**Spike:** Task 4

**Title:** Goal Oriented Behaviour

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**Goals / deliverables:**

* Working code to demonstrate goal-oriented behaviour (GOB) using simple goal insistence (SGI).
* Demonstrations of where SGI does and does not work well.

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

* Visual Studio 2017
* Learning materials on Canvas

**Tasks undertaken:**

* (If Visual Studio is not already installed) download and install Visual Studio with python3 compatible packages.
* Create a python3 project in Visual Studio and copy the sample code into it.
* Read the sample code to get a gist of what’s going on, noting comments denoting missing functionality (don’t implement said functionality yet).
* Compile and run project to see what happens when running the unaltered sample code.
* If the code breaks, fix the errors, re-compile and re-run it.
* Look for comments denoting missing functionality. Pick one, and fill in the blanks.
* Re-compile the project and run it again. If it breaks or does not work as intended, edit and re-run the code until it works as intended.
* Find other missing functionality and repeat.

**What we found out:**

If the intention of the code provided to students was that we should modify it to address all the additional functionality listed in comments and have the program reach a “Done” state:

* When only one value needed to be evaluated (the effect on the goal being worked towards), the program worked perfectly fine and reached a “Done” state within a few loops.
* When evaluating the intended effect *and* side effects of an action, it was dependent on the magnitude of all the effects of the actions as to whether the program got stuck in a loop where reducing one goal to 0 required the other goal to be addressed, and so on.