
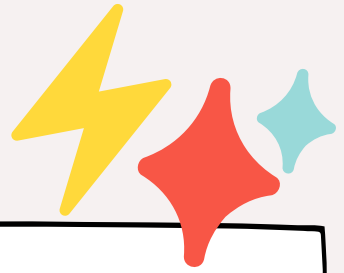


Hi! I'm Dani. I'm a Data Scientist that loves **solving problems** and **creatively communicating solutions**. One of the things I enjoy the most is brain teasers. And I think their visual representation is a great way to solve and understand them. So I hope you enjoy them too!



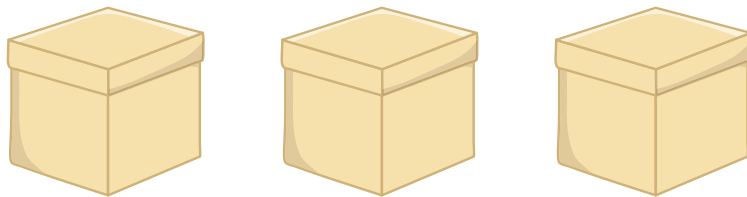
 cartoon of girl with olive skin, brown eyes, medium light brown hair, long lashes, tiny nose, saying hi

# MONTY HALL



The Monty Hall puzzle became famous in 1990 when Marylin Vos Savant solved it in her "Ask Marylin" column. And, let me tell you, her solution was **controversial**! The problem is based on the *Let's Make a Deal* show. It originally uses doors instead of boxes, a car instead of money, and goats instead of no prize.

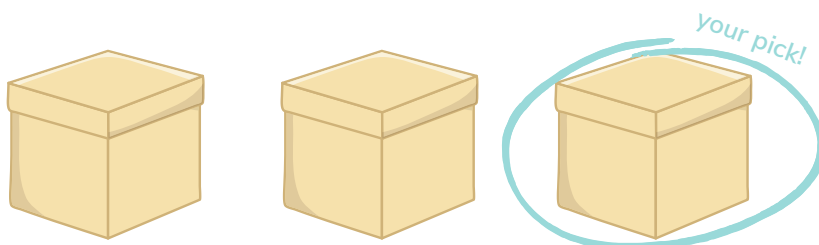
Imagine I give you 3 boxes:



One of them has money  inside, while the other 2 are empty.

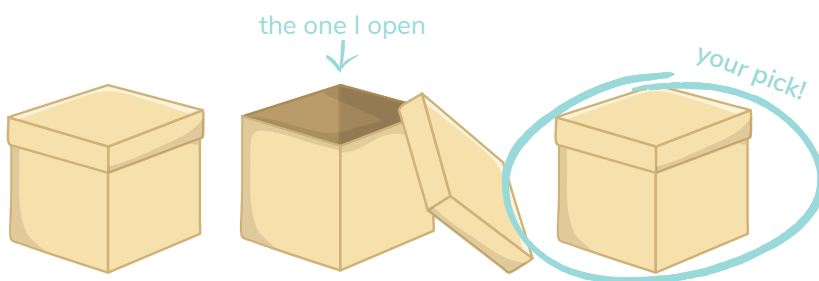
1

I let you pick one box:



2

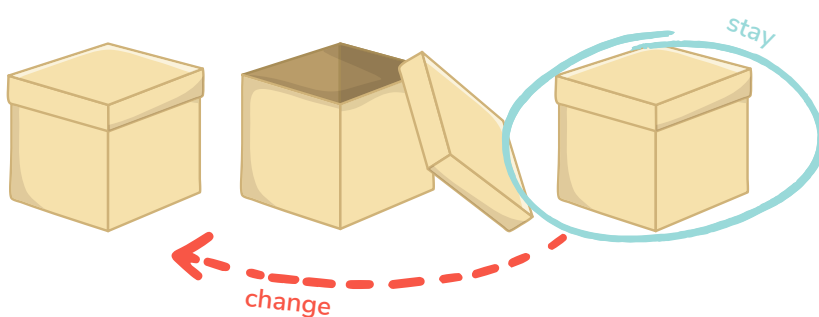
As they're my boxes, I know what's inside of them! So I pick an empty one from the other two and open it in front of you:



3

I give you a chance to change your pick!

Would **change** your box? Or would you **stay** with your original choice?



