User Manuel

All the user has to do is run the code and it will automatically calculate the win and losses before and after the switch and also will so the win to lose percentage.

System Manuel

In the first function it takes the mod of 3 which is 0, 1, 2 and I create an if statement for each of the numbers to create all three scenarios. If x is equal to 0 than door 1 will be C, door2 will be G and door3 will be G. If x is equal to 1 than door 2 will be C, door1 will be G, door3 will be G. If x is 2 than door3 will be C, door1 will be G and door2 will be G.

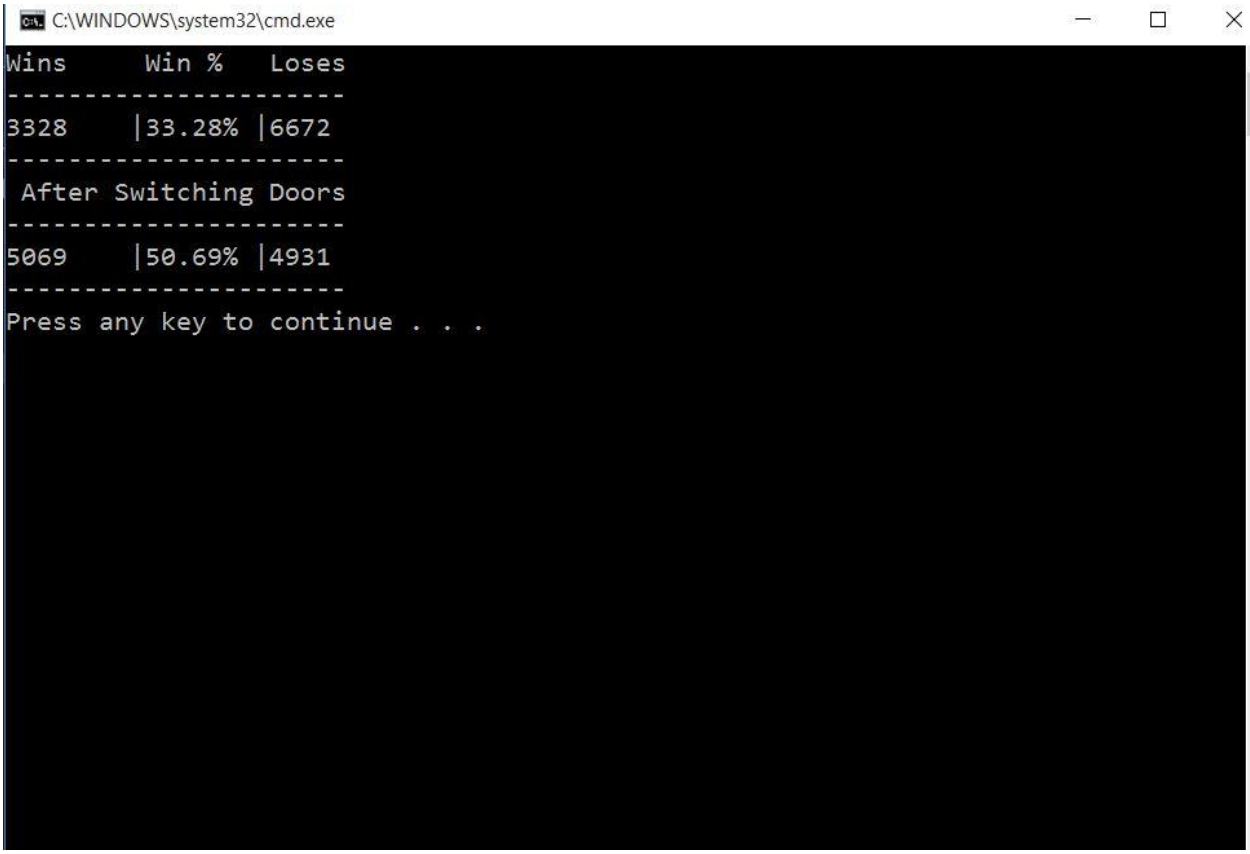
In the second function it takes a random integer from what is being mod and what is being added to it and it assigns that number to the doorMonty. The if statement will only be true if both the conditions are true otherwise it moves on to the next statement until one of them returns true and when that occurs the inside of the if statement also becomes true.

