

Grid Wars 2016

A Game AI Coding Competition

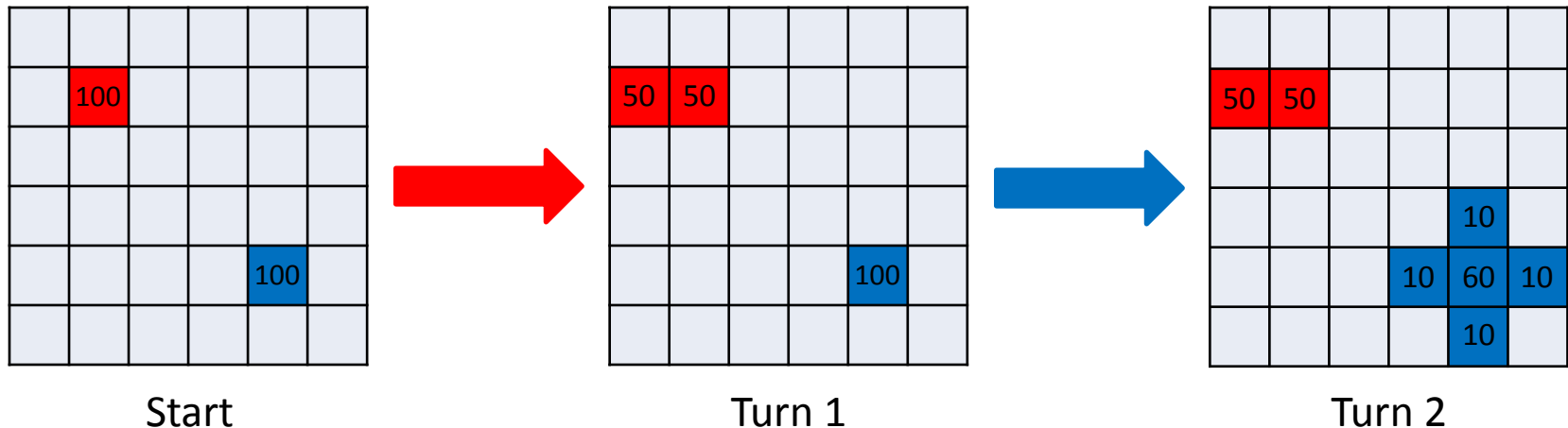
Pavel Dionisev
CERN

Goal

