Foundations of Logic Programming
Tutorial 5 (on January 13th)

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Exercise 5.1:
The *Seating Problem* is defined as follows. Given some tables of a given number of chairs each, generate a sitting arangement for a number of given guests, such that:

- peoble liking each other should sit at the same table, and
- people disliking each other should not sit at the same table.

Model and solve the seating problem using ASP.

a) Write a Guess-and-Check program for the seating problem.

b) Generate at least two input-instances where at least one has a solution and one does not have a solution.

Implement and test the encodings using one of the ASP solvers, for example clingo (`https://potassco.org/`) or dlv (`http://www.dlvsystem.com`).

An online tool for ASP including examples available at:
`https://potassco.org/clingo/run/`.

Further material on `clingo`: `https://potassco.org/doc/`

Exercise 5.2:
Model the *Einstein-Puzzle* in ASP. There are four different persons: *Marc, Joey, Sandra* and *Ellen*. Each person likes exactly one of the sports *hiking, volleyball, basketball* or *tennis* and exactly one of the drinks *tea, water, coffee* or *beer*. The favorite sport and drink of each person differs from those of the respective other persons. Moreover you have the following clues:

1. Joey drinks beer.
2. Marc likes neither tea nor volleyball.
3. Either Sandra goes hiking or Joey plays basketball.

4. Ellen plays basketball if Sandra likes tea.
5. The water drinker plays tennis or volleyball.