

CSCI-UA.0101-002: Optional Assignment 8:

Sudoku Validator

Due Monday, December 11th at 11:59 p.m.

Instructions:

- The project directory folder for this assignment is called `A8_project_directory_NYUnetID`. Rename `NYUnetID` with your own NYU NetID. For example, my NetID is `gp2442`, so I would rename my project folder `"A8_project_directory_gp2442"`.
- The project directory contains a project directory containing two subdirectories, namely `lib` and `src`. The source files are in `src/edu/nyu/cs/NetID`. Make sure to rename the subdirectory `/NetID` to your actual NYU NetID.
- Complete the code according to the instructions in this document.
- Submit a zip file named `"A8_complete_NYUnetID"` containing your project folder called `"A8_project_directory_NYUnetID"`. Again, `NYUnetID` should be replaced with your NYU NetID.

Sudoku Validator (10 points)

Sudoku is a 9 x 9 grid divided into smaller 3 x 3 boxes. Some cells, called fixed cells, are populated with numbers from 1 to 9. The objective is to fill the empty cells, with the numbers 1 to 9 so every row, every column, and every 3 x 3 box contains the numbers 1 to 9. See the figure below.

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

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

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

Figure 0.1: Example of a Sudoku square. Every row, every column, and every 3x3 box must contain the numbers 1 to 9.

Once a solution to a Sudoku puzzle is found, how do you verify that it is correct? One approach is to check that each cell is a number from 1 to 9, and the cell must be unique on every row, every column, and every small box.

Requirements

Simply complete the two methods `readASolution` and `isValid` inside the source file `CheckSudokuSolution.java`. You will get full marks (10 points) if the program works correctly, you will get 6 points if the program does not work due to one or two minor errors, and zero otherwise.