Assessment Evaluation

For a GMoDS-based Runtime Agent Role Interpreter

Version 1.0

Submitted in partial fulfillment of the requirements of the degree of MSE

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1 Introduction

This document details the results of black box testing performed on the GMoDS-based Runtime Agent Role Interpreter as outlined in Test Plan 1.0. Since successful execution of any one of these test cases requires the successful execution of all system requirements, this assessment covers the entire GMoDS-based Runtime Agent Role Interpreter implementation.

2 Test Case Result Summary

#	Scenario	Scenario Description	Score	Results
1	HunterKiller.xml	Single HunterKiller	19551	Pass
2	HunterKillerTeam.xml	Pair of HunterKiller	23650	Pass
3	GoldDigger.xml	Single GoldDigger	-1876	Pass
4	GoldDiggerHunterKillerTeam.xml	HunterKiller and GoldDigger	22400	Pass
5	WumpiWorld.xml	3 HunterKillers, 2 GoldDiggers	32198	Pass

3 Test Case Result Details

3.1 Test Case 1

This scenario executed as expected. The single HunterKiller agent was able to eliminate five out of six of the Wumpi in the world without falling into a pit or being killed by a Wumpi. However, due to the lack of GoldDigger agents, no gold could be recovered. The agent was able to detect the sixth one, but due to a lack of ammunition, was unable to eliminate the target. This test passed with a score of 19551.

3.2 Test Case 2

This scenario executed as expected. The two HunterKiller agents were able to eliminate all Wumpi from the world without falling into a pit or being killed by the Wumpi. However, due to the lack of GoldDigger agents, no gold could be recovered. This test passed with a score of 23650.

3.3 Test Case 3

This test was passed successfully. The single agent was able to only recover three out of the six possible pieces of Gold in the world. Due to the conservative exploration algorithm the agent employs, it will never take risks while searching for gold. Since no HunterKillers were present to take out any of the Wumpi, a large portion of the map was inaccessible to the agent. This test passed with a score of -1876.

3.4 Test Case 4

This test passed successfully. The team of the HunterKiller and the GoldDigger was able to eliminate five out of six Wumpi in the world and recover four out of six pieces of Gold. Due to a limited amount of ammunition not all Wumpi could be killed and the gold the last Wumpi defended could not be recovered. This test passed with a score of 22400.

3.5 Test Case 5

This final test scenario passed successfully. This scenario represented the full final scenario presented in CIS844 for the fall of 2010. All Wumpi in the world were killed and all gold was recovered. The final score of the test was 32198, which was more than 3000 points better than my final score on the project, 29035. This demonstration shows that agents designed using a generic role interpreter can perform as well as, or better than handcrafted agents at the same task. This is probably due to the higher level of abstraction it allows system designers to work at when defining agent behavior.

4 Problems Encountered

No real problems were encountered while testing the system. No new bugs, regressions, or previously unknown limitations were uncovered.

5 Summary

All test cases outlined in Test Plan 1.0 passed successfully. The GMoDS-based Runtime Agent Role Interpreter is ready for release.