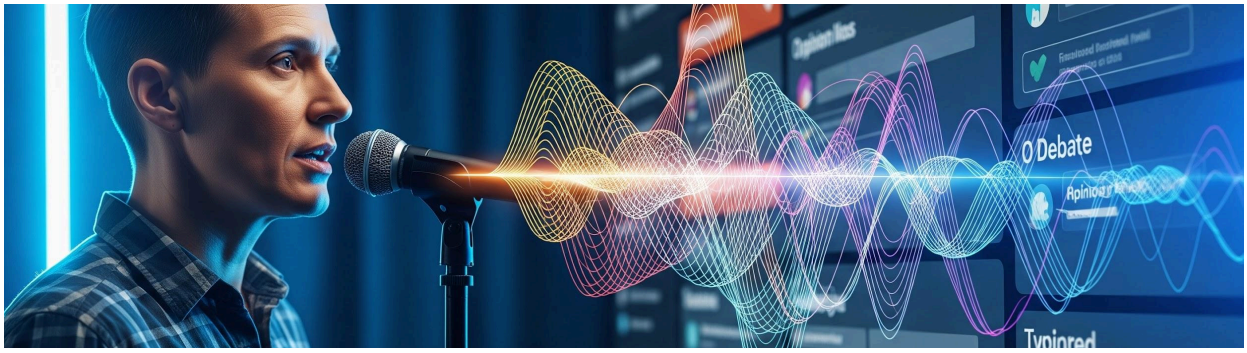


Samvaad Website Documentation

Samvaad is a comprehensive debate platform designed to enhance the debating experience through advanced AI tools, structured management features, and engaging gamification. This documentation outlines the core functionalities, the development process, and provides instructions for a user demo.

Features

Samvaad offers a rich set of features categorized to provide a holistic debating environment:

Debate Management & Formats

- **Asian Parliamentary (AP)**: Supports 6 speakers plus reply speeches.
- **British Parliamentary (BP)**: Accommodates 8 speakers across 4 teams.
- **World Schools (WS)**: Designed for 6 speakers plus reply speeches.
- **Custom Format Support**: Flexible speaker configurations to cater to diverse debate structures.
- **Motion Library**: A curated collection of debate topics.
- **Session Management**: Real-time status tracking for active debate sessions.

AI-Powered Adjudication

- **Comprehensive Scoring**: Evaluates Matter, Manner, and Method.
- **Chain of Thought Analysis**: Identifies clashes and logical progression within arguments.
- **Speaker-by-Speaker Feedback**: Provides detailed feedback on role fulfillment.
- **Team Rankings**: Generates rankings with detailed justifications.

- **Reply Speech Evaluation**: Specialized criteria for assessing reply speeches.
- **Timestamped Comments**: Granular feedback linked to specific points in the debate.
- **Custom Adjudication**: Allows adjudication from uploaded transcripts (PDF/TXT).

Speech & Audio Features

- **Live Speech Recognition**: Utilizes Web Speech API for real-time transcription.
- **Real-time Transcription**: Transcribes speeches during debates.
- **Audio Playback**: Features text-to-speech synthesis for listening to speeches.
- **Microphone Controls**: Visual feedback for microphone status.
- **Timer Integration**: Enforces speech time limits during debates.

AI Debate Simulation

- **One-on-One AI Debates**: Engages users in dynamic debates with AI opponents.
- **Rebuttal Training**: Provides personalized feedback for improving rebuttals.
- **AI Speech Generation**: Generates speeches contextual to the debate flow with the help of Sarvam API.
- **Adaptive AI Responses**: AI adjusts responses based on user arguments.
- **Performance Analytics**: Offers insights for skill improvement.

Gamification & Engagement

- **Achievement System**: Unlockable badges and milestones.
- **Experience Points (XP)**: Earned through participation and performance.
- **Skill Level Progression**: Progress from Novice to Expert debater.
- **Weekly Challenges**: Rotating debate topics to keep engagement high.
- **Leaderboards**: Tracks performance across different categories (accuracy, improvement, consistency).
- **Debate Streaks**: Records consecutive days of practice.
- **Performance Badges**:
    - "Master Rebuttalist": Excels in counter-arguments.
    - "Clash Champion": Identifies key debate points.
    - "Eloquent Speaker": Achieves high manner scores.

