Isfahan University of Technology
Game Theory
Dr. Manshaei
Homework #4
Due date: Tuesday, 21st Azar 1402, at 23:59

We only accept the homework **delivered via *Yekta*, before the deadline**. If you have any questions or concerns about this homework, feel free to contact Mr. MohammadReza Mirdamadiyan via *Telegram* (Preferred) or *Email*.

Your assignment includes two questions presented in Python and Jupyter Notebook format. You are required to perform the specified tasks within the notebook and ultimately submit the entire folder containing the notebooks. Ensure that your code is entered correctly, and the cell outputs are visible. Please submit the completed assignment in the form of a zip file.

Problem 1. The first question entails a simulation designed to enhance comprehension of the Best Response concept. Your task involves executing different code sections and analyzing the outcomes. In Part 2, it is crucial to derive the Best Response functions for two players and correctly input their respective codes. Following this, proceed to execute Part 3 and Part 4. Please note that an accurate definition of the Best Response functions is imperative for the validity of the results presented below.

Problem 2. In the second question, your task is to implement the Iterative Elimination of Strictly Dominated Strategies algorithm (IESDS) using NumPy. For simplicity and enhanced comprehension, you will initially implement this algorithm for two-player games and subsequently for n-player games. The output of this function should be in the form of a dictionary, where keys represent player numbers and values consist of a list containing dominant strategies for each player. Additionally, it is important to specify the process of eliminating dominated strategies. Please take note of the provided outputs. You have the flexibility to define other inputs and test your algorithm on them.

Good Luck.