Pre-class preparation

Please read the following textbook sections from Blitzstein and Hwang's *Introduction to Probability* (second edition):

- Section 2.10

Objectives

By the end of the day's class, students should be able to do the following:

- Estimate conditional probabilities using simulation.
- Use simulation to model Gambler's Ruin and the Monty Hall problem.

Reflection Questions

Please submit your answers to the following questions to the corresponding Canvas assignment by 7:45AM:

1. Consider a new version of the Monty Hall game: Instead of 3 doors where one contains a car and 2 contain goats, there are 100 doors where one contains a car and 99 contain goats. After the player picks a door, Monty opens 98 other doors that contain goats, and asks the player if they would like to switch to the remaining door. Write an algorithm in R that can estimate the probability that a player wins the car if they choose not to switch doors. *Your response should include your algorithm's code, as well as your estimate of the probability based on running the simulation.*
2. (Optional) Is there anything from the pre-class preparation that you have questions about? What topics would you like would you like some more clarification on?