    - "Logic Lord": Demonstrates outstanding matter scores.
    - "Methodology Master": Perfect method execution.
- **Daily Practice Rewards**: Encourages consistent engagement.
- **Tournament Mode**: Supports bracket-style competitions.
- **Progress Visualization**: Skill trees and advancement paths.

Analytics & Tracking

- **Detailed Performance Metrics**: Measures Clarity, Relevance, and Persuasiveness.
- **Progress Tracking**: Monitors performance across multiple sessions.
- **Strengths & Improvement Areas**: Identifies specific areas for development.
- **Historical Data**: Provides trend analysis over time.
- **Export Capabilities**: Allows export of transcripts and results.
- **Comparative Analysis**: Compares performance against personal bests and community averages.

User Experience

- **Responsive Design**: Optimized for all devices.
- **Dark Mode Interface**: Modern aesthetics for improved viewing.
- **Intuitive Navigation**: Role-based access for different user types.
- **Real-time Updates**: Live session status updates.
- **Accessibility Features**: Includes keyboard navigation.

Technical Features

- **File Upload Support**: Accepts PDF/TXT transcripts.
- **RESTful API**: Comprehensive endpoints for integration.
- **Database Integration**: Utilizes MongoDB for data storage.
- **Error Handling**: Graceful fallbacks for robust operation.
- **Rate Limiting**: Protects API from excessive requests.
- **Scalable Architecture**: Modular design for future expansion.

The Process: Building Samvaad

The development of Samvaad followed an iterative process, focusing on agile methodologies to address challenges and incorporate feedback at various stages.

Stage	Description	Key Learnings/Roadblocks
Phase 1: Concept & Planning	Defined core features, user personas, and technical stack.	Initial scope creep was a challenge; refined features to focus on core value proposition.
Phase 2: Core Development (Backend)	Built the database schema, RESTful API, and integrated MongoDB. Implemented initial AI model for basic adjudication.	Integrating real-time speech recognition with complex AI models required significant optimization for latency.
Phase 3: Frontend Development	Developed the user interface, responsive design, and integrated API endpoints.	Ensuring intuitive navigation and a seamless user experience for various debate roles was challenging.
Phase 4: AI Adjudication Enhancement	Refined AI models for comprehensive scoring, chain of thought analysis, and speaker-by-speaker feedback.	Achieving nuanced and accurate AI feedback, especially for reply speeches, demanded extensive training data and model fine-tuning.
Phase 5: Gamification & Simulation	Implemented achievement system, XP, leaderboards, and AI debate simulation.	Balancing engagement with educational value in gamification required careful design.
Phase 6: Testing & Optimization	Conducted extensive testing (unit, integration, user acceptance) and performance optimization.	Cross-browser compatibility and mobile responsiveness presented unique optimization challenges.
Phase 7: Deployment & Monitoring	Deployed the application and set up monitoring tools.	Ensuring scalability and robust error handling in a production environment

Stage	Description	Key Learnings/Roadblocks
		required continuous monitoring and iteration.

