Software Implementation and Testing Document

For

Group 34

Version 1.0

Authors:
Gavin Antonacci
Julian Jordan
Guilermo Marr

1. Programming Languages (5 points)
Python
We use python for the core gamic logic including chessboard mechanics and move validation. We also use Pygame for rendering the board and pieces and handling events.

We use python for its simplicity and readability, making development faster. Pygame gives an accessible way to create a 2D game interface.

2. Platforms, APIs, Databases, and other technologies used (5 points)
Platforms:
- Windows

APIs/Databases:
- Gym Library OpenAI
- Pandas Data Storage
- Stockfish Open source engine, used for AI-based move calculations

Library:
- Pygame, used for rendering game interface and handling user interactions

3. Execution-based Functional Testing (10 points)
Functional testing was performed through unit tests of core mechanics like move validation and click events. Manual playtesting confirmed that user interactions worked properly and edge cases were also tested.

4. Execution-based Non-Functional Testing (10 points)
Our testing focused on performance and stability. Our game was tested to ensure smooth execution and no crashes or unexpected behaviors.

5. Non-Execution-based Testing (10 points)
This testing included code reviews where we modified existing functions and code chunks to give more context to their purpose. We solidified our coding style, file format, and added comments to explain large functions.