

Homework Assignment 2:

### Kabbadi Game

Consider the following variant of Kabbadi: There are two teams, each with 2 players, in a grid-based playing field divided into two halves. Each team has gold treasure at a fixed location in their half. A team wins by stealing the opponent's gold and bringing it back to their own territory. In each time-step, a team can move one or all of its players by one grid space. Any player can be captured when in enemy territory if an opponent player moves into the same grid square. Captured players are removed from the game.

### Tasks

1. Create an environment to simulate the Kabbadi game for each case below:
  - (a) turn-by turn moves, i.e., team A moves all players, then team B moves all players.
  - (b) simultaneous moves, i.e, both teams move all their players simultaneously.
2. Create agents that play (i) randomly, (ii) greedily, (iii) using alpha-beta and (iv) MCTS.
3. Run the agents against each other, analyse the results and **present** your work.

### Submission

Upload your CODE and PDF deck on ICAPP, and present it to the AI grader, answering questions as you present. Be sure to give breaks so that questions are asked and answered.

### IMPORTANT:

Be sure to **RECORD a video** (8-10 minutes) of the submission. The **platform does NOT** do this yet, **you** need to record your screen and using a tool of your choice, upload it to a shared location and save the link on the platform via the 'save video link' button that will show up once you have ended your presentation by pressing the *end* button. (A Google Classroom location will be also be provided for uploading code and recording link.)

Note: In case you are unable to present using ICAPP, you can record your presentation independently of the platform and submit your link.