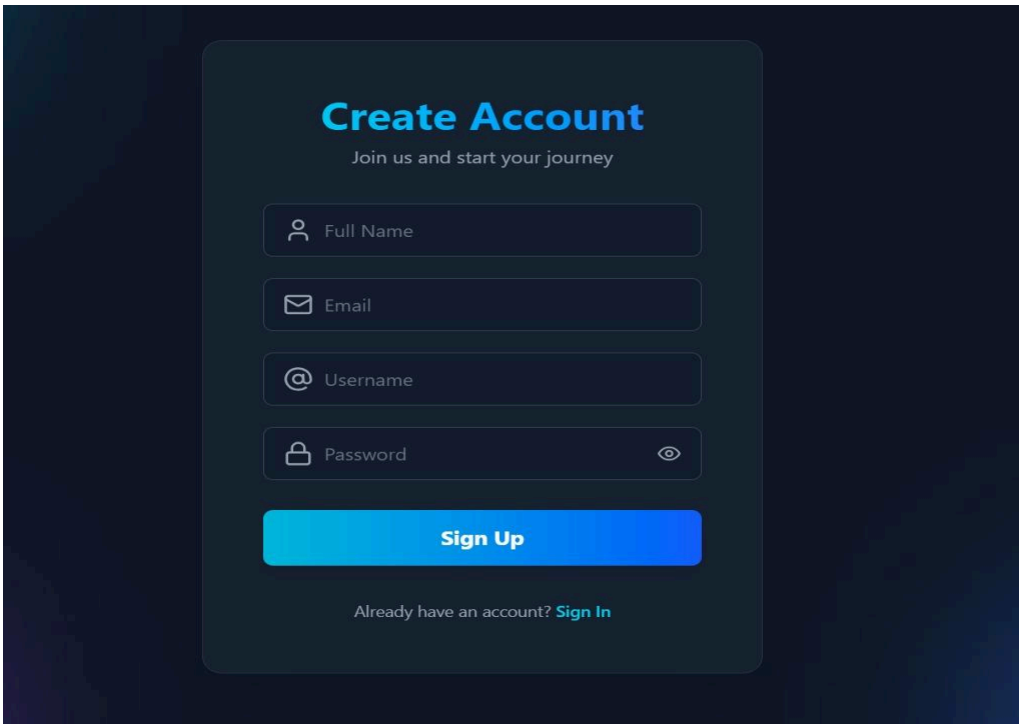
Step-wise Instructions for a User Demo

To experience Samvaad on your own device, follow these steps:

1. **Prerequisites**: Ensure you have a modern web browser (Chrome, Firefox, Edge) and a stable internet connection. A microphone is recommended for speech features.

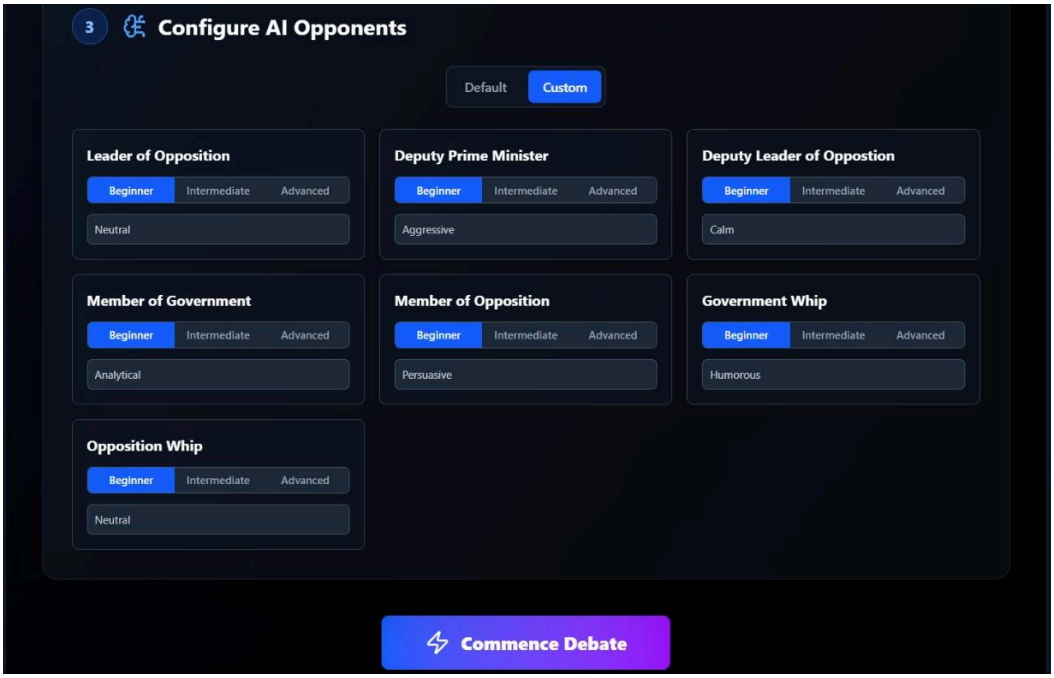
2. **Access the Prototype**: Navigate to the working prototype link:

3. **Create an Account**:
    - Click on the "Sign Up" button on the homepage.
    - Enter your desired username, email address, and password.
    - Confirm your email address if prompted.

