Progress Report

- Increment 1 -

Group 34

1) **Team Members**

   Gavin Antonacci, gaa21b, imhubgitting

   Julian Jordan, jaj21h, JulianJ51

   Guilermo Marr, gem21e, Gmo3

2) **Project Title and Description**

   Chess AI Game, Title (TBD)
   A level-based roguelike where the player fights harder and harder chess bots. Throughout the game, the player unlocks abilities and will have to adjust to the difficulty of each AI bot. Before and after each fight, the player will be able to explore the castle (main playing area) to earn unlocks and lore. After the player beats the final and hardest boss, the game will have been beaten.

3) **Accomplishments and overall project status during this increment**

   Game Board Implementation:

   - Successfully implemented a functional chessboard using Pygame
   - Pieces can be moved according to standard chess rules
   - Basic move validation is working

   Piece Mechanics:

   - Implemented classes for all chess pieces
   - Special moves like castling and promotion still need to be implemented

   User Interface & Assets

   - Added chess piece sprites
   - Implemented a simple graphical interface

   Project Structure:

   - Organized code into modules for board, pieces, square, and main

4) **Challenges, changes in the plan and scope of the project and things that went wrong during this increment**

   Graphics
   - Implementing a smooth UI with Pygame took longer than expected

   File and Class Formatting
   - Design and formatting how each of our classes will interact with each other

5) **Team Member Contribution for this increment**

   a) **Progress Report**
      i) Gavin: Project Title and Description, Accomplishments, Video
      ii) Julian: Plans, Stakeholder
      iii) Guilermo: Challenges

b) Requirements and Design Document
   i) Gavin: Overview, Functional, Use Case Diagram
   ii) Julian: Nonfunctional, Class Diagram
   iii) Guilermo: Operating Environment, Assumptions/Dependencies

c) Implementation and Testing Document
   i) Gavin: Programming Language, Platforms/Technologies
   ii) Julian: Execution-based Functional Testing, Execution-based Non-Functional Testing
   iii) Guilermo: Non-Execution-based Testing

d) Source Code
   i) Gavin: Square.py, Board.py, Queen.py
   ii) Julian: Pieces.py
   iii) Guilermo: Main.py

e) Video
   i) Gavin

6) Plans for the next increment

Introduce second player AI with difficulty scaling

Refine UI to be more polished

Implement game state management, saving and loading functionality

7) Stakeholder Communication

Dear Stakeholder,

Our team has been hard at work in the beginning stages of this project to bring you a quality product that we can all be proud of. As this is a unique type of project for the team and I, initial development has been slower to allow adequate confidence in our ability to produce an excellent product with enjoyable gameplay and sophisticated AI capabilities.

Currently, our team is developing a chess game engine that will cooperate well with the intended AI models. We have achieved a successful rendering of the game board and are working to incorporate all relevant chess game logic and preparing to train AI models that behave as a sophisticated chess opponent. Over the next increment, the team aims to demonstrate a fully functional chess game with a sophisticated AI, functional saving/loading capabilities, and begin expanding the scope to include unique chess matches and special abilities.

I appreciate your patience regarding our initial development stages. The team is excited about the work we are setting out to accomplish over the next increment and look forward to updating you regarding our progress once more.

Best,
Group 34

8) Link to video

https://drive.google.com/file/d/1LYKoBreP-dFn8iZgjwCuDoRpxn4loO0A/view?usp=sharing