Project Initiation Document

COMP3000
Computing Project
2022/2023

Project Title
ChessAI – A Chess Practice Tool

Project Lead Developer / Manager
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Project Supervisor
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Links
Source code: https://github.com/ORG4N/ChessAI

Document Revision History			
Date	**Ver.**	**Description**	**Changed by**
18/10/2022	1	Initial Project Initiation Document (PID).	Callum Organ

Project Vision

"To develop a fast Machine Learning application wherein Chess enthusiasts can practice with AI trained against the data of professional players (i.e., Magnus Carlsen) or amateurs within set Elo rating ranges; ChessAI strives to be a practice tool that will challenge players, transforming them into stronger opponents."

Project Goals

- Lead developer grows proficiency in:
    - Designing and developing desktop applications.
    - Optimizing software
- Contribute to helping novice chess players improve at the game.
- Develop a working MVP by: 23/04/2023
- Develop and release a final product by: 01/05/2023

Project Objectives

- AI must be highly accurate and reflect the data that it is being trained on i.e., an AI trained on a specific professional player's data should play like that player.
- AI must be fast and efficient and make moves in a timely fashion (within seconds).
- UX must be clear and separate the Chess from the evaluations.
- UX must present evaluations of player playstyle to help identify blunders.

Critical Success Factors

- Lead developer:
    - attends and is actively involved within bi-weekly meetings.
    - dedicates approximately 15 hours per week to project.
    - maintains Gantt chart, Kanban board, and risk register.
    - develop familiarity with technology – practice coding.
- Diverse client involvement when testing deliverables.
- Stay agile!

Risks

Common Risks

Only some commonly identified risks for most projects will be outlined here. To find a more exhaustive list of risks see the section *Risk Register and Assessment Matrix* below.

Risk	Description
Poor quality code	Code produces incorrect output or does not perform a set task correctly.
Deadline creep	Tight deadlines may cause low quality deliverables to be produced.
Inaccurate scheduling	May lead to more important features being rushed, and more time spent on less important features.
Poor productivity	Leads to deadlines not being met and prototypes being unfinished.

Risk Management Approach

When a risk is identified it will be placed within the Risk Register and Matrix where additional information about the risk can be found, such as the type of risk, description, probability of occurring, impact, and severity. This information allows for risks to be prioritised and therefore, if they do occur, the most impactful ones can be dealt with first.

Identified risks will then be placed within the Risk Mitigation Plan where potential choices of strategies to reduce the impact of the risk will be outlined. For example, a strategy might be to accept the consequences of the risk if they are not severe and there is minimal impact/cost. Other strategies include avoidance, reduction, and transferring responsibility to a 3rd party. Solutions to reducing or solving the problem will then be written to this Mitigation Plan.

Risk Register and Risk Assessment Matrix

This register and matrix are an ongoing, evolving piece of documentation that will be consistently added to throughout the project and will therefore exist as a separate document.

The Risk Register and Assessment Matrix can be found on the GitHub repository at the following URL:

https://github.com/ORG4N/ChessAI/blob/main/Documentation/Analysis/Risk%20Register%20and%20Assessment%20Matrix.pdf

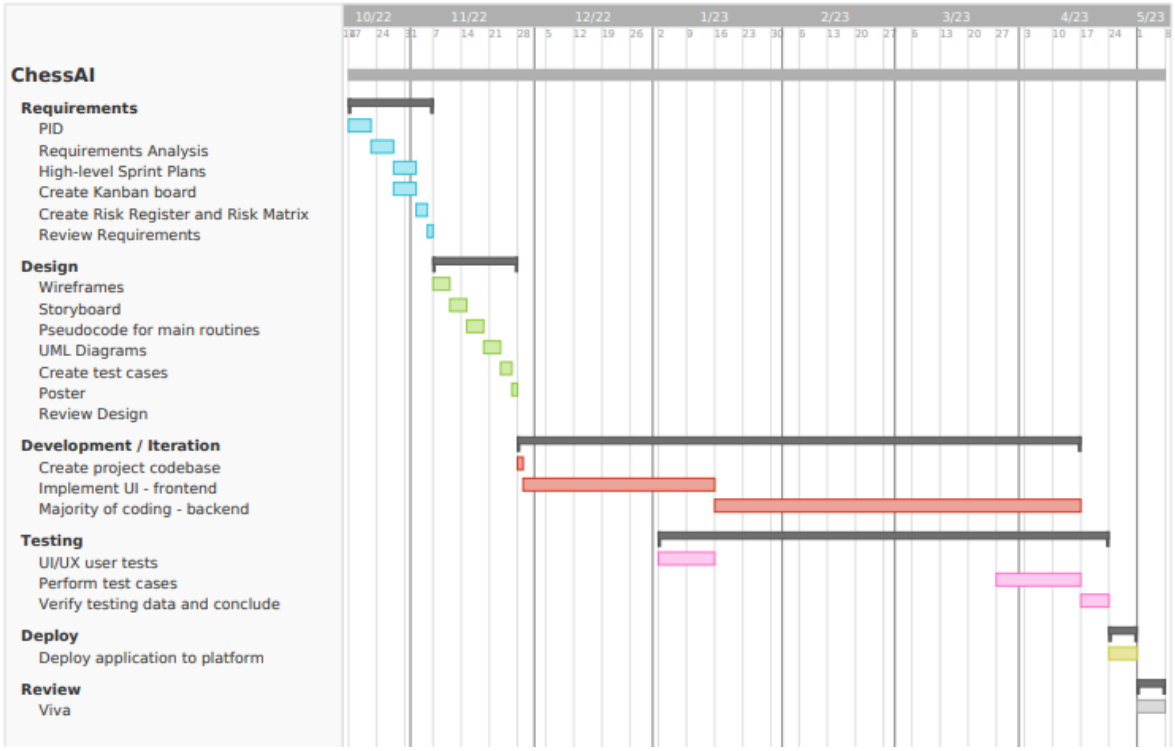
Roles and Responsibilities

It is the duty of the Project Lead Developer to ensure that they fulfil the following roles and responsibilities:

Role	**Responsibility**
Risk Manager	Identify and describe risks within Risk Register. Categorize risks within Risk Assessment Matrix. Define mitigation/response strategies.
Project Manager	Plan the execution of the project. Schedule tasks via Kanban Board. Keep track of progress of project by being aware of deadlines and comparing work done to initial Gantt chart.
Developer	Produce deliverables (prototypes, meeting reports, code) and present them to Project Supervisor. Ensure that deliverables are correct and well-tested (where possible) by reviewing them.

Proposed Gantt chart

Following in line with the SDLC, throughout the project's lifetime it will progress through multiple phases: Requirements, Design, Development, Testing, Deploy, and Review.



As seen in the Gantt chart, the project starts with Requirements and Design. These stages are equal in length and are involved with initiating the project and making it clear what must be developed. Setting these requirements and preplanning deliverables ensure that the project will be successful and relevant to the Project Vision. The Development and Testing stages will be the longest, however these stages will be iterative and cycle between the two, as is the intent of following the Agile methodology. Deploy and Review are the shortest stages because they will provide closure to the project once it has essentially finished.

This Gantt chart is expected to change drastically throughout the project as this is a very high-level estimate and does not consider

Keywords

Chess, ML, Machine Learning, AI, Artificial Intelligence, Chess Practice Tool