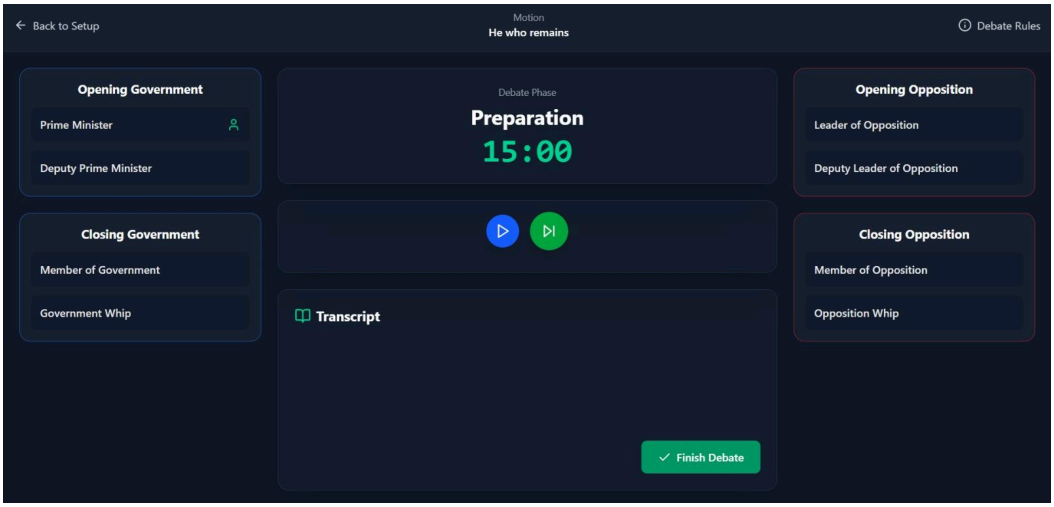


4. **Explore Debate Formats**:
    - From the dashboard, click on "Start Debate."
    - You can explore the "Motion Library" to select a debate topic.
    - Select your preferred debate format (e.g., "Asian Parliamentary," "British Parliamentary," or "Custom") and role.

5. **Start an AI Debate Simulation**:
    - Configure AI opponents, from the default AI opponents or create a custom opponent.
    - Click on “Commence debate”.
    - Click on “Confirm & Start”.

