IMPLEMENTING A MULTIAGENT SYSTEM

BE4M36MAS - Multiagent systems
ASSIGNMENT
Find, collect and carry all gold stones from their location to a depot!

- Miners do not know positions of gold stones and depots — they must find them.
- They may carry at most one gold stone at a time.
- They have limited range of sight (8-neighbourhood).
Visible: (gold, 2, 2), (depot, 1, 0)

No objects visible!
Mining world — actions

- left(), right(), up(), down() — movement in the grid
- pick(), drop() — manipulating gold stones
- sense() — use it to update your percepts (nearly no delay)
Gold stones are **heavy**.
→ there must be another miner in 4-neighbourhood for `pick()`

![Diagram](image1.png)

pick() succeeds

pick() fails
Gold stones are \textbf{added in runtime} → Your miners must be able to find them at any time

\textbf{2 points}
- You are racing the **time** now
- Your miners should not be much slower than (inefficient) reference solution
  (if your agents actively pursue their goal, you will have no problems)

1 point / scenario

Your solution may be evaluated on slightly modified versions of mines!
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1 **point** / scenario

Your solution may be evaluated on slightly modified versions of mines!
You can get **1 more point** for implementing a **fast** mining team.

A competition between your submissions will be held

→ Performance of your miners will be evaluated based on **Scenarios 2-8**

(Multiple runs will be performed, you get $i$ points for being $i$th within the run, top 25% submissions with lowest number of total points get **1 point**)

**Mining world — Competition**
You are asked to submit a short report:

- What approach have you used for discovering gold stones and depots?
- How have you solved synchronization problems?
- What issues have you encountered and how have you overcome them?
- ...

Reward: 1 point
Deadline: 7.11.2018 04:00
- Think before implementation
• Think before implementation
• Be prepared for possible issues!
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• Keep it simple!
• Familiarization with the framework
• Basic tasks
• Basic communication