Short description of lab 3 – Jurian Baas, Kelvin Lubbertsen, Koen van Noortwijk

We implemented a version of the Axelrod tournament where agents with different strategies can compete against each other in iterated prisoners dilemma games. In short, the following happens:

* There is an administrator agent that takes care of running the game. It has a tournament object that can let all registered players play 200 games against each other. When the administrator receives a start message, it will run the tournament.

The tournament has various options, like the score matrix that is used to identify the scores that can be earned for each combination of player choices. Another option we added is the error rate. With this you can introduce a certain amount of errors in the answers that players give. Specifically this means answers by players will get flipped (cooperate will become defect and defect will become cooperate) a certain percentage of the time.

* 2 players are send a start message when they have to start playing. In addition to this, both player will receive information about the choice that the opponent made last game. Based on this the player can develop a new choice based on a specified strategy and send that choice to the administrator. This will keep on going until the specified amount of iterations is played, after which 2 new players are picked from the registered players list to start playing. This cycle continues until all players have played against each other. The cumulative score of each player is tracked and returned at the end of the tournament.
* We implemented the following strategies:
  + Always Cooperate
  + Always Defect
  + Majority (make choice for current game depending on all choices the opponent made in previous games. The majority of these choices is then taken as choice for the current game)
  + Random Defect (Randomly decide between defect and cooperate)
  + Tit for Tat (Cooperate, unless the opponent has defected last game, then defect)
  + Tit for Tat With Random Defect (Cooperate, unless the opponent has defected last game and defect in a small percentage of the time no matter what)
  + Tit for Tat With Random Forgive (Cooperate, unless the opponent has defected last game and cooperate in a small percentage of the time no matter what)
  + Tit for Tat With History (Tit for Tat, but if opponent makes certain choice more than 80% of the time, pick optimal strategy against that choice)