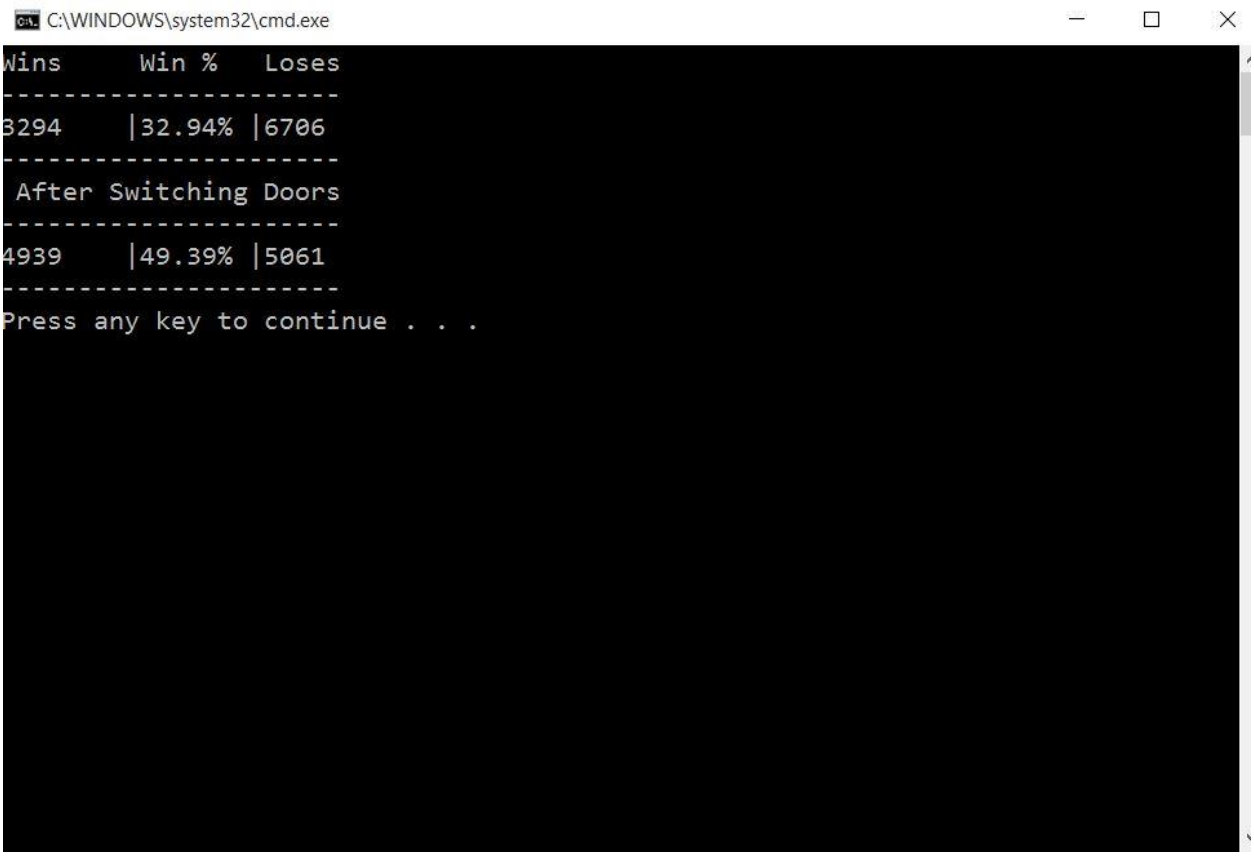
The third function shows every possible the choice of switching the player can make. It makes the player switch to the only other door there is left because one door is opened by Monty and the other is chosen by the player leaving one other door to choose from.

