Documentation (Tushar Gurjar)- GameAI Pclub Project -mentored by Prannay Khosla

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1 Introduction

Battleships is a board game involving two players, each having fictional ships placed on a grid, which is hidden from the other player. A player needs to guess the location of the other players ships, and sink them. The first player to sink all his/her opponents ships wins the game. The objective will be to design such an AI which can do this efficiently.

2 Implementation Details

We will implement a text-based version (the visual board will be coded afterward, in common for the multiple teams). Initially, our program will arrange the ships on our grid and print the same.. After this, we will expect that given a 2D array representing a board (with three kinds of markers, Hit, Miss and Unguessed), we will be able to output the best possible next move. We should also be able to detect when a win/loss condition is attained.

3 Week1:

1. Learned python by LPTHW and Codeacadamy. All sample files that were used for learning python are added to the github repositories.
2. Learned Commandine tutorials from Codeacedemy.
3. Learned Git from Codeacademy.
4. Learned important python libraries that will be used in project -Numpy, Scipy and MatplotLib from http://cs231n.github.io/python-numpy-tutorial/ and other resources.
5. Gone through the game interface python file made by Rahul Saxena.

Code for the above in github repository- https://github.com/rahul7iitk/Game-API

4 Week2:

1. Understood Machine learning idea and how to implement in our problem.
2. Completed 6 weeks of machine learning course on Coursera - https://www.coursera.org/learn/machine-learning/home/welcome

5 Week3:

1. Made alterations to main code for creating no ships region in the board.
2. Studied about python library tensorflow for implementation of Neural Networks from https://pythonprogramming.net/tensorflow-introduction-machine-learning-tutorial/