

## Implementation Notes:

1. Component Architecture:
  - Main ChessGame component acts as container
  - Modular services for API and language
  - Separate concerns for state management
2. State Management:
  - Uses React useState for game state
  - Periodic board updates with useEffect
  - Centralized state in ChessGame
3. API Integration:
  - RESTful service calls
  - Guest game functionality
  - Move validation on server
  - Board state synchronization
4. Internationalization:
  - Language provider integration
  - Translation key system
  - Dynamic text rendering
5. Key Features:
  - Guest play mode
  - Real-time board updates
  - Piece capture tracking
  - Move validation
  - Multi-language support

The architecture follows a modified MVC (Model-View-Controller) pattern adapted for a React-based web application.

1. Frontend Layer (View):
  - User Interface Layer: Main container for all React components
  - Components:
    - Chess Component: Main game controller
    - Language Selector: Handles language switching
    - Board Component: Manages chess board state
    - Piece Component: Individual chess piece logic

2. State Management (Model):
  - Game State: Manages chess game state using React useState
  - Language State: Handles language preferences and translations
3. Backend Services (Controller):
  - REST API Layer: Handles communication between frontend and services
  - Game Logic Service: Implements chess rules and validations
  - Translation Service: Manages multilingual support
  - Database: Stores game states and language data

#### Key Architectural Features Covered:

1. Component-Based Architecture:
  - Modular components for reusability
  - Clear separation of concerns
  - Hierarchical component structure
2. State Management:
  - Centralized state management
  - Immutable state updates
  - Clear data flow patterns
3. Service Layer:
  - RESTful API design
  - Microservices architecture
  - Scalable backend services
4. Data Flow:
  - Unidirectional data flow
  - Event-driven architecture
  - Clear service boundaries

