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ONLINE INTERVIEW PLATFORM

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ABSTRACT

An Online Interview Platform that enables smooth and effective communication between interviewers and candidates in a remote environment. The platform is designed to simplify the interview process by offering key features such as high-quality audio and video calls, live session recording, call termination, and screen sharing for better interaction. It also includes a built-in code editor with sample coding questions and supports multiple programming languages, allowing candidates to write and test code during technical interviews. Additionally, a scheduling system is integrated to help interviewers manage and organize upcoming interviews easily. By combining real-time communication with coding and collaboration tools, the platform provides a complete solution for conducting remote interviews efficiently.

Keywords: React.js, Next.js, Convex, Clerk, Stream, shadcn/ui, Tailwind CSS.

1. INTRODUCTION

Introducing our Online Interview Platform is a web-based application designed to simplify and enhance the process of conducting remote interviews by integrating all essential tools into a single, user-friendly interface. Traditional interview setups often lack cohesion, with code editors, video conferencing tools, and feedback systems functioning separately. This disjointed workflow can hinder smooth communication and accurate candidate evaluation. To address these challenges, the Online Interview Platform offers a complete solution with a range of powerful features. It includes high-quality audio and video calling, screen sharing, and a session recording system that allows interviewers to record the entire interview for later review. A core component of the platform is the integrated code editor, which enables candidates to solve programming problems in real-time, with support for multiple languages and **s**ample coding questions.

2. LITERATURE REVIEW

Traditional remote interview setups often rely on separate tools for video conferencing, code editing, and feedback, which can disrupt the flow and effectiveness of technical interviews. Platforms like Zoom and Google Meet offer audio/video communication but lack built-in coding environments. On the other hand, tools like HackerRank, CoderPad, and Interviewing.io provide integrated code editors but limited communication features.

Some newer platforms have attempted to bridge this gap, but most still lack essential capabilities such as session recording, real-time collaboration, structured feedback, and rating systems. Research emphasizes that having a unified platform improves decision-making, reduces bias, and enhances the overall candidate experience.

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UI frameworks like Tailwind CSS and shadcn/ui help deliver clean and responsive interfaces, while Clerk ensures secure user authentication. Technologies such as Convex support real-time data handling, which is crucial for synchronized interactions during interviews.

This project builds on these insights by combining communication, coding, comment and rating tools into a single platform—addressing current limitations and offering a complete, integrated solution for remote technical interviews.

3. SYSTEM DESIGN

🎯 Objective:

To build a fully functional online interview platform that supports live video/audio, real-time code collaboration, session recording, interview scheduling, and review – using modern web technologies.

💻 Frontend (Next.js + TypeScript)

- Built using **Next.js**, **Tailwind CSS**, **shadcn/ui** for a fast and responsive UI.
- **Monaco Editor** provides a real-time, in-browser code editor for live coding.
- **React-Hot-Toast** gives instant feedback via toast notifications.

🔐 Authentication (Clerk)

- Handles secure login and **role-based access** (Admin, Interviewer, Candidate).
- Protects interview sessions and dashboard access.

🗂️ Backend (Convex)

- Stores user data, schedules, feedback, and interview recordings.
- Manages real-time data sync and interview state.

📹 Video Calls (Stream)

- WebRTC-based peer-to-peer calls with camera/mic toggle and screen sharing.
- Supports **interview recording** and joining via secure links.

🔁 Webhooks

- Automates post-call actions like saving recordings and sending notifications.
- Triggers events like interview reminders and status updates.

📅 Scheduling & Review

- Interviewers can **schedule sessions** and **review recordings**.

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- Add ratings and comments for later reference.

4. IMPLEMENTATION

The implementation involves:

🔧 Tech Stack

- **Frontend**: Next.js, TypeScript, Tailwind CSS, shadcn/ui
- **Backend**: Convex (DB + functions)
- **Auth**: Clerk (role-based access)
- **Video/Audio**: Stream (WebRTC)
- **Code Editor**: Monaco Editor (live coding)
- **UX Enhancers**: react-hot-toast (alerts), Webhooks (notifications/events)

