ROCK PAPER AND SCISSOR- CHEATING NOT ALLOWED -02

I was a ten old kid when i play a whole lot of games with my dad and dad would invariably win be it arm wrestling or be it running dad was number one or even with indoor games such as chess or tick tack tow anything that involved logic dad would was dad was way faster than me, there is no absolute game where i could win over him and that is when i came across this game called the rock paper scissor where muscle power or logic had no role to play, it was a game which involved sheer luck and i was a happy kid and this game became my the favourite. Let me now tell you the rules of the game called rock paper scissors there are three items here as i told you rock paper and a scissor the point is all these three items are equally powerful and at the same time equally power less every single item is less powerful than some other item and more powerful than some other item for instance a paper is less powerful than a scissor because a scissor can cut though a paper while a paper more powerful than a rock because it can completely cover the rock that's the story with the paper now coming to the rock a rock is more powerful than a scissor as you see a rock can smash the scissor while a rock is less powerful than a paper simply because a paper can cover the rock, lastly a scissor, scissor is more powerful than paper as it can cut the paper into pieces but it is less powerful than a rock as stated already, two people randomly choose an item and they choose one of the three items rock paper or scissor the moment they choose it they declare it by showing the symbol a close fist denotes a rock a palm for a paper and a V symbol for scissor. Once they pick they both decide which item is more powerful than the other and declare who wins as you see there are several possibilities here there is also a possibility of draw please note that is when both people choose the same item, let me give you a few examples assume dad chooses rock and i choose scissors obviously dad wins because a rock can beat a scissor in case dad chooses paper and i chose scissor obviously i won because a scissor cuts the paper and assume dad and me both ended of choosing rock we call it a draw, let me enumerate all the cases. Assume dad chooses rock son also chooses rock it is a draw, dad chooses rock son chooses paper, son wins, dad chooses rock son chooses scissor dad wins, paper and rock dad wins, paper paper obviously a draw, paper and scissors son wins, scissor and rock son wins, scissor and scissor a draw, scissor and paper dad wins these are the only cases you can see, this is a great game to play but with time you will realise that there is room for cheating, how do we patch this up? Is there a way to patch it? The course is about the joy of computing, is there a solution to this problem through programming? Any ideas, here is a straight forward solution this is how the interface will look like after i finish coding, the first player is asked to enter one of the three numbers zero one or two where zero stands for rock, one stand for paper, two stands for scissors so firstly the son comes and enters a number and then goes away from the place, the screen is cleared and then comes dad and he enters his choice of the number zero one two based on what is the item that he has chosen and then he goes away from the place and both of them come together and they observe who won the game, that we both of them are committing to their item nobody can cheat here, the computer finally declares who is the winner well it's very easy to program this but don't you think its cumbersome for dad and son these two players to come inside their room punching their

choice and then go out, they should keep doing this a game requires both of them to come punk and go back and then both of them to come together and then see the result, looks like this is not a feasible way of creating a good interface, is there a better way? Let us see. Here is a very cool way to do this, dad and son they both secretly come and chose a placeholder in a ten digit number, what do i mean by this? Assume these are the ten digit holders and the son says i am going to choose the third digit which means his item is going to be hidden here and dad comes separately and then chooses his placeholder, assume he chooses the seventh digit which means his item will be stored in the seventh digit and then now dad and son both of them sit together, dad doesn't know son's placeholder son doesn't know dad's placeholder they both sit together and they start typing their ten digit numbers by hiding their secrets item in their secret place holder, you see the idea is cool can we make it a little cooler? You see with the lot of intelligence it looks like one person can guess what the other person is choosing it looks like it although i am not so sure, you should tell me whether with some amount of intelligence one player can guess what the other player player secret placeholder is, so let us make this game a lot more complicated. I am going to bring in two new changes to the game so change one, you are not going to assign zero one two for rock paper scissor even that's a secret, a zero for son could be rock but zero for dad could be scissor so they input this information secretly just the way they input their placeholder secretly and the second one would be why take a ten digit number with entries being only zero one two, let us take an ordinary ten digit number each placeholder can be anything between zero one two three four five six seven eight nine, what i will do is, i will put my secret zero one or two in my secret placeholder and you see you can make it further complicated by increasing the number of digits, why necessarily ten digits you can make it fifteen digits or twenty digits right it probably will become difficult for people to enter that bigger number but is till you realise that bigger the number of digits more complicated the game becomes for the other person to guess that is.