Problem Solving and Search in AI
Tutorial 4

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For the ASP exercises, either use the browser version of clingo `https://potassco.org/clingo/run/`, or download clingo (*recommended*) from `https://potassco.org/`.

Exercise 4.1 (old exam question)
Given a graph $G = (V, E)$, a matching is a set of edges $M \subseteq E$, such that every node is the endpoint of exactly one edge. Give an ASP Encoding for the Graph Matching Problem.

Exercise 4.2
Can you encode the Bridge-Crossing Problem of Exercise 1.2 in ASP?

Exercise 4.3 (Christmas challenge)
Can you encode the problem discussed in the first lecture in ASP? The description of the problem goes as follows:

- Mr. Smith and his wife invited four other couples for a party.

- When everyone arrived, some of the people in the room shook hands with some of the others.

- Nobody shook hands with their spouse and nobody shook hands with the same person twice.

- After that, Mr. Smith asked everyone how many times they shook someone's hand.

- He received different answers from everybody.

- How many times did Mrs. Smith shake someone's hand?