MAGIC SQUARE: HIT AND TRIAL 01

Amit do you see there are nine squares here, yes sir. So you know how pseudoko works? Yes sir i know. Right? This is very similar to pseudoko but you don't have to know pseudoko also i am just trying to see if you if i can motivate it through something to know already. Here are nine squares one two three four five six seven eight nine can you plug in the nine numbers one two three four five six seven eight and nine here so that each side adds up to the same number and each row and column everything whatever whichever way you add should add up to the same number. Ok you were saying that you want some programming challenge right? Yeah yeah. I thought i would start giving you something like this. Go ahead try, so i have to choose the numbers from this set that's right. No repetitions no repetitions allowed yes. The sum should be equal to one particular number right? Correct. The rows all the columns, correct. So this you would be surprised to know that this is this is more than two thousand years old. It was invented it was first noted in china and there is very interesting history you can look up on the internet but the best part is three cross three is very interesting as you increase the dimension it gets more interesting i will tell you something a lot more interesting once you solve this go ahead. Firstly do you think it is easy to solve? I think very easy. Very easy? Go ahead. Ok let me use this number yes two six correct so which would be seven eight fifteen adds up to fifteen so if you right some numbers here even that should add up to fifteen go ahead. Six i have used seven i have used two i have used may be you are yeah write something nine then eleven which means should be a four so what happens here two plus nine is eleven plus four is fifteen, two plus six is eight, eight plus seven is fifteen prefect! But then you should put some numbers here so that this adds to fifteen, this adds to fifteen not just that this adds to fifteen, this adds to fifteen oh! I forgot to tell you even the diagonal should add to fifteen ok go ahead. This is i used nine, four. Ok do one thing you go ahead and try i will take a break and come back sure sir, once you are done let me know, ok got it perfect. Hey amit you have done it, i have been watching you yes perfect perfect, yes it's a four plus three plus eight which is fifteen perfect. You can write fifteen properly here and then fifteen here nine plus five plus one fifteen, nine plus six is fifteen ok remove this and yeah fifteen here fifteen here eight plus one plus six, fifteen seven plus five plus three fifteen, our boy has done it, ok four plus nine plus two fifteen, fifteen look at this nine plus six fifteen, eight plus two plus five plus eight is fifteen perfect. I will ask you another question now this is just one way of doing it, there could be many ways to do this or i don't know this may be the only way can you tell me if there are many ways of doing this, there can be multiples solution also yeah why not, oh my god it took me a lot of time to get this solution also ha ha ha so give me a chalk so what you can possibly do is you can try writing a piece of code as always right? Try to see whatever the total possible ways, how will you go about this? See i solve this in the brute force way trial and error you mean trial and error correct? I change some i put some number ok check what's the sum is going on right? with iteration i found this correct? For this i can write a code definitely and computer can do it in fraction of seconds, so i will write a code same brute force way. Perfect. But it will give me solutions, all the solutions, try doing it. Definitely. I will tell you something more two things one is one

dimension is lower by that i mean let me look at two cross two board which should be something like this so can you tell me what would be the version of this problem here, for two cross two there were nine squares here so you considered one two three four five six seven eight nine. For four squares what would you do? One two three four i will considered. Can you quickly try if this is possible with one two three four i am going to give you just two minutes time. Go ahead something you will observe one two three four. Ok. Basically one should be there somewhere for sure definitely, ok. Diagonal should be same as this one three may be, do one thing let me write it in bold so you say one here and a three here some should be four this should also be four but you have two and four left this become six, you see you can try all possibilities you will observe and it is impossible to do it in two cross two, exactly while it is not possible to do it in two cross two, it is possible in three cross three and surprisingly for four cross four it's so difficult that your computer is not enough, ordinary desktop is not enough to find a solution for four cross four guess why? Think about it, write a piece of code and may be you try explaining why it is not possible for four cross four. Sure yeah. Good job.