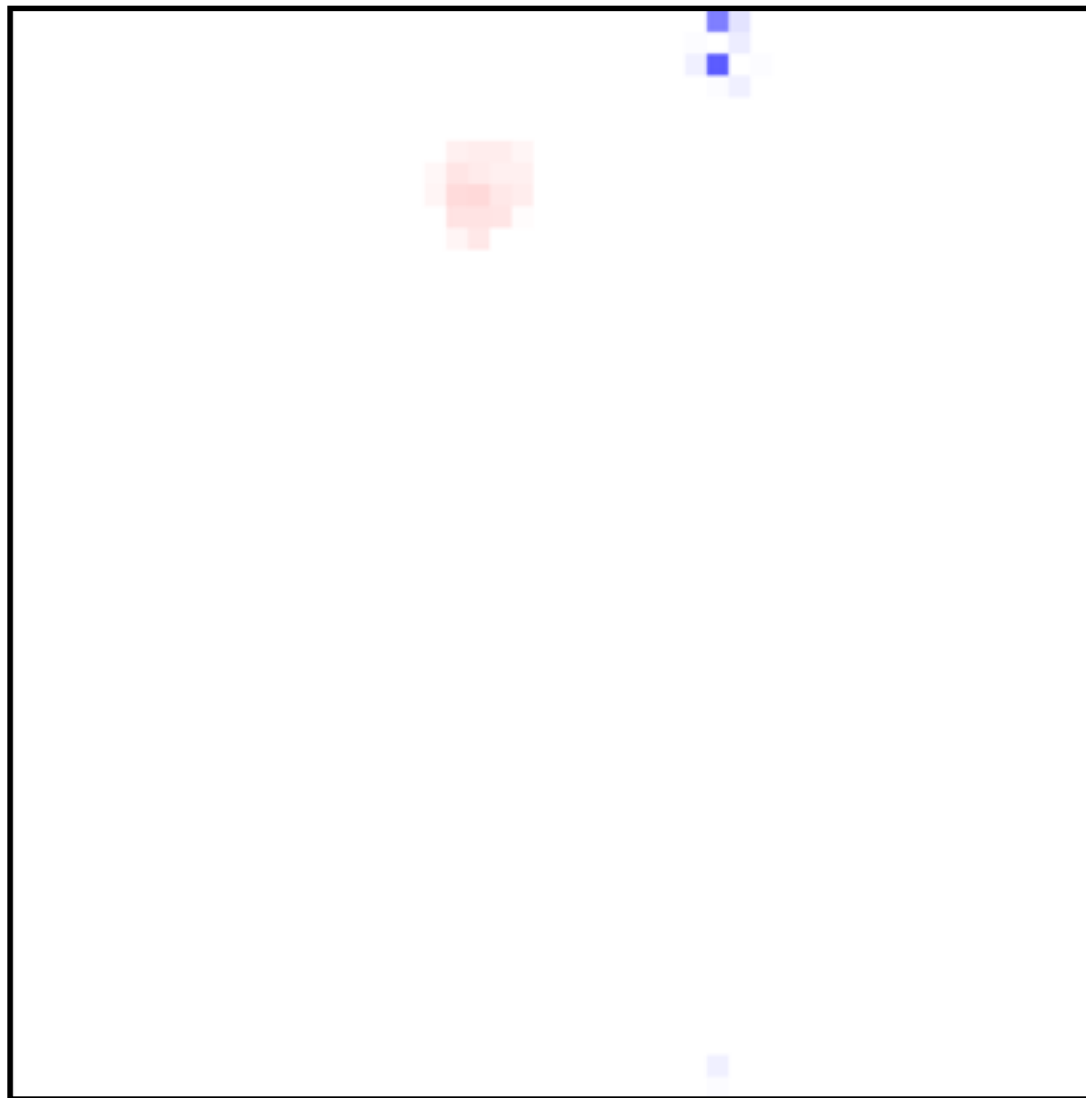
Write an autonomous bot that will participate in 1 vs 1 strategic duels against the bots of other competitors.

