

Technical Documentation: Real-Time Polling Application

1. Overview

This project is a **real-time polling web application** that allows users to create polls, vote, and see live results updated instantly on all connected clients.

2. Technologies Used

Component	Technology/Tool	Purpose
Backend	Node.js + Express	API server and business logic
Real-Time Updates	Socket.IO	Real-time communication between server & clients
Rate Limiting	Redis	Fast in-memory store for API rate limiting
Frontend	React.js	User interface
API Calls	Axios	HTTP client for frontend to backend communication
Real-Time Client	client-socket.io	Client-side socket communication

3. Application Workflow & API Flow

Step-by-step User Handling and API Flow:

1. User Access and Authentication

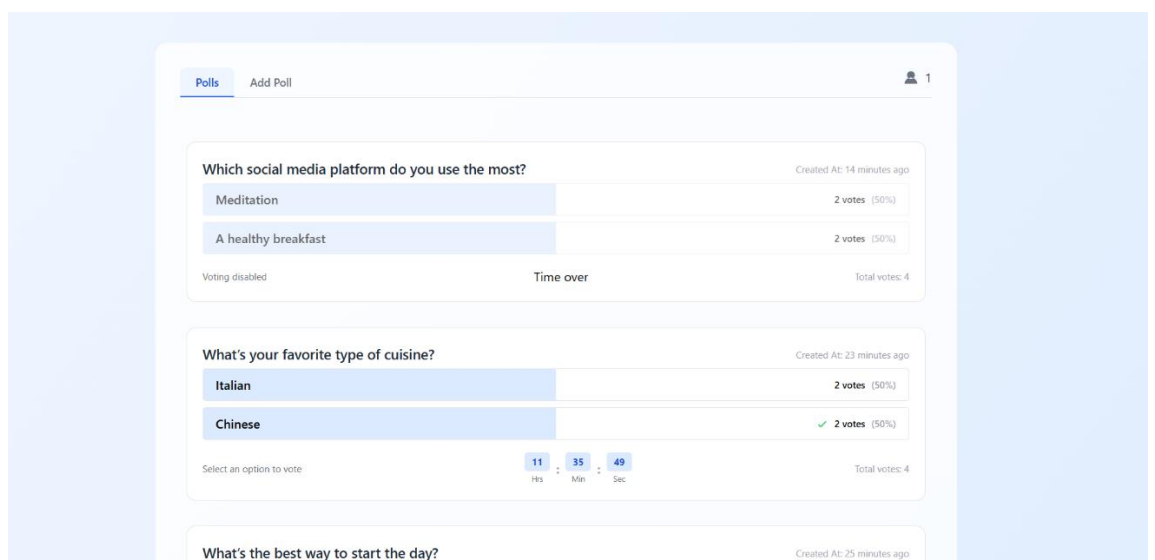
- When a user opens the website for the first time, a **login token** is generated and stored in browser cookies.
- This token authenticates the user for future requests, ensuring only valid users can interact with the app.



You are connect with this application successfully.

2. User Count Update

- Upon joining, the total number of active users is incremented and broadcasted to all connected users via Socket.IO.



3. Poll Creation

- Any user can create a poll (admin restriction not implemented in this version).
- Once created, the new poll is pushed to every connected user in real-time using Socket.IO.

Polis Add Poll 1

Create a New Poll

Easily create and share a poll with your friends or team.

Poll Question

Options

Option 1

Option 2

Add Option

Expire Date

dd/mm/yyyy --:-- --

Create Poll

4. Voting Process

- Users can cast votes on active polls.
- Each vote is instantly broadcast to all users, updating the poll's voting results with progress bars reflecting current votes.

