Final Exam Modalities

INFO-H-414

A Typical Exam Session

The Exam

The exam is divided in two parts

1. **a project**
   - 50% of your final grade
2. **questions**
   - 50% of your final grade

The Project

For a successful project, you must:

- code and get results
- write a report (4 to 6 pages)
- prepare a presentation (10 minutes)

Remarks

- Apply what you learned
- KISS
- Honesty pays off
- Cooperation is forbidden

Questions

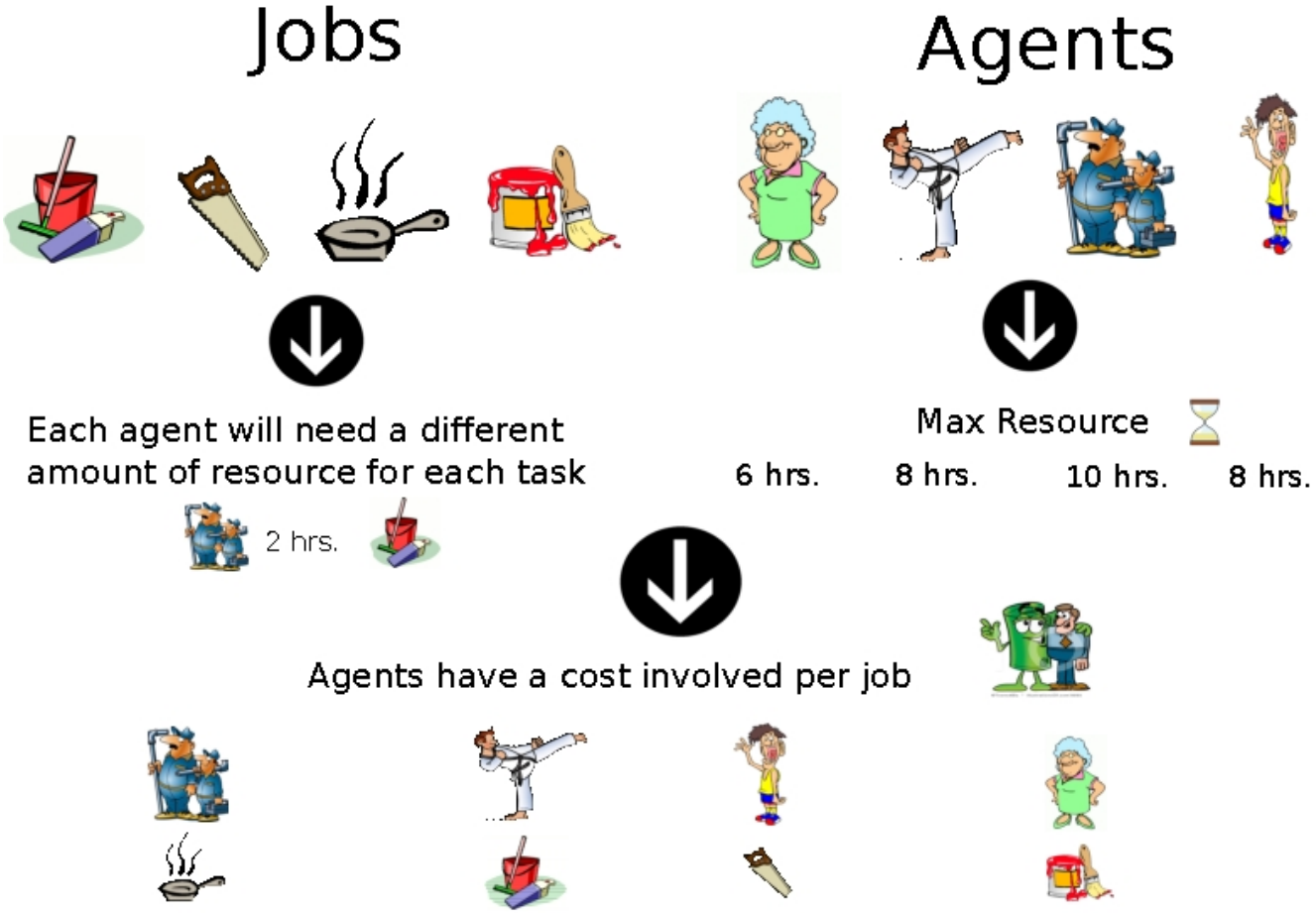
The questions will concern **the entire course material**

Ant Colony Optimization

What? You will implement, analyse and compare ACO algorithms applied to a combinatorial optimization problem.

