Assignment 1 – Problem Formulation

1. *[Partial notes, Example 2.5]* Implement the *successor function* for the formulation of the 8-queens problem in Python, Java, or C. Part of the source files are available at `https://github.com/cholwich/its336f15` under the subfolder "`eightqueen`".

2. *[AIMA, Exercise 3.9]* The missionaries and cannibals problem is usually stated as follows. Three missionaries and three cannibals are on one side of a river, along with a boat that can hold one or two people. Find a way to get everyone to the other side without ever leaving a group of missionaries in one place outnumbered by the cannibals in that place. This problem is famous in AI because it was the subject of the first paper that approached problem formulation form an analytical viewpoint (Amarel, 1968).

   (a) Formulate the problem precisely by describing *state*, *initial state*, *goal test*, and *step cost*.

   (b) Implement the *goal test* and the *successor function* for the formulation in Python, Java, or C.

   You should provide a program capable to check if a state is a goal and print out a list of successors of a state. You can define your own way to display the output.

Submit your work to `cholwich+ai@gmail.com` before **September 4, 2015; 23:59**.

The subject of your submission e-mail must be **your Student ID without any other character**. The source files must be directly attached to the e-mail. **Do not use any file archive utility**.