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CS 161

Assignment 7

Understanding

This week we are working on arrays, c-style strings and command by arguments. These assignments are a continuation of last week's topic.

The first exercise has us adding up the arrays sum by rows, columns and diagonal direction. We will then check to see if all of the rows, columns and diagonal directions are the same sum. If they are, it will tell the user they all are the same. In the second exercise, we get the user's input to determine the size of the arrays. We will then get the user's input and had it to the array. If they array's are symmetrical, it will let the user know that it is symmetrical. The project is a game of Tic Tac Toe. This combines everything done in exercise one and two. We will get the number of games the user wants to play as a command line argument and then convert that into an integer that can be used as the number of games they want to play.

Design

1) Make a game board (1 for new and 1 to keep track of the game)
    a. Game board will be what is displayed throughout the game
2) Make function for win variation(row, column, diagonal)
    a. Make two for loops.
    b. Make a xsum counter and a osum counter.
    c. Insert the counters into the loop's if/else statement
    d. Make another if else statement that checks for a win
    e. This will be for all three variations
3) Make a function for a draw
    a. Make an if/else statement that has the player turns = 9 as one condition and if the wins return false
4) Make function to mark the game board x or o
    a. Make a char for the x and o
    b. Make an if else statement to determine who inputted the input
    c. Assign x or o to the char
    d. Make the coordinate = the char
5) Make function to get the input from the user
    a. Make an if/else statement that tells which player to input their coordinate
    b. Call the input function
    c. Make an if/else statement with the condition for the player, and making sure the board is open
    d. If it is taken, let the user know it is taken
    e. The input function will check each character at a time and assign it to a blank array.

6) Make an array for the game board
7) Make integers for the sum of the x and o values
8) Make counters for the player turns and game counter
9) Make a function to determine the player number
10) Make two while loops: one to track new games and one for the game
    a. Put the new game board function and game board function in the first loop
    b. In the second loop, add the player input function
    c. Make an if/else statement that has the check win function as it's condition

Testing

Prompt	Input	Expected Output	Actual output
Use single input	1	Invalid	Invalid(actual message is longer)
Input a letter	1 a	Invalid	Invalid
Valid input	2 0	X or O in that coordinate	X or O in that coordinate

Reflection

This week was pretty tough for me. I had limited time to work on the assignment this week so I rushed on most of the assignment. I lost part of my assignment due to my computer crashing so I got help on the first part of the assignment from friends and had them sit down with me as I made this program. Most of the trouble came from the command line argument. I had a tough time wrapping my mine around the concept of it. I had to watch extra videos online to get a better understanding on how it works. Up until now I had worked on the exercises before the project but because of time constraint I completed the project before exercise 2. I got stuck on exercise 2 but when I returned to it after completing the project part of the assignment, it was much easier to complete.