CECS 174 – Project 3

Monty Hall's 'Let's Make a Deal' – Make a single program that allows the user to choose between Part A, Part B, or to Quit. Allow the user to repeat the program until they would like to quit. Check all user inputs for invalid entries.

Part A – Create a program that asks the player to choose between three doors: Door #1, Door #2, and Door #3 (make sure the user gives a valid input). One door has a random chance of holding a prize and the other two doors have Zonks. After the player has chosen a door, Monte reveals one of the doors that holds a Zonk (but never the one the player chose) and then asks the player if they would like to stay with the door they just chose or to switch to the remaining closed door. After they decide whether to switch, the prize is revealed, and if the player's final choice is the same as the winning door, then the player wins, otherwise they lose.

Implement your program within a loop so that the player may play the game multiple times by going back to the main menu. Keep a count of how many wins and losses the player has. Calculate and display the percentage of wins after each game.

Part B – Add a section to your program to have the computer simulate playing the game. On each iteration, have the computer randomly choose a door and then randomly choose whether to switch. Repeat for 10,000 iterations, keep track of the number of wins versus losses as well as the number of times the player switched and won versus staying and winning. At the end of all of the iterations display the percentage of wins versus losses when switching and staying.

Question: In the long run, is it better to switch or to stay with your first choice?