**Spike:** GOAP

**Title:** GOAP

**Author:** Tran Duc Anh Dang | 103995439

**Goals / deliverables:**

Create a GOAP simulation that demonstrates the effectiveness of the technique in considering long-term outcomes of actions (related to side-effects and/or time delays) and can plan and act intelligently. The simulation should include agents that interact with health and shield objects to maintain their status while performing other tasks.

**Technologies, Tools, and Resources used:**

List of information needed by someone trying to reproduce this work

* Python 3+
* Built in Python libraries.
* IDE or Code Editor (Visual Studio Code)

**Tasks undertaken:**

* Install Python: Download and Install Python 3+ via https://www.python.org/downloads/
* Set up a code editor or IDE: Download and install a python compatible ide or code editor such as Visual Studio Code, PyCharm
* Open and familiarize with the code by reading through, paying attention to the comments that had been made.
* Run the code: Execute the code and observing the output.

**Planning Notes:**

• Start with the existing game environment and agent classes that include health and shield mechanics

• Implement the GOAP system to control the high-level goals and actions of agents.

• Design goals and actions for the agents that involve interacting with health and shield objects.

**Extensions:**

• Add more goals and actions to the agents to make the simulation more complex and challenging.

• Different types of agents with varying abilities and strategies.

• Implement environmental obstacles and hazards that affect the agents' planning and decision-making process.

• Enhance the simulation by adding a dynamic world that changes over time, requiring agents to adapt their plans accordingly.