Spike Outcome Report

Number: 07

Spike Title: The “Planning” in GOAP

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Goals:

Create an agent simulation that utilises GOAP. You must consider

- Actions with long term outcomes
- Intelligent agent/s

Technologies, Tools, and Resources used:

- Visual Studio 2017 with Python 3 installed
- Pyglet Documentation here: http://pyglet.readthedocs.io/en/pyglet-1.3-maintenance/
- Help from peers.
- Python 3 Documentation http://docs.python.org/
- Lab06 work to be used as a base

Tasks undertaken:

Using the code from lab 6:

- Remove (or comment out) any unnecessary code
- Add three states for the agents (agent.py and hunter.py)
    - Seek
    - Flee
    - Wander
- Using distance between the target cross and one agent
    - Update the states so there is a dominate goal
        - If you’re further an 300m away. Lean towards Wander
        - If you’re less than 300m away. Lean towards Seek
        - If you’re less than 20m. Lean towards Flee
- When working add an agent that wanders the map (hunter.py). Using the distance between this and the first agent
    - Update the states so there is a dominate goal
        - If you’re further an 300m away. Lean towards Wander
        - If you’re less than 300m away. Lean towards Seek
        - If you’re less than 20m. Lean towards Flee
- Calculated the best goal judged by which state has the highest number
- Once working it creates a stack of actions to complete and once done it pops them from the list

What we found out:

- The agent will wander around and when it’s near the target it will look not stupid because it realises that there is something there and needs to see what it is.
- Once finding something to seek, it will travel towards the targets position but once it realises that it’s not a good place to be it flees the area.

- Once it has fled the area it then wanders again until it gets within range of the target again, causing it to have a look at the ‘shiny’.
- The Agent also has similar behaviour when near the Hunter, if It gets within range its curiosity is piqued until it gets close enough to ‘see’ that the hunter is what it is, then flees from it.
- Overall, we see that the agent looks like some human making decisions based on what it can see and then makes a choice based on what it thinks is the best action to do.

Open issues/risks [Optional]:

- One issue is that if you leave the ‘target’ in one place for too long, the agent begins to look stupid as it forgets that the target is dangerous, causing it to seek it, flee, wonder for a little bit before seeking it again and fleeing again.

Recommendations [Optional]:

- If time were permitting an extension to the spike by allowing the agent to remember the danger area for a little bit just to avoid the possibility of it going straight back to wandering as soon as it exits the area would be good. It would allow the agent to look a bit smarter than it is currently.