

## Java Project Proposal: Mafia - Web of Lies

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**1. Project Title:** Mafia: Web of Lies

**2. Project Type:** Multiplayer Online Game

**3. Description:** "Mafia: Web of Lies" is a real-time, browser-accessible multiplayer strategy game built with Java and Spring Boot. Players join via a room code and are assigned hidden roles such as Mafia, Doctor, Detective, or Civilian. The game alternates between night and day phases, during which players take secret actions or engage in open discussions and voting to uncover and eliminate the Mafia. The project features real-time gameplay using WebSockets, animations for immersive storytelling, and custom rule expansion to enhance strategic complexity.

### 4. Functionalities:

- User registration and lobby system with room code
- Secret role assignment to each player
- Turn-based real-time gameplay (night/day phases)
- Role actions: Mafia kills, Doctor saves, Detective investigates
- Voting and elimination during day phases
- Win condition checking (Mafia vs Civilians)
- WebSocket-based real-time updates
- Visual animations during game phases (night actions, voting, etc.)
- Expandable role and item system (custom features)
- Game history and player stats (optional)

### 5. Technical Specifications:

- **Backend:** Java + Spring Boot
  - ◆ REST APIs for user and room management
  - ◆ Spring WebSocket (STOMP) for real-time communication
  - ◆ Game logic components (PhaseManager, RoleHandler, VoteProcessor)
- **Frontend:** HTML/CSS/JavaScript or React (browser-based)

- ◆ Responsive design for mobile/desktop play
- ◆ Animations for game actions (CSS/JS)
- **Database:** H2 or PostgreSQL
  - ◆ Tables: Player, GameRoom, GameState, Role, ActionHistory
- **Hosting:** Deployed on platforms like Render, Heroku, or Railway
- **Security:** Role secrecy maintained server-side, player actions verified

## 6. Future Features:

- AI players to simulate missing roles
- In-game chat during discussion phase
- Puzzle-based detective system
- Custom roles: Shapeshifter, Bomber, Seer, etc.
- Time-based pressure mechanics (Time Bomb mode)

**7. Target Audience:** Fans of strategic deduction games, logic puzzles, and real-time multiplayer experiences.

## 8. Development Timeline:

Week 1: Backend structure, room/player logic

Week 2: WebSocket integration + frontend UI

Week 3: Game logic and role mechanics

Week 4: Animations and visual enhancements

Week 5+: Custom rule integration and polish