your graph for part A.

The raw data is the values directly from the controller. The averaged data takes those values and averages by a certain number in the buffer. If the buffer was 10, 10 values would be taken and averaged to make one value. This smoothens out the erratic movement of the controller

2.

2. Explain the delay you used to ensure character movement is not erratic.

I used a delay to make sure character movement wasn't erratic. The character only moves after a set time rather than immediately rapidly. I used a delay to the time to make sure.

PART 2:

1. Describe how you checked if the avatar could safely move down, and go left/right.
    I checked the position next to the character to see if it was an empty space, only if it was an empty space did the character move, otherwise the character stayed still.

2. Describe what was necessary to check for the player losing the game.
    I used an if statement which checked if all the positions next to the charcter were empty or not. If they were, it would break out of the loop. I also used an integer flag so that I checked outside the loop whether the game was won or not.

Screen Shots