

MAS-M2

Project Subject for the Multi-Agent System Course

Objective

The goal of this project is to design, implement, and analyze a Multi-Agent System (MAS) of your choice. You will work as a team, or alone, to deliver a functional MAS that demonstrates the concepts covered in class. Your project must be accompanied by detailed documentation, a report and a presentation.

Project Requirements

1. Implementation of a Multi-Agent System

- Design and implement a system involving multiple agents that interact to solve a problem or simulate a scenario.
- The MAS can address problems such as:
 - Resource allocation and negotiation.
 - Collaborative problem-solving.
 - Simulations (e.g., traffic systems, evacuation planning, ecosystems, or economies).
 - Competitive scenarios (e.g., auctions, games).
- Choose an appropriate programming language and development framework/library for your system.

2. Documentation & Deliverables

- **Source Code:** Provide all source files in a structured and readable format.
- **Executable:** Deliver a compiled or ready-to-run version of the system.
- **Compilation Guide:** Provide clear, step-by-step instructions for compiling and running the code.

3. Project Report

Your team must submit a report that includes:

- **Project Overview:** A summary of the problem, the proposed solution, and the system's objectives.
- **Model of the MAS:** Propose and explain the model behind your system.
 - Include agent types, roles, goals, and communication strategies.
 - Describe how the agents' behaviors interact to achieve the overall system objectives.
- **System Design:** Explanation of the architecture, agent design, and decision-making strategies.
- **Code Explanation:** Provide details on key parts of the code, such as algorithms, agent behaviors, and communication protocols.
- **Team Contribution:** A breakdown of each member's role and contributions to the project.

- **Usage Instructions:** A user guide for running and interacting with the system.

4. Presentation

- Prepare a **10-minute presentation** to explain your project.
 - Focus on the problem solved, your approach, the MAS model, and its functionality.
 - Include a brief demonstration of your MAS in action (live or pre-recorded).
- The presentation will be followed by a **5-minute Q&A session**.

Evaluation Criteria

Category	Weight
Functionality of MAS	30%
Code Quality and Clarity	20%
Report Quality	20%
Presentation Quality	20%
Originality and Relevance	10%

Deadlines

- **Project Proposal Submission:** *Monday, December 15, 2025*
Have a short description of your MAS idea, including the problem it addresses and the proposed approach.
 - **Final Deliverables:** *Sunday, January 18, 2026*
Submit the complete project package (code, executable, and report).
 - **Presentation Day:** *Monday, January 19, 2026*
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Additional Notes

- Feel free to ask me if you need guidance on the feasibility of your project idea.
- Ensure that your MAS implementation demonstrates clear application of concepts like autonomy, cooperation, communication, environment, interaction, etc.
- Team size: 1-4 students per group.

Good luck and enjoy building your Multi-Agent System!

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