Mechanics

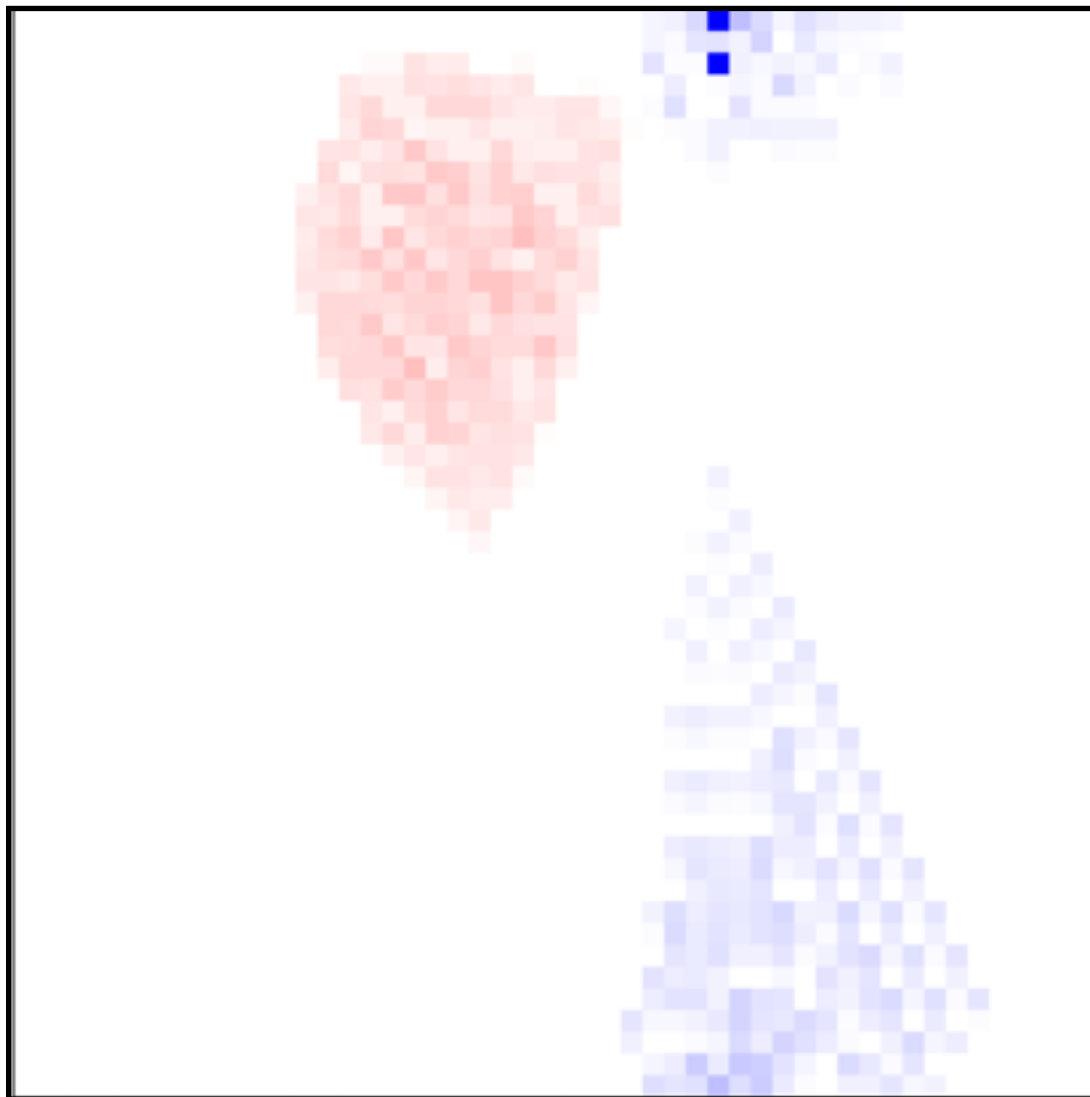
- Start:
 - 50x50 cells board
 - 100 troops per player in one random cell
- Players take alternating turns to move troops



