Exercise 10.1 (Answer Set Programming and Defaults, 6)
Reconsider the following knowledge base from exercise 9.2 (slightly condensed):
By default, students are not lazy. But computer science students are typically intelligent, and intelligent students are usually lazy. Anne and Bob study computer science. Using Default Reasoning, the conclusion Anne and Bob are lazy follows credulously. Your task:

- Model the knowledge base as an Answer Set Program. Make use of the two versions of negation provided by the ASP language. Use clingo\(^1\) to output all answer sets of your program\(^2\).
- Choose one of the answer sets and check that it is indeed an answer set according to the definition from the lecture.
- Show that the answer sets correspond to the extensions of the default theoretical formalization.

Exercise 10.2 (Solving Sudoku using ASP, 6)
Sudoku is yet another well-known combinatorial problem. Sudoku is played on \(n^2 \times n^2\) grids that consist of blocks of size \(n \times n\). The variant \(n = 3\) is the most popular one, and one of its problem instances is depicted below.

\[
\begin{array}{cccccccc}
\end{array}
\]

Initially, some of the grid’s cells are filled with numbers ranging from 1 to \(n^2\). The goal of the player is to fill all the remaining cells with numbers from 1 to \(n^2\) such that each column, each row, and each of the \(n \times n\) blocks contain all of the numbers 1 to \(n^2\).

Write a program using ASP that can solve arbitrary instances of Sudoku.

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\(^1\)https://potassco.org
\(^2\)Run .\/~clingo 0 <yourfile>