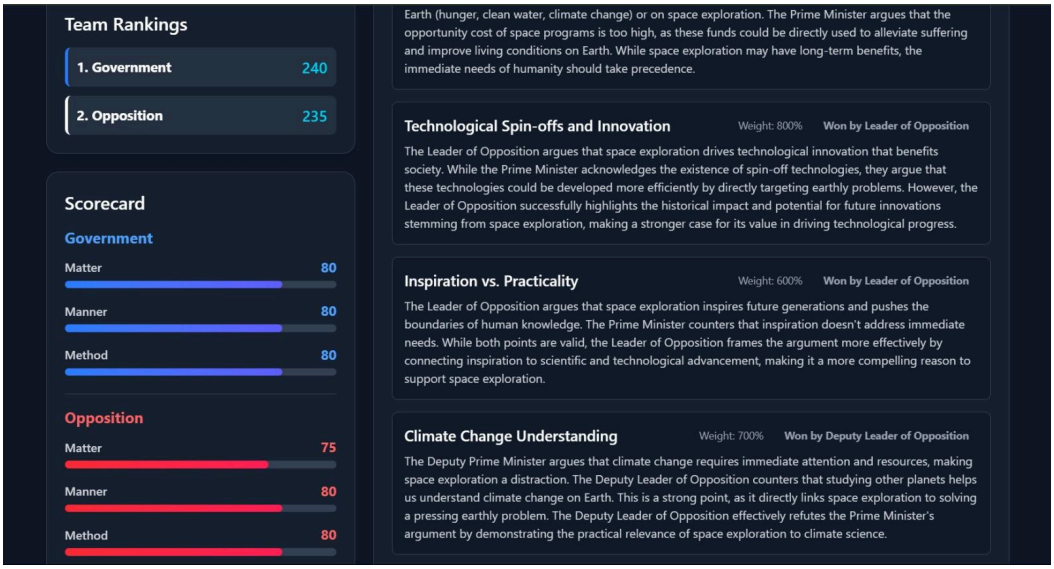


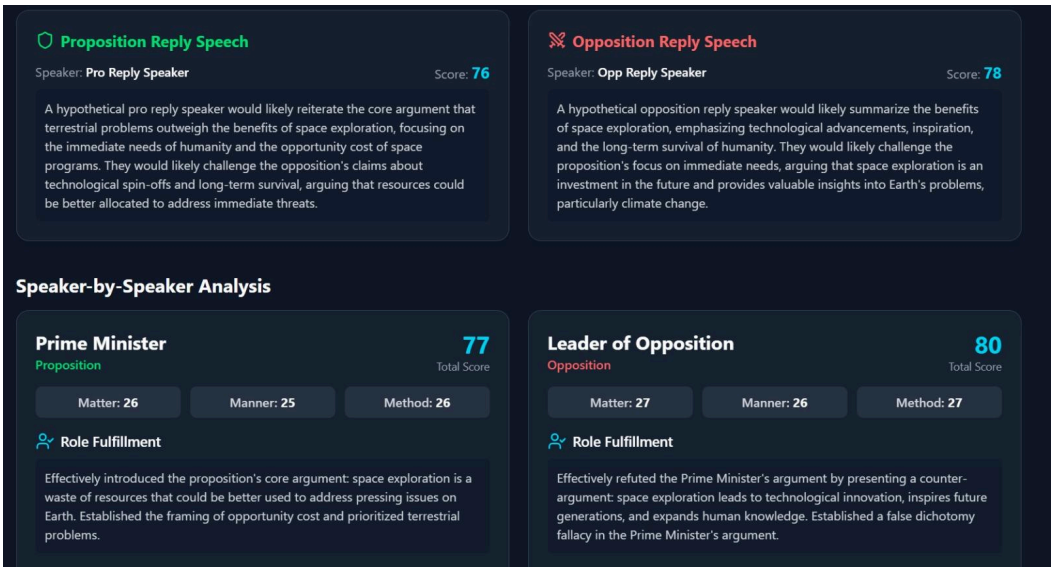
- You will be redirected to an interface similar to the below image:



- You can see live transcripts and live Point of Information(POI) after protected time is over.

6. **Review Adjudication & Feedback**:
   - After completing a debate you will be redirected to the adjudication page, or you can navigate to "Past Debates" or "My Performance."
   - Review the "Comprehensive Scoring" (Matter, Manner, Method).
   - Examine the "Chain of Thought Analysis" and "Speaker-by-Speaker Feedback."
   - You can click on "View Detailed Feedback" to view a detailed Analysis of every delegate.





7. **Explore Gamification**:
    - You can see your streak on the Dashboard.
    - Check your "Skill Level Progression" and "Experience Points (XP)."
    - View the "Leaderboards" on the dashboard to see how you rank.

8. **Try Speech & Audio Features**:
    - During a live debate session, ensure your microphone is enabled.
    - Observe the "Live Speech Recognition" and "Real-time Transcription" in action.
    - Use the "Audio Playback" feature to listen to transcribed speeches.

Working Prototype Link

The working prototype of Samvaad can be accessed here:

To set up and run Samvaad on your own device for a demo, follow these step-by-step instructions:

For Frontend:

1. Open your terminal or command prompt.
2. Navigate to the `frontend` directory: `cd frontend`
3. Install the necessary dependencies: `npm i`

   Start the development server: `npm run dev`

For Backend:

1. Open a new terminal or command prompt.
2. Clone the Samvaad repository from GitHub:

   ```
   git clone https://github.com/priyanshuraj27/Samvaad
   ```

3. Navigate to the `backend` directory: `cd backend`
4. Install the necessary dependencies: `npm i`
5. Start the backend server: `npm run dev` or `npm start`.