Polis Add Poll 1

Which social media platform do you use the most? Created At: 14 minutes ago

Meditation 2 votes (50%)

A healthy breakfast 2 votes (50%)

Voting disabled Time over Total votes: 4

What's your favorite type of cuisine? Created At: 23 minutes ago

Italian 2 votes (50%)

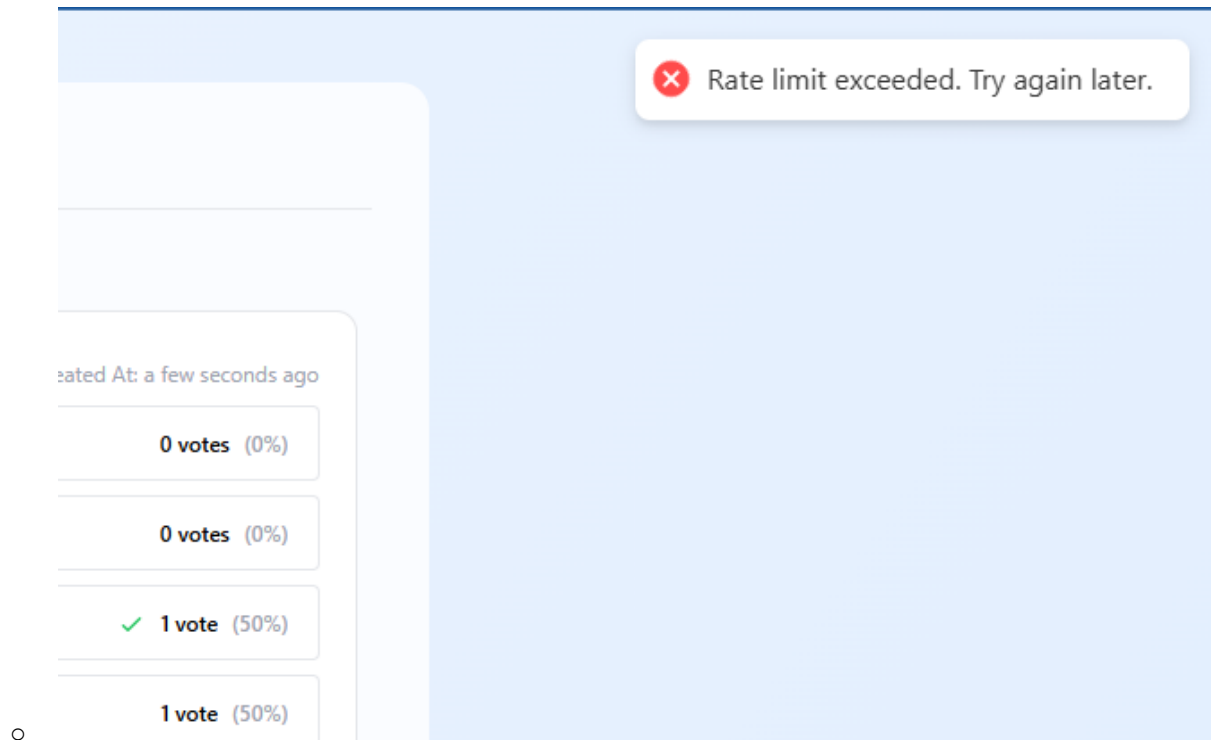
Chinese 2 votes (50%)

Select an option to vote 11 Hrs 35 Min 49 Sec Total votes: 4

What's the best way to start the day? Created At: 25 minutes ago

5. Prevent Multiple Voting

- Once a user votes on a poll, they cannot vote again on the same poll.
- If a user tries to vote multiple times, the server enforces **rate limiting** using Redis, blocking repeated votes and preventing abuse.



4. Summary of Key Features

- **Authentication:** User login tokens stored in cookies ensure secure access.
- **Real-Time Updates:** Socket.IO pushes poll creations and vote updates instantly to all connected clients.
- **Rate Limiting:** Redis prevents repeated rapid API calls and multiple votes from the same user.
- **Frontend:** React.js with Axios handles UI and API calls smoothly.
- **Backend:** Node.js + Express serve APIs and manage business logic.