Project Proposal

Project Title

Object-Oriented Chess Game in C++

Group Members

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3. Aazmeer – 24K-0978

1. Introduction

• Background: This project applies core OOP principles to design and implement a chess game in C++. It demonstrates abstraction, encapsulation, inheritance, and polymorphism through interactive gameplay.
• Problem Statement: Implementing chess mechanics requires handling complex object relationships and behavior in a maintainable way, ideal for practicing OOP concepts.
• Objectives: Build a playable chess game with a modular structure, supporting move logic, game rules, and simple AI using OOP techniques.

2. Scope of the Project

• Inclusions: Board display, basic chess rules, turn system, player vs player, player vs computer (using Stockfish AI).
• Exclusions: Online multiplayer, graphical animations, and 3D rendering.

3. Project Description

• Overview: The game features console and GUI components built in C++ using SFML and integrates the Stockfish engine for AI-based moves.
• Technical Requirements: C++ compiler, SFML, Visual Studio Code,

GitHub for version control.
• Project Phases: Planning > Class Design > Implementation > AI Integration > Testing > Report Writing.

4. Methodology

• Approach: The team followed an agile, modular development approach, assigning different components to team members.
• Team Responsibilities:
- Abdullah: GUI and chess rules with logic.
- Hassan Ahmed: Logic with AI integration.
- Aazmeer: Chess rules and logic implementation.

5. Expected Outcomes

• Deliverables: C++ project source code, working game, brief documentation.
• Relevance: Demonstrates OOP application in real-world software, problem-solving, and C++ proficiency.

6. Resources Needed

• Software: Visual Studio Code, C++ compiler, SFML, Stockfish.
• Other Resources: GitHub, online C++ tutorials, SFML docs, instructor support.