Coursework 3: Games, Probably

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1 Introduction

All of your courseworks are designed primarily to give you experience in developing intelligent control and/or cognitive systems. However, the course is also intended to give you experience and feedback in writing about research. To this end, you will be writing research reports of at least one full page of text but *not much more than two full pages of text* using exactly this format. Three is 50% more than two — too much. Submissions should be in the format specified for Coursework 1.

2 Approach

There are three different ways to do Coursework 3. There are two high-level options, then two assessment options for one of them.

2.1 Option 1

Do the other option on CW2 than you've already done.

2.2 Option 2

You will learn to build some Game AI using Pogamut. The software for this is installed only in EB 0.8, and you are expected to use the computers there. *If you want to use your own computer, you are solely responsible for trying to get that working, you will not get help from any of the teaching staff.* You will get to try to play with BOD in a practice scenario / tutorial on **Thursday, 22 March** and then you will participate in an experiment where you try to build a complex AI with multiple goals in a scenario given to you in-lab on **Thursday, 29 March**. *This will be a 3-hour laboratory session* running from 4:15–7:15. You will be allowed to choose between using BOD with POSH, which is supported in Pogamut (as described in lecture, and in Bryson, 2003), and the other without, or you may use any approach that you choose such as straight Java. The suggestion is that you experiment on the 22^{nd} and then take a week to decide and/or to write any other scaffolding software you think might help you, then do the assessment on the 29^{th}

2.2.1 Assessment A

You will get 60 points for completing AI in 3 hours that solves the scenario with a successful agent. If your agent is one standard deviation above the class mean you get 20 additional points. It really is a competition, but not necessarily with one (or any) winner.

For the remaining 20 points you will write a *less than one page, text only no figures* assessment of your outcome, the task, and the approaches. You should make 10 observations (you can bullet point

or enumerate them if you like, or embed them in paragraphs) and you will get 0, 1 or 2 points for each one. This is very like how your final exam will get marked, so this gives you practice on writing an essay. Points should all be supported somehow, either by:

- logical arguments,
- drawing from your experience, and / or
- drawing from literature or lecture

Obviously to fit ten on one page, each point should only be one or two sentences long.

2.2.2 Assessment B

If after the competition you do not want to be assessed on the basis of your performance, you are free to complete either scenario using any method, and then write up a report similar to how you have for the first two courseworks. You may use the code you have already written or start over, it is totally up to you. Please don't leave the assessment though until you have tried for three hours to complete, so that we can at least see which approach you chose and how it went for you.

3 Results

For Option 1, see Coursework 2. For Option 2-B, your results' quantitative metric will be defined by the scenario. It is quite possible though you may spend most of your space describing qualitative outcomes as a result of various approaches you have taken to the problem.

4 Discussion and Conclusions

Except for Option 2-A, these are per the instructions in Coursework 1.

References

Bryson, J. J. (2003). The Behavior-Oriented Design of modular agent intelligence. In Kowalszyk, R., Müller, J. P., Tianfield, H., and Unland, R., editors, *Agent Technologies, Infrastructures, Tools, and Applications for e-Services*, pages 61–76. Springer, Berlin.