CS 511: Artificial Intelligence II
Project 4: Hybrid Learning Agent

`Agent Theseus511`

Spring 2025

1 Getting Started

The hybrid learning agent is implemented in Scala. The implementation is contained in the files `src/scala/AgentFunctionImpl.scala`, `src/scala/ModelBasedReflexAgent.scala`, and `src/scala/HybridLearningAgent.scala`. The project directory contains a Makefile that automates building and running the HLA. The Makefile runs the project with the options `forwardProbability (-n)` set to 1 and `randomAgentLoc (-r)` set to `false`. It contains a `check` target that checks the system for the necessary tools (`scala`, `java`). It is recommended that the project is run after checking for the necessary tools as:-

```
$ make check
$ make #or "make run"
```

The above commands are for a single run by default. Of course, the `run` recipe can be updated with the `-t` option for multiple trials. A separate `make` target called `la-tenk` is provided for evaluating the HLA that runs 3,334 trials with a forward probability of 1, and 3,333 trials each with forward probabilities of 0.8 and 0.3334. It can be run using:-

```
$ make la-tenk
```

The score for each trial and the average score is written to `wumpus_out.txt` or to the output file you specify using the `-f` option in the recipe.

The project was tested using:-

- **Scala Version:** 3.6.3
- **Java Version:** OpenJDK 22.0.1