



**Computer  
Science**

## COMPSCI 105 SS – Assignment One

January 2007

The work done on this assignment must be your own work. Think carefully about any problems you come across, and try to solve them yourself before you ask anyone else for help. Under no circumstances should you work together with another student to solve problems posed in this assignment. Under no circumstances should you lend your assignment solution to another student or allow them to copy your work.

### *Assessment*

Electronic Submission Due:  
Worth 5% of your final mark

4:00 pm Thursday 11<sup>th</sup> January

### *Aims of the assignment*

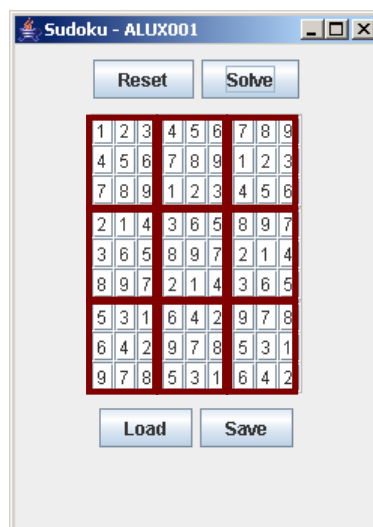
Specific objectives are listed below:

- To read and understand the way an existing application works.
- To write nested loops.
- To work with two-dimensional arrays.

### *Sudoku*

Sudoku is a well-known kind of puzzle that requires the user to fill in a grid of cells according to particular rules.

- Each cell must contain a number between 1 and 9 inclusive.
- Each row in the grid must contain each number between 1 and 9 exactly once.
- Each column in the grid must contain each number between 1 and 9 exactly once.
- Each block of 9 cells (as shown below) must contain each number between 1 and 9 exactly once.



An application that plays Sudoku has been partially completed. You are required to complete the functions that will allow the game to be played.

The application code (which can be found on the web site) consists of the following classes:

- SudokuApplication
- SudokuUserInterface
- SudokuManager
- SudokuDisplay
- SudokuBoard

Download and compile the code. The SudokuBoard class has not been completed. You will have to complete the code in this class so that the application works correctly. You are not permitted to alter the code contained in any of the other classes. Please read the documentation contained in the SudokuBoard class and use the forum to clarify any specifications that you are unclear about.

Complete the SudokuBoard class and submit a single file SudokuBoard.java

**Do not submit anyone else's work**

- If you submit an assignment you are claiming that you did the work. Do not submit work done by others.
- Do not *under any circumstances* copy anyone else's work – this will be penalised heavily.
- Do not *under any circumstances* give a copy of your work to someone else.
- The Computer Science department uses copy detection tools on the files you submit. If you copy from someone else, or allow someone else to copy from you, this copying will be detected and disciplinary action will be taken.

<b>Marking Schedule</b>	
Files Required: SudokuBoard.java	
The application stores the input and runs without generating errors	2
Numbers appearing twice in the same row are considered invalid	2
Numbers appearing twice in the same column are considered invalid	2
Numbers appearing twice in the same block are considered invalid	2
The board is printed out successfully when the save button is pressed	2
The board is cleared and the game reset when the reset button is pressed	2
Style of the algorithms	2
Neatness and consistency of the code	1
<b>Total</b>	<b>15</b>