**The Game Logic**

**How the computer is able to guess the number chosen by a player?**

There are 6 cards. Each card contains 32 numbers, as shown below.

- Card 1:

`1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63`

- Card 2:

`2 3 6 7 10 11 14 15 18 19 22 23 26 27 30 31 34 35 38 39 42 43 46 47 50 51 54 55 58 59 62 63`

- Card 3:

`4 5 6 7 12 13 14 15 20 21 22 23 28 29 30 31 36 37 38 39 44 45 46 47 52 53 54 55 60 61 62 63`

- Card 4:

`8 9 10 11 12 13 14 15 24 25 26 27 28 29 30 31 40 41 42 43 44 45 46 47 56 57 58 59 60 61 62 63`

- Card 5:

`16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63`

- Card 6:

`32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63`

It is noticable that the first number on the

- first card is

$2^0 = 1$

- second card is

$2^1 = 2$

- third card is

$2^2 = 4$

- fourth card is

$2^3 = 8$

- fifth card is

$2^4 = 16$

- sixth card is

$2^5 = 32$

**What is the significance of these first numbers in all the 6 cards?**

Suppose a player thinks of the number 53 . The player is shown all the six cards. The player will say that their number exits on cards 1, 3, 5 and 6. So, the computer will add the first numbers on these cards to guess the number chosen by the player.

Therefore,

guess = 1+4+16+32 = 53$$

Similarly, if the player thinks of the number 28, then they would say that their number exists on the cards 3, 4 and 5. So, the computer will add the first numbers on these cards to guess the number chosen by the player.

Therefore,

guess = 4+8+16 = 28$$

Just for fun, you can try this logic with all the numbers between 1 and 63 (both inclusive).