

A4B99RPH - final lecture

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Lecture outline

- ▶ opinion survey, feedback
- ▶ Prisoner's dilemma
- ▶ Spam
- ▶ Maze - bonus assignment for possible extra points

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opinion survey, feedback

- ▶ Important for teachers, important for the university
- ▶ You will receive information email from the dean.
- ▶ Please use concrete arguments

prisoner's dilemma – tournament

		player B			
		C		D	
player A	C	4	4	1	6
	D	6	1	2	2

		player B			
		C		D	
player A	C	30	30	1	70
	D	70	1	2	2

		player B			
		C		D	
player A	C	4	4	1	8
	D	8	1	4	4

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prisoner's dilemma – tournament

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all-years comparison

1	y2009cejnamil	[11, 18, 7]	36
2	y2013matejj28	[51, 6, 1]	58
3	y2011prazape5	[34, 32, 65]	131
4	y2013novotl22	[22, 19, 114]	155
5	y2013jasekota	[80, 14, 68]	162

9	y2013krasoser	[2, 177, 21]	200
40	y2013langrfil	[3, 205, 127]	335
110	y2011samanfil	[302, 2, 241]	545

Successful strategies

Analysis of the payoff matrix was absolutely necessary.

if CD + DC better than 2x CC even 2x DD (forgiving)

```
1 if (self.b + self.c) > 2*self.a and (self.b + self.c) > 2*self
2     return self.special()
3 else:
4     return self.tft()
```

then:

- ▶ start well
- ▶ use the opportunity of the last move
- ▶ tit-for-tat (variants of)

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Even more successful strategy ...

... but don't tell anybody ;-)

```
1 blackwiz [ 1, 1, 1] 3
2 paclimar [13, 2, 6] 21
3 gavenkar [12, 5, 8] 25
4 matejj28 [19, 3, 3] 25
```

overpowering tournaments completely

```
1 | blackwiz | 4 | 374008.0 | 5376 |
2 | paclimar | 4 | 204643.0 | 5376 |
3 | matejj28 | 4 | 203861.0 | 5376 |
4 | rysavfil | 4 | 202053.0 | 5376 |
```

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Summary of PD

- ▶ years quite even, but this year did very well
- ▶ no clear winner (except the blackwiz)
- ▶ considering the inherent randomness, the ranking is surprisingly stable
- ▶ code testing is important

Bonus assignmnet

- ▶ Maze
- ▶ Grand challenge mazes
- ▶ 10 points for solving Grand challenge, reasonably running time expected

soon more ...

- ▶ AE4B33ALG - Algorithms
- ▶ AE0B01LGR - Logic and Graph Theory
- ▶ AE4B33ZUI - Introduction to Artificial Intelligence
- ▶ AE4B33FLP - Functional and Logic Programming
- ▶ AE4B33RPZ - Pattern Recognition and Machine Learning
- ▶ AE4M36PAH - Planning and games
- ▶ AE4M36MAS - Multi-agent systems (game theory)
- ▶ ...

