

Assignment Description

For this assignment, each student is to develop a strategy for the iterated prisoner's dilemma game. All instructions on how to write the strategy are provided within the *Ex_IPD.ipynb* file.

After all students' strategies have been collected, they will compete against each other and be ranked. More specifically, every two students will play a match against each other using their strategies. The main criterion for ranking is the total score earned in all games.

The points for each round of the game are shown in Table 1. It should be noted that, as per Table 2, each match will consist of 20 repetitions of the Prisoner's Dilemma game.

Table 1 - Points for each round of the game

		Student B	
		Cooperate	Defect
Student A	Cooperate	3,3	0,5
	Defect	5,0	1,1

Table 2 - Example of a match between two students, A and B

Iteration	1	2	3	...	20
Student A					
Student B					

The strategy function you write will take the history of your and your opponent's moves as input for each round and must return either **“Defect”** or **“Cooperate”** as output. You must ensure that your function works correctly. Functions that do not adhere to the specified standard will not be entered into the competition and will not receive a grade.

The name of your strategy function and the submitted notebook must be your last name.
Example: *Asghari.ipynb* which contains only one function named Asghari.

```
def Asghari(history):  
  
# Asghari's strategy
```

In developing your strategy, be sure to have a good estimation of others' strategies. The success of your strategy will be highly dependent on the strategies used by your community. The top 5 students will receive bonus points according to Table 3.

Table 3 - Bonus points

Rank	Bonus Points
1st Place	0.5
2nd Place	0.4
3rd Place	0.3
4th Place	0.2
5th Place	0.1