

Team Codalohic

- Project: Playful AI
- Intelligent Board Game Opponents and Advisors

Phase 1: Brainstorming & Ideation

- Objective:
- Develop an AI-powered platform to enhance board gaming with adaptive AI opponents and real-time strategic guidance.
- Key Points:
 - Real-time coaching and move suggestions
 - Integration with physical and digital

Phase 2: Requirement Analysis

- Technical Requirements:
 - • GenAI for decision-making (Gen AI, Claude)
 - • Computer vision (OpenCV) for physical board games
 - • APIs for digital game integration
 - MongoDB for storing previous game data
- Functional Requirements:
 - • User Driven Difficulty adjustment
 - • In-game strategy coaching
 - • Post-game insights for improvementa

Phase 3: Project Design

- System Flow:
- • Recognize game state using OpenCV/API
 - Strategy advisor suggests optimal moves
- • User-friendly UI for analysis and learning
- • Data pipeline for continuous AI improvement

Phase 4: Project Planning (Agile)

- Sprint 1 – Setup & Integration:
 - Train AI models, integrate OpenCV, develop UI prototype
- Sprint 2 – Core Features:
 - Implement adaptive AI, strategy engine, real-time analysis
- Sprint 3 – Testing & Deployment:
 - Calibrate AI difficulty, optimize UX, launch MVP

Phase 5: Development

- Technology Stack:
 - • GenAI (GPT-4, Claude)
 - • OpenCV (for physical board state recognition)
- Python Flask for API creation
- Stockfish(predefined AI model) in python

Phase 6: Functional & Performance Testing

- Testing Focus:
 - • AI accuracy in board state recognition
 - • Adaptive difficulty performance
 - • Strategy suggestion effectiveness
 - • Integration with physical/digital board games
 - • User experience and response time

Final Submission

- Deliverables:
 - Project Report
 - Demo Video (3-5 Minutes)
 - GitHub Repository
 - Final Presentation

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