Extension Task: Sudoku

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Abstract

A standard Sudoku puzzle contains 81 cells, in a 9 by 9 grid, and has 9 zones, each zone being the intersection of the first, middle, or last 3 rows, and the first, middle, or last 3 columns. Each cell may contain a number from one to nine; each number can only occur once in each zone, row, and column of the grid. At the beginning of the game, many cells begin with numbers in them, and the goal is to fill in the remaining cells.

Introduction

If you finish the other tasks early, or want something to work on in between classes, have a go at this task! There are plenty of ways to approach this problem; it's certainly not a trivial one, so a good idea about how to solve it is more than sufficient to start with.

The Task

Write an algorithm in Python to solve 4x4 sudoku puzzles.

Going Further

- How do you know if there's no solution?
- Can you extend your implementation to work with 9x9 boards.
- Can you extend your implementation to give all the solutions, rather than just a solution if it exists?

Stuck?

Ask us in person during the sessions, or drop us an email at:

- gjc510@york.ac.uk (Graham)
- jr1161@york.ac.uk (Jack)