4



[github.com/datasciencedani](https://github.com/datasciencedani)



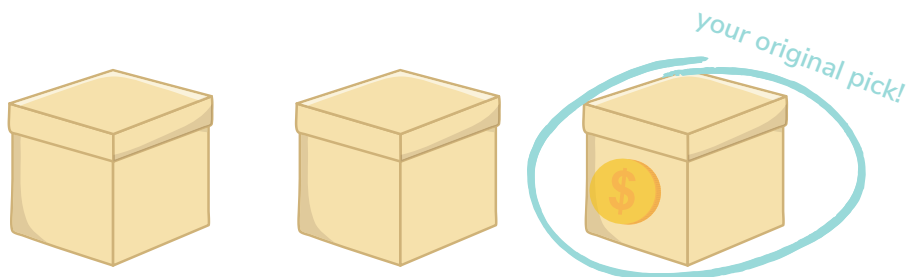
@datasciencedani

# ⚡ ANSWER MONTY HALL ✨

You may think it doesn't matter if you change your choice: as there are two boxes left, there's a 50-50 chance of winning.  
But that's not true! ✖ Let me show you why...

There are 3 possibilities (one for each of the boxes):

1

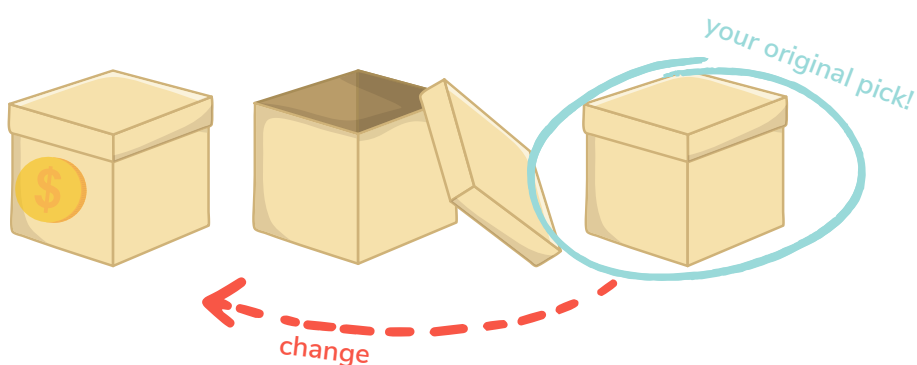


The box you picked has the money. It doesn't matter which box I open... → If you **change** boxes, you lose

→ If you **stay** with your box, you win

So, in this 1st scenario, you must **stay** with your box.

2

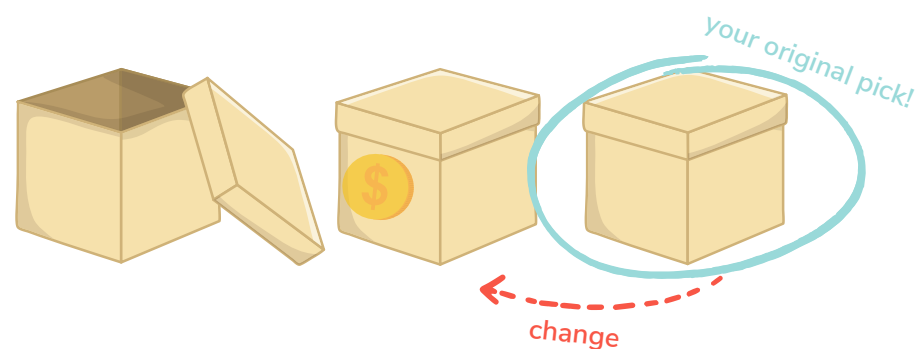


The 1st box you didn't pick has the money inside. So, **as I know what's inside the boxes**, I open the 2nd one you didn't choose. → If you **change** boxes, you win

→ If you **stay** with your box, you lose

So, in this 2nd scenario, you must **change** your box.

3



The 2nd box you didn't pick has the money inside. So, **as I know what's inside the boxes**, I open the 1st one you didn't choose. → If you **change** boxes, you win

→ If you **stay** with your box, you lose

So, in this 3rd scenario, you must **change** your box.

We must **change** boxes to win in 2 out of the 3 scenarios.

So, if we **change**, we get a 66% chance of winning. And if we **stay**, we get a 33% chance. So, we double our chances by changing our box!

This way, the best answer is to change boxes!



github.com/datasciencedani



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