

## Homework 2: Connect-Four (due February 19 **before** class)

Please read the rules for assignments on the course web page. Of course, **do not share code**. Contact Dima (dmytro.korzhyk@duke.edu) or Vince (conitzer@cs.duke.edu) with any questions.

In this assignment, you will build (or rather, complete) a player for the game of connect-four. In connect-four, players alternately drop discs into the columns of a vertically positioned grid; the first player to get four of her discs in a row wins (if the board fills up before this happens, it's a draw). You can find out more about the game on the Web.

You should download the code from the course website, familiarize yourself with its structure, and fill in the missing parts. Most of the code is already there, including a good heuristic. You need to write the code for alpha-beta (do not just code the straightforward minimax algorithm), as well as the code for generating the children of a state. Some helpful comments are given in the code for how to do this. This should result in a good player. Try playing against it (`java Connect4Manager`), with different cutoff depths for the search, and see if you can beat it; or, have it play against itself.

You should turn in the files that you modified by e-mailing them to Dima. As always, please make sure your code is legible.

This assignment is based on a similar assignment at Harvard.