

# TDT4280 - Exercise 3

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## Iterated prisoners dilemma

1. The results of the experiment:

Strategy	nr of rounds=10	nr of rounds=20	nr of rounds=30
Allways coop	117/300=0.39	240/600=0.4	360/900=0.4
Allways defect	467/300=1.56	940/600=1.56	1410/900=1.57
TitForTat	242/300=0.81	480/600=0.8	720/900=0.8
TitForeveryOtherTat	199/300=0.66	400/600=0.67	600/900=0.67
Mixture(random)	226/300=0.75	440/600=0.73	660/900=0.73
OwnStrategy	253/300=0.84	500/600=0.83	750/900=0.83

2.

### **Our strategy:**

First defect -> Keep doing this until the enemy defects too.

The main target of our strategy is to abuse the number of times the enemy agent will coop in a row before defecting.

If the enemy starts by defecting, see if you can change it's behaviour by cooping 2 times in a row, if it does't, then go back to defecting whenever the enemy did defect.

If the enemy did coop 1 or more times from the first battle: Defect until he defects, then coop until he does, before you defect for as long as his max cooping streak -1.

### **MixtureStrategy:**

Our mixture strategy is as mixture as it gets: It changes between coop and defect.