Logical reasoning and programming, lab session VII
(November 12, 2018)

For the following experiments use clingo. An online version of clingo is sufficient. Moreover, the below mentioned examples are available there.

For further experiments, it is recommended to install clingo. A convenient way of installation is using conda install -c potassco clingo from Anaconda or Miniconda. Anyway, be sure that you have at least version 4 which uses the ASP-Core-2 format.

VII.1 Check the Harry and Sally example.

VII.2 Check the Flying Birds example and pay special attention to the use of negations. Try to add bird(joe). Does something change if we extend our knowledge by adding penguin(joe)?

VII.3 Check the Traveling Salesperson example. Note that the minimize line is equivalent to

:- cycle(X,Y), cost(X,Y,C). [C,X,Y]

discussed during the lecture. Does it make any difference if we change [C,X,Y] to [C]?

VII.4 Write a general solver for graph coloring and then check it against the Graph Coloring example. Assume that n contains the number of available colors and the input is given by predicates node/1 and edge/2 describing the names of nodes and edges between them, respectively. Compare this solution with your SAT solution.

VII.5 Guess how many lines of code you need to solve the n-queens problem and then briefly check the solution.

VII.6 Check the Blocksworld Planning example. You can find how the incremental solving works and a brief description of the solution in Potassco guide and further inputs in examples.