Monty Hall Exercise

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1. See the text of my Monty Hall simulation below.

```
doors <- c('A', 'B', 'C')

# create our scorecard
results <- tibble(
  trial = 1:10000,
  winner = NA
)

car <- sample(doors, 1)
choice <- sample(doors, 1)
reveal <- sample(doors[doors != car & doors != choice], 1)
switch <- sample(doors[doors != reveal & doors != choice], 1)

results[1, 'winner'] <- if_else(car == switch, 'Marilyn', 'Paul')

for(i in 1:10000){
  car <- sample(doors, 1)
  choice <- sample(doors, 1)
  reveal <- sample(doors[doors != car & doors != choice], 1)
  switch <- sample(doors[doors != reveal & doors != choice], 1)

  results[i, 'winner'] <- if_else(car == switch, 'Marilyn', 'Paul')
}
```

2. See the table below for the frequency of Marilyn's win.

```
results %>%
  count(winner) %>% #equivalent to count(results, winner)
  kable(caption = 'Results of Simulation') #knitr function that creates a nice table
```

Table 1: Results of Simulation

winner	n
Marilyn	6725
Paul	3275

3. Stuff

4. Marilyn is right. You win about twice as often when you switch. In our simulation, switching doors won the car 'r filter(results, winner == "Marilyn" %>% nrow()' times.