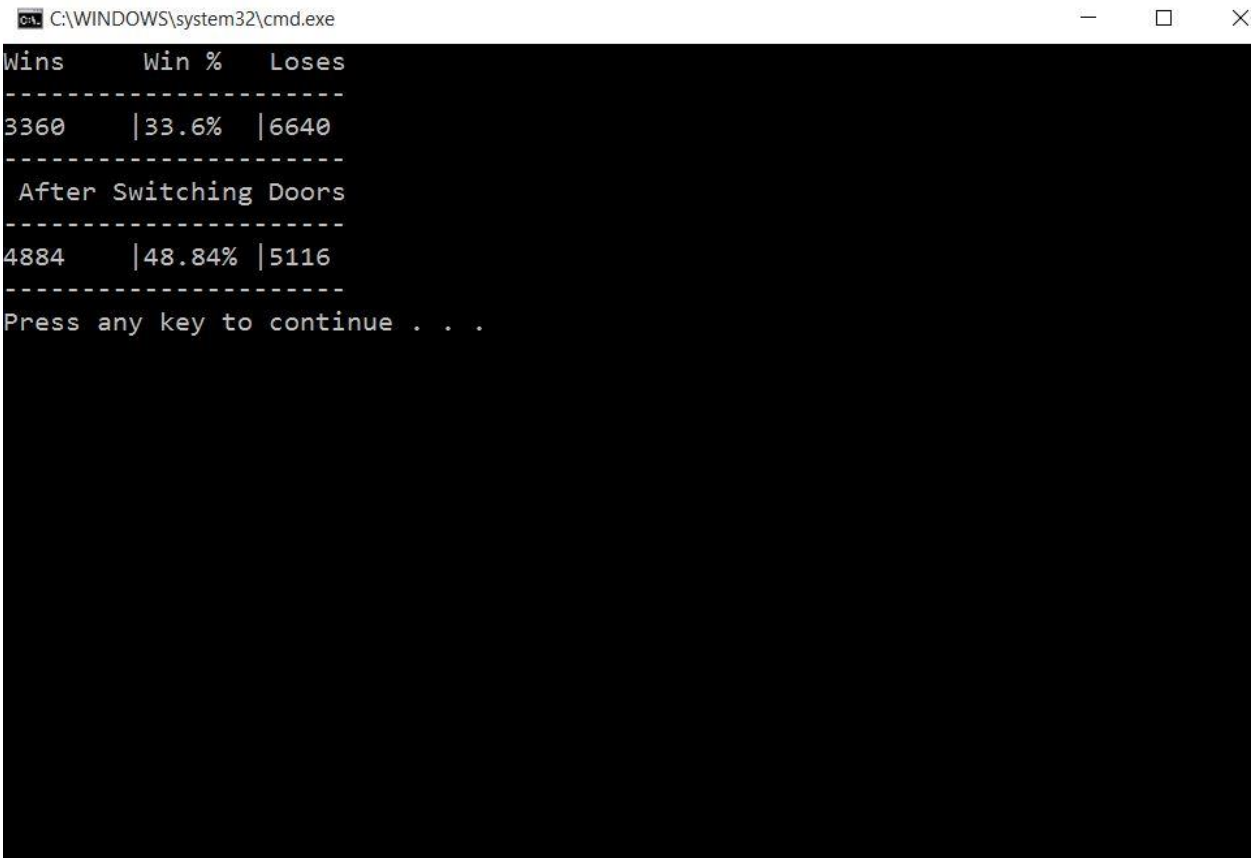
In the main function I redefine the variables as 0. I created a for loop that makes the program run 10,000 times. I called the first two functions and created three if statements that count the number of wins the player has after 10,000 times of playing. After the first three if statements I called the third function which just switches the players options and counts up the number of wins from the three if statements. After the for loop ends I cout the function variables and created a chart with those calculated variables. I calculated the number of losses by subtracting 10,000 the number of times the program ran by the number of wins.

Conclusion

Based off the results of this lab it goes to prove that after the player has chosen a door and Monty has opened on door with the goat, the player will have a higher chance of winning if they switch doors. If you think about it logically it makes no sense but in terms of mathematical calculation it does make sense. After running the program 10,000 times the player had a higher win chance if they switched doors.


C:\WINDOWS\system32\cmd.exe
Wins Win % Loses
3328 |33.28% |6672
After Switching Doors
5069 |50.69% |4931
Press any key to continue . . .


C:\WINDOWS\system32\cmd.exe
Wins Win % Loses
3294 |32.94% |6706
After Switching Doors
4939 |49.39% |5061
Press any key to continue . . .


C:\WINDOWS\system32\cmd.exe
Wins Win % Loses
3360 |33.6% |6640
After Switching Doors
4884 |48.84% |5116
Press any key to continue . . .