भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY GUWAHATI

CS 235: Artificial Intelligence, **Assignment 4**
26th March 2020

1. **The game of sticks**: Design a Min/Max game tree with alpha-beta pruning for the game. The description of the game is as follows:

   - It is a 2-player game.
   - There is a heap of sticks on a board, say n. (where n is given externally)
   - Each player picks up sticks alternatively.
   - On their turn, each player has to pick at least 1 stick and he can pick at most 3 sticks.
   - The one who has to pick the final stick will be the loser.
   - First turn will be randomly decided with toss.

   You need to design the following:

   1. Design the game for $n = 14, 21, 53$.
   2. Design AI vs human game.
   3. Design AI vs AI game.

   Deadline (for both CG1 and CG2): 4th April, 2020.
   Upload your code in GitHub repository before deadline.
   Please note that no extension will be given for this assignment.