**Design Interview Question**

What is Sudoku?

A Sudoku puzzle is a grid of 9 x 9 squares or cells that has been subdivided into nine sub grids or "regions" of three by three cells. See the diagram bellow.

The objective of Sudoku is to enter a digit from 1 through 9 in each cell, in such a way that:

- *Each horizontal row (across) contains each digit exactly once*
- *Each vertical column (down) contains each digit exactly once*
- *Each sub grid or region (box) contains each digit exactly once*

In each Sudoku puzzle, several digits have already been entered (the "givens"); these may not be changed. The puzzle level can be Easy, Medium, Hard, and Expert and based on the level the number of "given" cells will decrease.

Solving a Sudoku puzzle does not require knowledge of mathematics; simple logic suffices. The puzzler's job is to fill the remainder of the grid with digits –respecting, of course, the three constraints mentioned earlier.
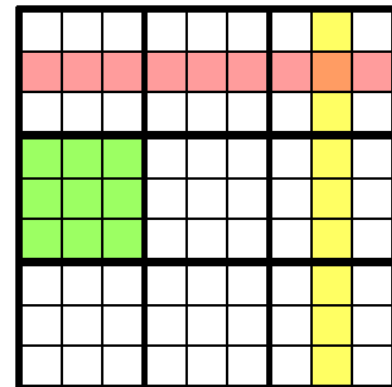
Programming Question:

Please design and code a Sudoku API that a client can use to perform the following operations:

1. Build puzzle
2. Get Cell Value
3. Set Cell Value

Think of the following:

- What will you use to store the data?
- How will you init the program?
- How are you load/build the givens cells of puzzle?
- What methods will this API exposed to the client?
- How are you going to enforce the Sudoku rules?
- How will you test your API?

2		9		7				
		7	2	5	6		9	
	6	4						5
6			3	4	8		1	
9			5		7			8
	8		6	2	9			7
3						9	6	
	9		1	6	2	4		
				3		5		2

Please keep in mind when answering the above question that it is your program and you can design it anyway you want but make sure to communicate that to the client software.