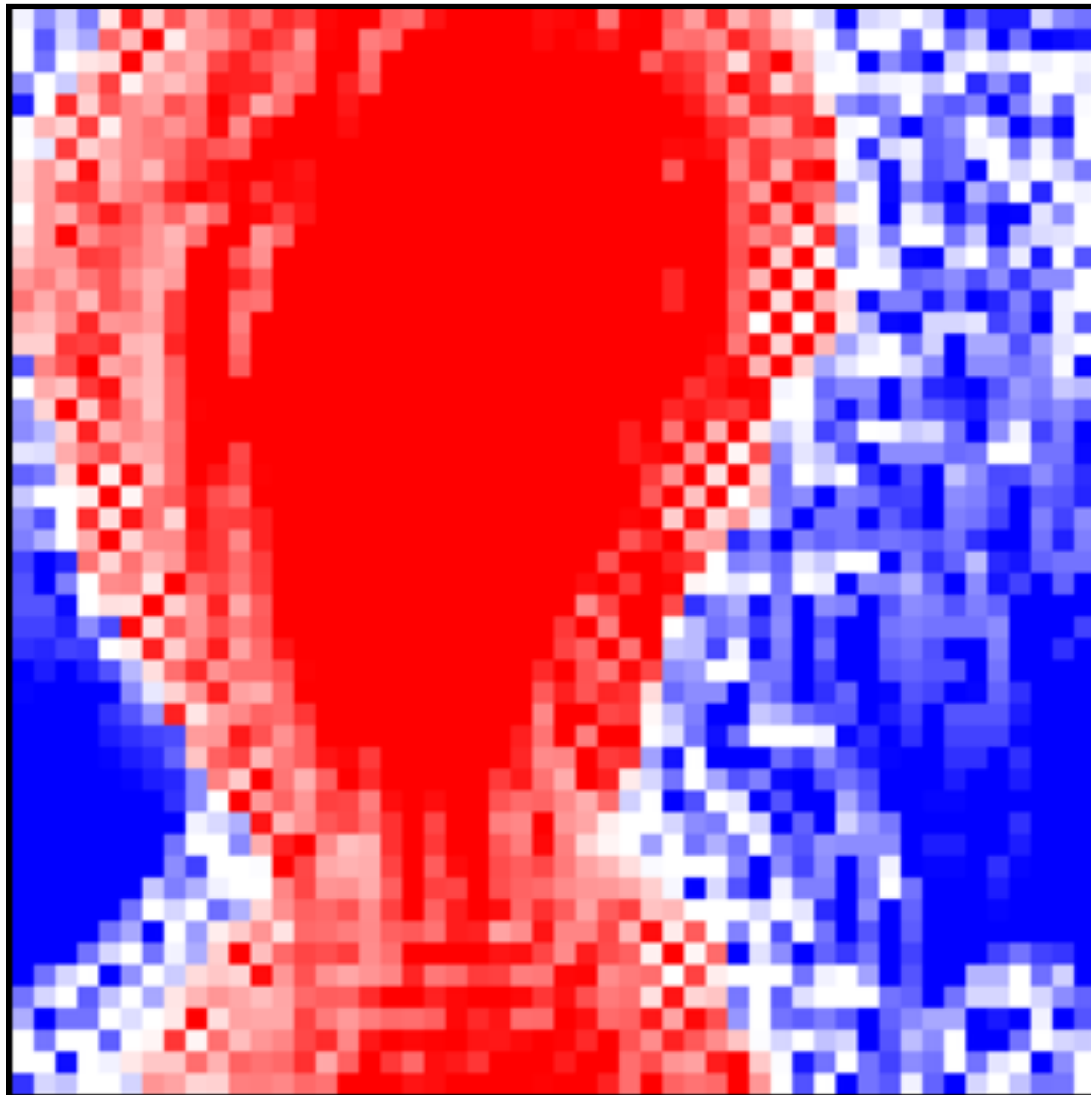
Example



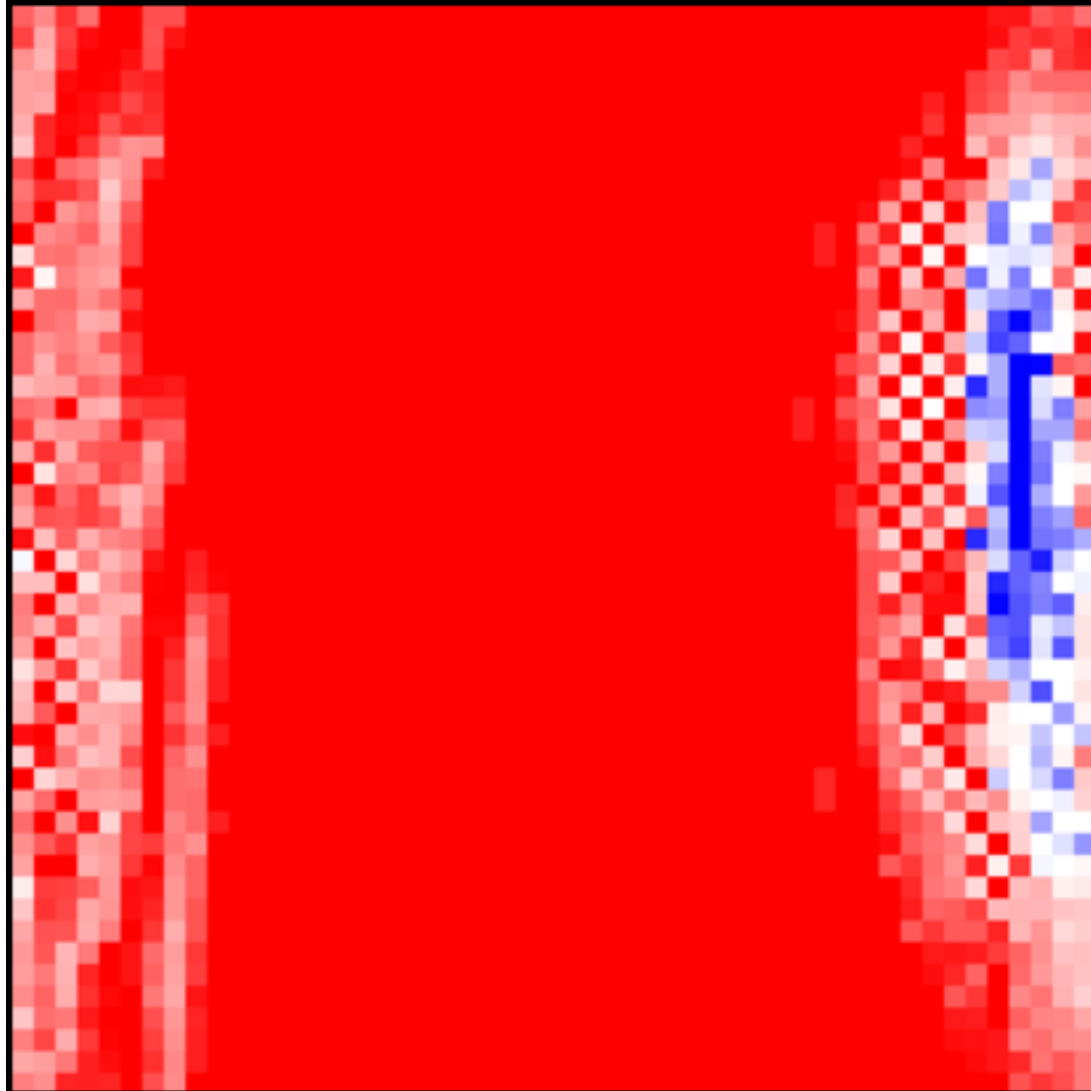
Example



Example

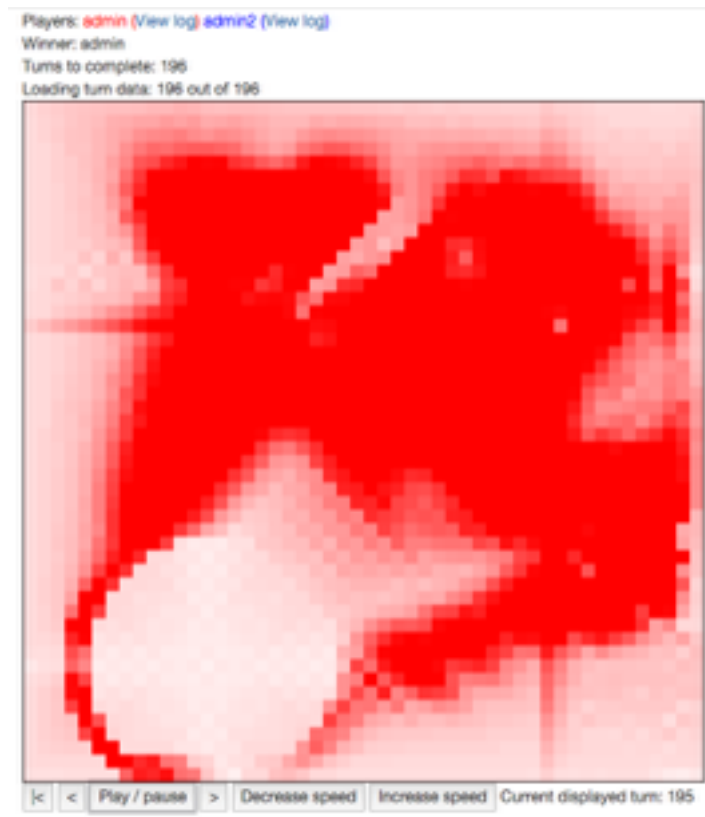


Example



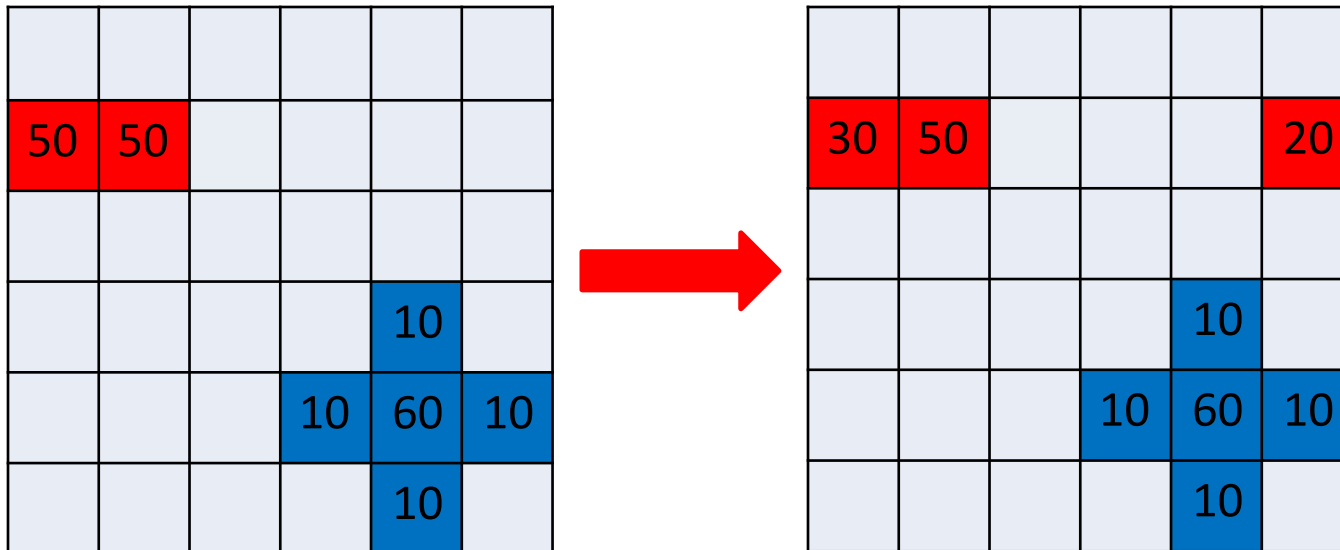
Winning

- Last surviving player or highest population after 1000 rounds



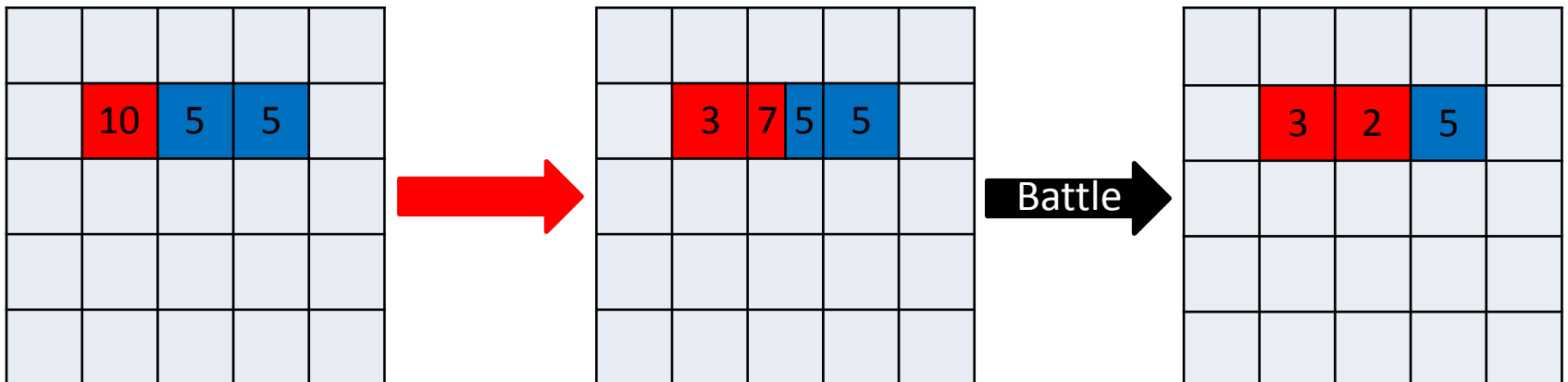
Movement

- No diagonals
- The board is a torus
 - Edges wrap around



Battle

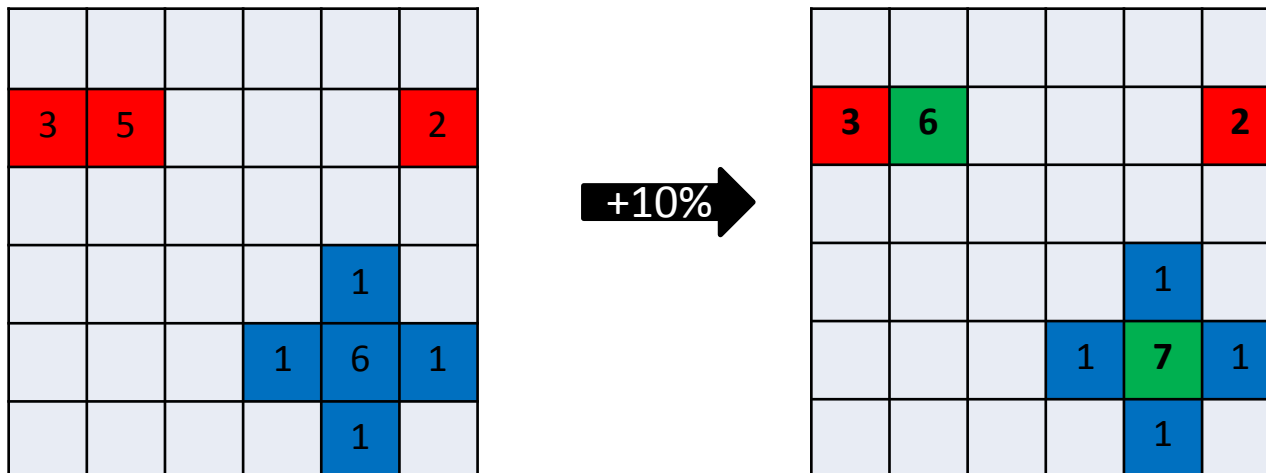
- When troops enter occupied square:
 - Simple comparison (more troops wins)
 - Surviving = Winning - Losing
 - Battles occur after every turn (not round)



