The Monty Hall Problem
For this game imagine that there are three doors. Behind one of the doors is a fabulous prize - say a vintage 1968 Dodge Dart with hardly any rust. Behind the other two doors is something you would have to feed - a goat. To play you choose a door which you hope has the car. Before the door is opened, the game host opens one of the remaining two doors and shows you a goat. Remember that since he is the host he knows where the car is and he always opens a door that has a goat. The host then gives you a choice. You can stick to your original guess or you can switch. For example, if you originally choose door 1 the host might open door 2 and show you a goat. He then gives you the opportunity to switch your choice from door 1 to door 3. The door of your final choice is opened at that time and you get whatever is behind it.

The burning question here is "Should you switch?". For this assignment we will simulate 3,000 Monty Hall games. For the first 1000 games the player will choose not to switch doors. For the second 1000 games the player will always switch doors. For the third 1000 games the decision to switch or not will be decided by the flip of a coin. Your program should then print out the statistics for each set of 1000 games. Your output should look something like this:

Simulation 1 - player never switches doors.
   Total games simulated:  1000
   Total games won by player: aaa
   Percentage won by player: bb.b%

Simulation 2 - player always switches doors.
   Total games simulated:  1000
   Total games won by player: ccc
   Percentage won by player: dd.d%

Simulation 3 - player randomly switches doors.
   Total games simulated:  1000
   Total games won by player: eee
   Percentage won by player: ff.f%

You can use the rand() function to simulate the player's choice of doors by generating a random number from 1 to 3. You can likewise use rand() to simulate where the car is located. For simulation 3 the rand() function can be used to determine whether or not the player switches her choice of doors.

Turn in a printed copy of your source code along with a copy of the output screen to show that your program works.