Capstone Project Update Planning

**Hard Deadlines:**

**Nov 14 Final Presentation**

**Nov 21 Project Demo**

**Dec 5 Final Report**

The current weekend is Saturday, Oct 7. I have five weeks until the final presentation.

Tasks to complete:

* Do more research into the Monte Carlo Search Tree, create a simple implementation for a simpler game for the purposes of testing. (Oct 7 – Oct 13)
* Create the Python interface for playing Ninety-Nine (with all-human players) (Oct 14 – 20)
* Implement a Monte Carlo Search Tree to play the perfect-information version of Ninety-Nine. (Two weeks, Oct 21 – Nov 4)
* Adjust the Monte Carlo Search Tree to play Ninety-Nine with imperfect information. (Nov 5 – Nov 11)
* Flex time for improvements and catching up (Nov 12 – Nov 21)

Intro: Overview

“Developing an Artificial Intelligence Player for Ninety-Nine”

My program will be an AI algorithm that will search out the best cards to play in order to have the best chance of winning.

Progress: AI is a new area of study for me, so I began by doing research into common algorithms and techniques.

* A reinforcement learning approach is likely beyond my current level
* However, an approach based on tree-searching is powerful and achievable
* Double dummy approach
  + The paranoid algorithm
* Monte-Carlo Sampling

My step-by-step plan

* Do more research into the Paranoid Algorithm for Tree Search, create a simple implementation for a simpler game for the purposes of testing. (Oct 7 – Oct 13)
* Create the Python interface for playing Ninety-Nine (with all-human players) (Oct 14 – 20)
* Implement a Monte Carlo Search Tree to play the perfect-information version of Ninety-Nine. (Two weeks, Oct 21 – Nov 4)
* Adjust the Monte Carlo Search Tree to play Ninety-Nine with imperfect information. (Nov 5 – Nov 11)
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Review main points, any questions?