Population growth

- After every round (1 turn per player)
 - Growth rate (+10%)
 - Rounding ($1 * 1.4 \rightarrow 1$)
 - Maximum population 100/cell

Before	+10%	After
1	1.1	1
2	2.2	2
3	3.3	3
4	4.4	4
5	5.5	6



How to participate?

- Basic programming knowledge is enough.
- Simple examples are provided.
- If you have no clue at all:
 - You can form a team with someone who can code.
 - Take part in defining the strategy.

How to participate?

1. Gather a team up to 3 members or go solo
2. Register on gridwars.cern.ch. You need only one account per team.
3. Registration password: **CERNGWM@sterPa\$\$**
4. Register your team members under the team link.

Bot development

- Download API (zip with project).
- Follow README instructions.
- JDK 8 is **not supported**.
- **Stand-alone** emulator is provided for local development and debugging.
- Implement PlayerBot interface and start coding.
- Upload your bot to compete against other players.

Bot development

Demo

Competition

- Unlimited uploads
 - Last upload is considered submitted to the competition
- Server performs continuous 1v1 battles
- Play against all other active bots up to N times
- View games as soon as they are finished

Other rules

- Illegal movement = all movements ignored
- Thread creation is not allowed
- Stateful bots are allowed
- Use of external libraries is discouraged
 - Max JAR file size is 10 MB
- Time-out on constructor
 - Your bot will be idle during that match
- Time-out on each turn
 - Commands added before time-out will be OK

Schedule

- Game starts now
- Tomorrow
 - Hackathon
- Wednesday
 - Lunch: end of upload
 - Afternoon: end of competition ceremony

Let's Play !

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