

SP-14 Green Chess Game Using AI

4850, section 01, Spring, 2024

1/28/24

**Project Team**

Roles	Name	Major responsibilities	Cell Phone / Alt Email
Project owner	Faculty Member	N/A	N/A
Team leader	Hakeem Hinds	Requirements/Scheduling and non major coding tasks	678-559-5094 hakeemhinds27@gmail.com
Team members	Cody Johnson	Requirements and non major coding tasks	502-759-5768 Cody.Johnson95@yahoo.com
	Oleg Prokofyev	Developer	770-235-1876 OlegProkofyev2003@gmail.com
	Nathan Robins	Developer	678-923-0060 nathanr811@gmail.com
Advisor / Instructor	Sharon Perry	Facilitate project progress; advise on project planning and management.	770-329-3895

Overview

The Project's aim is to make a completed chess game that allows two people to play a game together or allows a person to play against ai. Using the given resources such as chess libraries and other open sources the project will endeavor to build a chess game that incorporates a good user interface as well as a robust chess engine. The objective of this project is to implement ai in reading moves and correctly choosing the correct one to win against a player. Based on chess rules ai and player can only move specific places based on where they are on the board with said chess pieces.

Overall Deliverables:

- Functional chess user interface.
 - Players must be able to drag and drop their pieces in legal moves, on their turn.
 - The game must be able to determine which moves are legal and which moves are illegal for a player's pieces.
 - The game must know when it is over, and declare a winner.
 - The game must provide both a player vs. player option and a player vs. AI option
- The chess interface must have a functional AI that users can play against.
 - The AI must make legal moves only.
 - The AI must make moves that make sense in each position.
- A website which describes the project, demonstrates how it works, and shows its functionality.

Procedural Deliverables

- Project Plan document
- SRS document to clearly outline the specifications and scope of the project.
- Test reports that give a comprehensive analysis of the AI's responses in numerous different scenarios, as well as an analysis of the performance and reliability of the UI.
- Final Report for a summation of all previous tests, user guide, functionality, scope, process, etc. Will be used in order to create the website.

Milestone Events (DISCUSSION AND GANTT CHART)

2/26/24

- Design and implement a fully functioning chess board
- Implement chess pieces
- Set chess pieces to set movements
- Finished design and requirements
- Outline of Game rules

3/25/24

- Implement a simple working ai that can play chess
- keep track of chess pieces

4/8/24

- A working player vs player mode
- A working player vs ai mode
- test and debug modes

4/22/24

- Finished version of chess game
- A website to go along with the chess game
- Fully functioning ai that can play against ai human
- final report

Meeting Schedule Date/Time (DISCUSSION)

Every Saturday from 6pm

Collaboration and Communication Plan (DISCUSSION)

Communication will be via Sharon Perry's teams and a group chat. Team members are encouraged to respond between the same day and the day after. Meetings will be held weekly unless otherwise stated in the group chat. Meetings will last anywhere from 5 minutes to a maximum of an hour. During meeting we will divide tasks and

Project Schedule and Task Planning (GANTT CHART) - separate file

SP-14Green-Chess-GanttChart XLSX																					
File Edit View Insert Format Data Tools Help																					
A1 Project Name:																					
1 Project Name: SP 14 Green Chess AI																					
2 Report Date: 1/28/2024																					
4 Phase	Tasks	Complete%	Current Status	Memo	Assigned To	F 01/14	G 01/21	H 01/28	I 02/04	J 02/11	K 02/18	L 02/25	M 03/03	N 03/10	O 03/17	P 03/24	Q 03/31	R 04/07	S 04/14	T 04/21	U Project completion
5 Requirements	Meet with team	100%	All			2	4														
6	Project plan	100%	Due on Jan. 30th	All				8	4												
7	Define requirements	50%	working on this	All				4	4												
8	Complete SDD	25%	working on this	All				8	4												
9	Complete SRS	0%	working on this	All				8	4												
10	Review R & D with team	0%	All				3	3													
11	Submit Requirements and Design	0%	Submit by Feb. 4th	All				2													
12 Project design	Define tech required *	0%	Oleg, Nathan					5													
13	Develop game rules	0%	All					2													
14	Database design	0%	Hakeem, Cody					5	4	3											
15	Coding design	0%	Oleg, Nathan					4	4	2											
16	Set up Github / Update Github	0%	will continue to update w	All				4	4	4	3	3	3	3	3	3	3	3	3	3	
17	Develop working prototype	0%	might get to this earlier	Oleg, Nathan				6	8	8	8	4									
18	Test prototype	0%	Oleg, Nathan					8	6	4	4	4									
19	Present Prototype	0%	Present by March 31st - n	All																	
20 Development	Review prototype design	0%	All						6	5	5	4									
21	Rework requirements (if needed)	0%	Hakeem, Cody						4	4											
22	Document updated design	0%	Hakeem, Cody						3	3											
23	Develop player vs player mode	0%	Oleg, Nathan						4	4	4										
24	Create working ai	0%	Oleg, Nathan						8	8	8	6									
25	Set up website	0%	All						8	5	5	3									
26	Test/Debug product	0%	Oleg, Nathan						8	8	8	6									
27 Review	Review with Sperry	0%	Due by April 9th	All														2			
28 Final report	Presentation preparation	0%	All														10	8	8	3	
29	Finished website	0%	All														2	2			
30	Poster preparation	0%	Hakeem, Cody														8	8	4	3	
31	Final report submission to D2L and project owner	0%	Due on April 21st	All															2		
32					Total work hours	353	2	4	31	21	26	20	17	19	31	44	44	50	29	15	8
33																					
34																					
35	* formally define how you will develop this project including source code management																				
36	**This is set up with the dates showing the end of that week so we can see when something needs to be completed by **																				
37 Legend																					
38	Planned																				
39	Delayed																				
40	Submit / Present																				
41	Number Work man hours																				

Version Control Plan (DISCUSSION)

In this project, we will use version control to keep track of changes made to our codebase. We will be using Git as our Version Control System because it is a popular system, which will minimize the time needed to learn about using it. Additionally, we will use GitHub as our development platform. GitHub will provide us with a shared space where we can store our code and manage our code changes and pull requests. GitHub will also be our main way to track features, issues, and other work items while we work on this project.

In addition to version control, we will also utilize branching strategies to keep our code organized. In this project, we will be using the GitHub Flow branching strategy. GitHub Flow effectively organizes code into features and pull requests while remaining a lightweight strategy that allows for fast development. It mitigates the chances of developers making conflicting changes, and it is not as convoluted as the Git Flow branching strategy. This strategy seems to be the best fit for our team because it allows our small team to develop with agility while remaining organized.

Resources and References

- http://en.wikipedia.org/wiki/Project_plan
- <http://www.projecttimes.com/articles/10-steps-to-creating-a-project-plan.html>
- <http://www.easyprojects.net/blog/2012/03/19/project-management-101-what-are-milestones/>