How? You will adapt and improve the algorithms implemented during the exercises for solving the Generalized Assignment Problem (GAP)

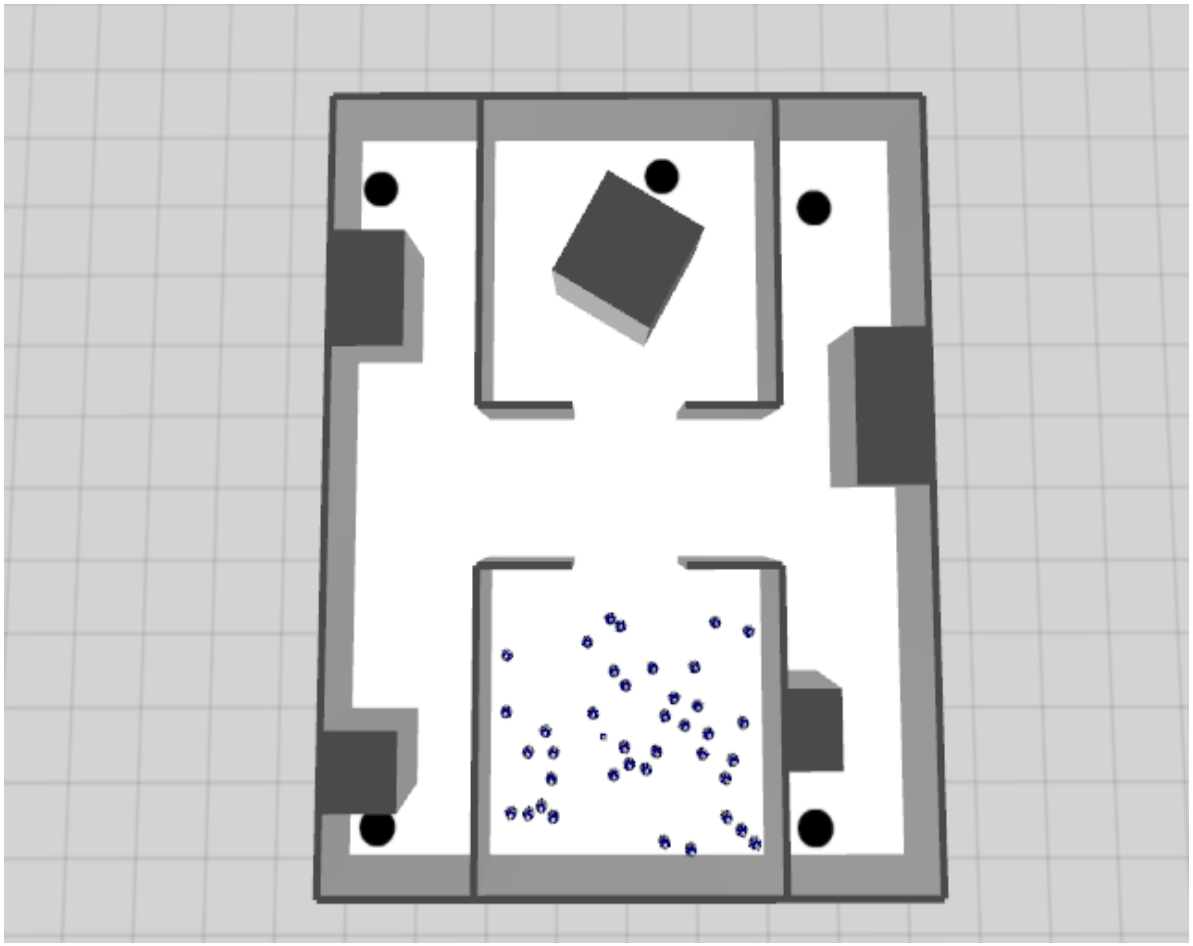
Ant Colony Optimization

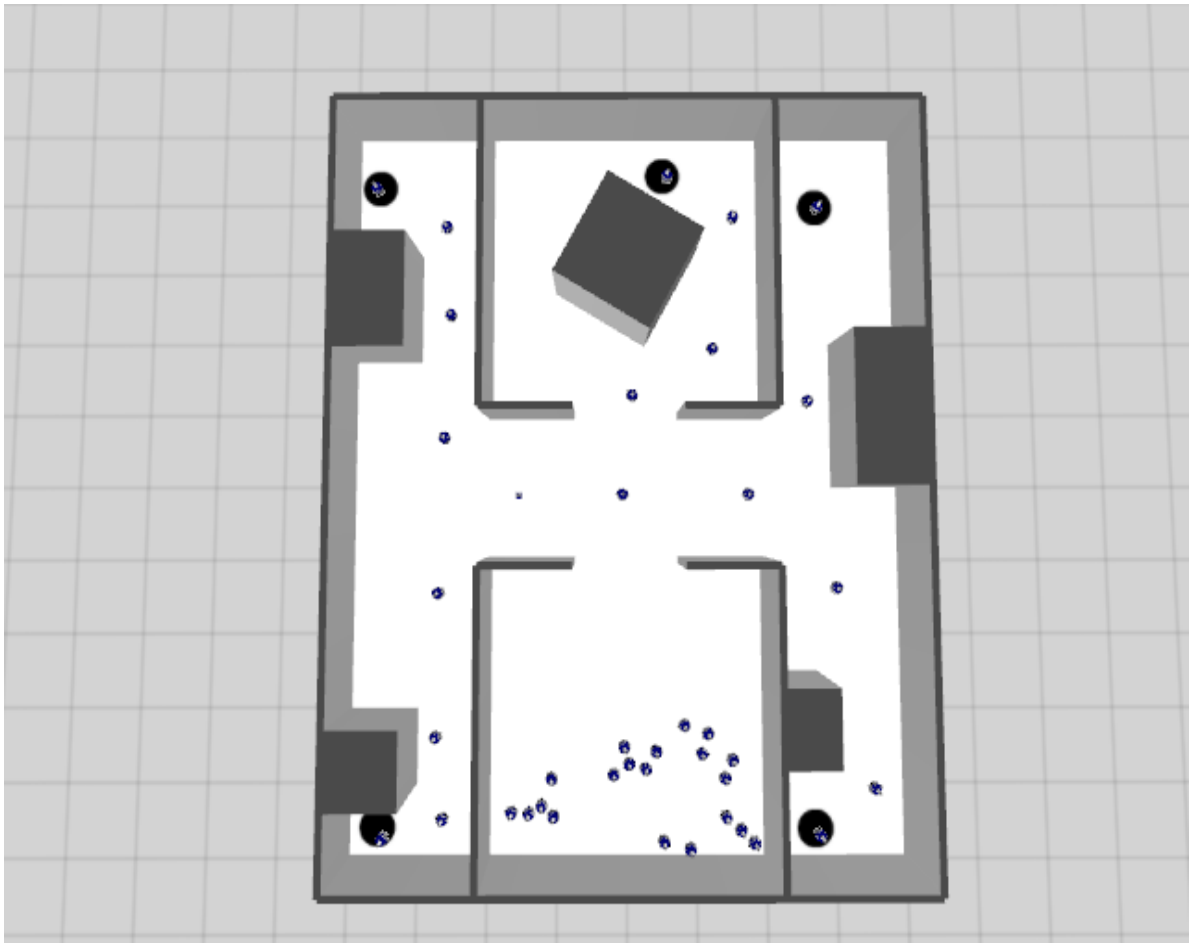


What do you need to deliver?

- A report describing:
  - The most important components of your ACO algorithms
  - Experiments: report of quality measures and number of assignments generated for 25 tests performed on a 10 instances test set
  - Comparative Analysis: Quality of solutions and Convergence
  - The implementation and test of a localsearch procedure to be added to an ACO algorithm
- Source code
  - Properly documented and ordered
  - Should run on the command line like ACOTSP
  - Make sure it compiles and runs on Ubuntu (so that we can check it)
  - README describing your algorithm

Swarm Robotics





- You can use:
  - Wheels
  - Range and bearing system
  - Distance scanner
  - Ground sensors
  - Proximity sensors

- You must discuss:
  - Number of necessary robots
  - Time to complete the task
- Run multiple repetitions of each experiment!

Master Theses

Master theses in swarm intelligence:

`http://cs.ulb.ac.be/public/teaching/mfe/ia`