**Name:**

**Java Programming**

**Lab Exercise 11/9/2023**

1. Game simulation. In the 1970s game show called "Let's Make a Deal", a contestant is presented with three doors. Behind one door is a valuable prize, behind the other two are gag gifts (such as a goat). After the contestant chooses a door, the host opens up one of the other two doors (never revealing the prize, of course). The contestant is then given the opportunity to switch to the other unopened door. Should the contestant do so? Intuitively, it might seem that the contestant's initial choice door and the other unopened door are equally likely to contain the prize, so there would be no incentive to switch. Write a program monteHall.java to test this intuition by simulation. Your program should ask the user how many games N, play the game N times using each of the two strategies (switch or don't switch) and print the chance of success for each strategy.
2. Write a program that will calculate the probability that 2 people will have the same birthday in a class of size 2 to 50. Use Monte Carlo simulation to accomplish this task.