# **Final Year Project: Multiplayer Online Game with AI - Progress Report**

## **Progress Chart**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Agenda\Week** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** |
| Determine project direction |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Find out feasibility of Mahjong AI |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Explore Unity |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Study Machine Learning |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Research on TensorFlow & Pytorch |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Research and understand Machine Learning agents (ML-agents) in Unity |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Try out demo game using ML-agent in Unity |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Identify methods to train the AI (Tic Tac Toe) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Understanding the of various data types seen in examples |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Implementing the logic required by the AI |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Write and troubleshoot the script for the AI gameObject |  |  |  |  |  |  |  |  |  |  |  |  |  |

## **Tasks Completed**

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| --- | --- | --- |
| **Date** | **Number of hours** | **Task Completed** |
| 16-SEP-20 | Ongoing | Implementing the logic required by the AI:  Changes had been made to accommodate the AI script. Added a function to convert Text to strings for comparators. |
| 16-SEP-20 | Ongoing | Write and troubleshoot the script for the AI gameObject: |

## **Problems Faced**

CollectObservations does not accept text as a valid input, thus a function to convert the text string to int for the AI observations.

GUI Error faced when trying to have an array to mask the inputs for the AI. Discrete action mask requires enumerable implementation.