Green Chess AI - SP14

Date:

2/3/23

Overview:

Our project is to create a variation of the popular game Chess, using a special ruleset and modified piece behavior to provide a completely new playing experience. Additionally, the game will feature an AI opponent, intended to provide challenging yet fair games by using logic to weigh various moves against each other and select ones it finds to be better.

Project Team:

Roles	Name	Major Responsibilities	Contact
Team Leader	Tyler Ebersold	Organize Group and Responsibilities	404-232-5406
Team Members	Logan Lane	Developer and Documentation	678-221-1839
	Michael Dirksen	Developer and Documentation	404-333-3634
Instructor	Sharon Perry	Facilitate Project Process and Advise on planning and management.	Sperry46 on d2l

Tyler Ebersold

Logan Lane

Michael Dirksen

Project Website:

We will be using GitHub Pages to host our website, which will contain all the information for our project. The current planned url is greenchessai.com, but this may change in the future

Final Deliverables:

- A Windows executable file containing our chess game, allowing you to play against an AI opponent
- A requirements document listing functional and non-functional requirements we had in mind while designing and creating the game
- A document describing the chess game rules
- A design document that describes how our AI is able to find valid moves and compare them against each other
- Our project source code
- A project website with all of the above clearly organized and available

Milestone Events: (Tentative)

- First Milestone - By 2/28/23
    - Creating the board and the pieces along with the proper implementation of a graphical user interface.
- Second Milestone - By 3/15/23
    - Getting the pieces to move properly and allow them to be able to capture enemy pieces.
- Third Milestone - By 4/14/23
    - Creating the AI that the player will compete against. The AI must be able to evaluate board positions, implement strategy, have a search algorithm to find the best move, have three difficulty settings (easy, medium, and hard), and follow the rules of the game.

Meeting Schedule Date/Time:

- Milestone Report Meeting 1: 3/1/23 at 7:00 PM
- Milestone Report Meeting 2: 4/1/23 at 7:00 PM

Collaboration and Communication Plan:

Our team will be using Discord as our primary method of communication and collaboration. Throughout the semester any internal meetings or work days will be conducted through Discord. Response times for team members are within 24 hours of communication.

Weekly communication will help us facilitate a successful project: Meeting times will be weekly either in class Monday and Wednesday from 11:00 - 12:15 or alternatively through Discord at varying intervals throughout the week.

Files and notes/resources will be shared through Discord, Google Docs, and GitHub. Team members have access to a shared Google account as well as a shared GitHub which will facilitate simultaneous workflow.

The Project Leader, Tyler Ebersold, will be in charge of handling communication with the Project Manager Sharon Perry. However, all members of the Green Chess AI team will be able to communicate with either the Project Leader or Project Manager concerning deadlines and information pertaining to the success of the group.

Project Schedule and Task Planning:

Attached is the constructed Gantt Chart for our project. The work hours section is roughly estimated as we are unsure how long certain parts of the project will take until we tackle them.
Gantt Chart

Risk Assessment:

- Performance Issues: The algorithm for the AI can perform poorly if it is not optimized correctly. It needs to be made sure that the AI does not cause hardware to slow or consume too much processing power.
- Game Balance: The AI needs to provide a balanced gameplay experience for the user. If the AI becomes too strong and unbeatable, the user may find the experience unenjoyable.

Version Control Plan:

We plan to create a GitHub account for the project and use it to share code, track changes, and organize our codebase. This account will also hold our important project documents, such as design documents, requirements documents, our project plan, etc. This will make our workflow more efficient and organized.