

# The Monty Hall Problem

The Monty Hall problem is a brain teaser, in the form of a probability puzzle, loosely based on the American television game show Let's Make a Deal and named after its original host, Monty Hall.

In the problem, you are on a game show, being asked to choose between three doors. Behind each door, there is either a car or a goat. You choose a door. The host, Monty Hall, picks one of the other doors, which he knows has a goat behind it, and opens it, showing you the goat. (You know, by the rules of the game, that Monty will always reveal a goat.) Monty then asks whether you would like to switch your choice of door to the other remaining door. Assuming you prefer having a car more than having a goat, do you choose to switch or not to switch?

Build an application that shows which strategy is best: to stay or to switch. The application should allow the user to choose between one of the two strategies and provide the number of simulations to run. After running the simulations the resulting number of wins using that strategy should be reported.

The technical requirements for the application are to build a react app with a Spring Boot backend. In the interface you should be able to enter the number of simulations to run and choose whether or not to change the door. When a button is pressed the application calls the backend to perform the requested number of simulated games. When the simulations are completed the results returned from the backend are displayed.

To get started quickly we recommend you take advantage of our prepared project at <https://github.com/ComHem/crm-monty-hall-test>