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7/10/2018

rm(list = ls())

Monty = function(select, times ){  
   
 ## doors  
 door = 1:3  
 ## keep track of # of win  
 win = 0  
   
 for (i in 1:times){  
 prize = floor(runif(1,1,4))  
 init\_select = floor(runif(1,1,4))  
   
 ##reveal 1 door without prize  
 if (prize==init\_select){  
 reveal = sample(door[-c(prize,init\_select)],1)  
 }else{  
 reveal = door[-c(prize,init\_select)]  
 }  
   
 if (select =="stay"){  
 if(prize == init\_select){  
 # print ("WIN")  
 win =win+1  
 }else{  
 # print("LOSE")  
 }  
 }  
 if (select=="switch"){  
 sw=door[-c(init\_select, reveal)]  
 if (prize==sw){  
 #print("WIN")  
 win = win+1  
 }else{  
 #print("LOSE")  
 }  
   
 }  
   
   
   
}  
  
print (paste("Select-", select, ", your win percentage was ", (win/max(times))\*100,'%',sep=''))  
  
}

Monty('stay', 1000 )

## [1] "Select-stay, your win percentage was 31.3%"

Monty('switch', 1000 )

## [1] "Select-switch, your win percentage was 68.8%"