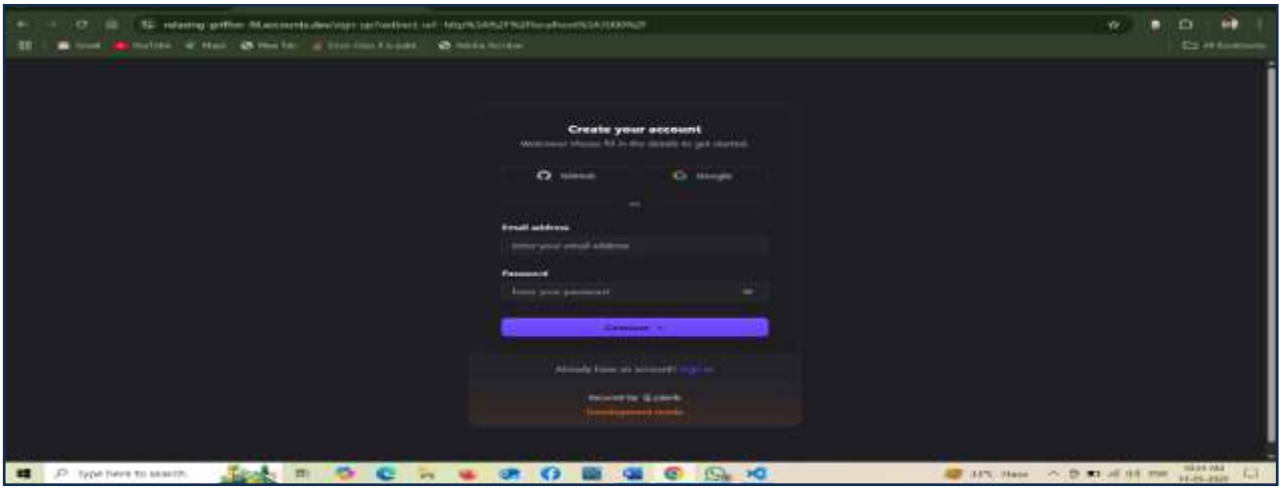
🚀 Core Features

- **Create/Join Interview**: Unique room links with camera/mic toggle
- **Schedule Interview**: Save and notify participants via Webhooks
- **Recording Section**: Store and review interview recordings
- **Code Editor**: Monaco for real-time coding during interview
- **Rating & Feedback**: Post-interview reviews by interviewers

🛠️ Future Improvements

- Add role-based feature control
- Build a full admin dashboard
- In-app chat and mobile optimization

1.SingUp Page:



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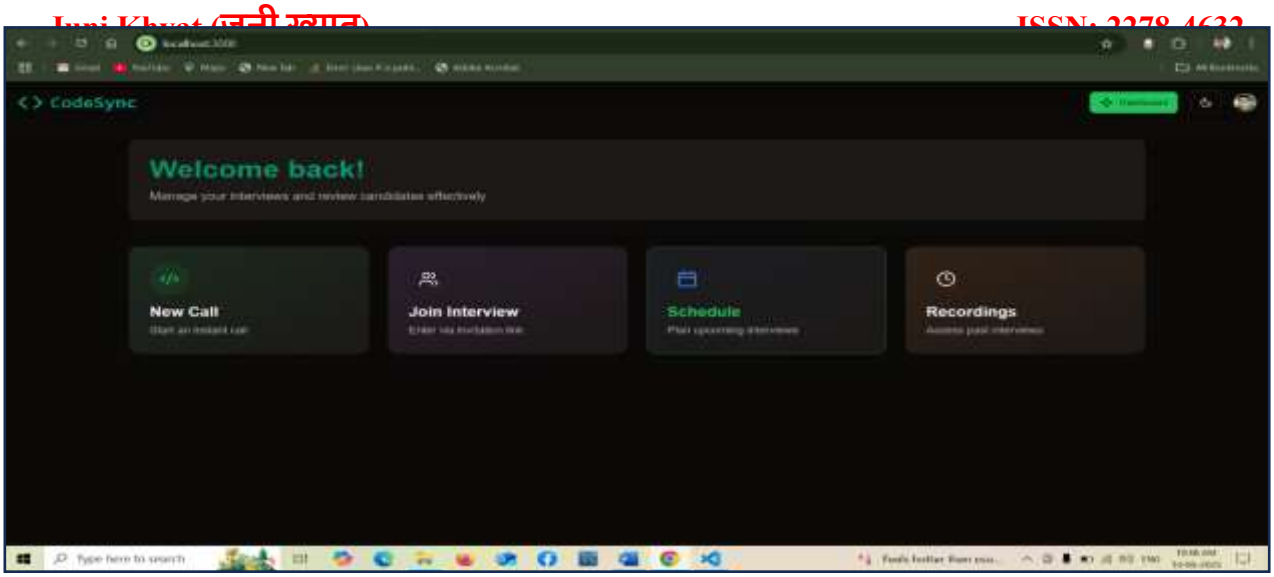
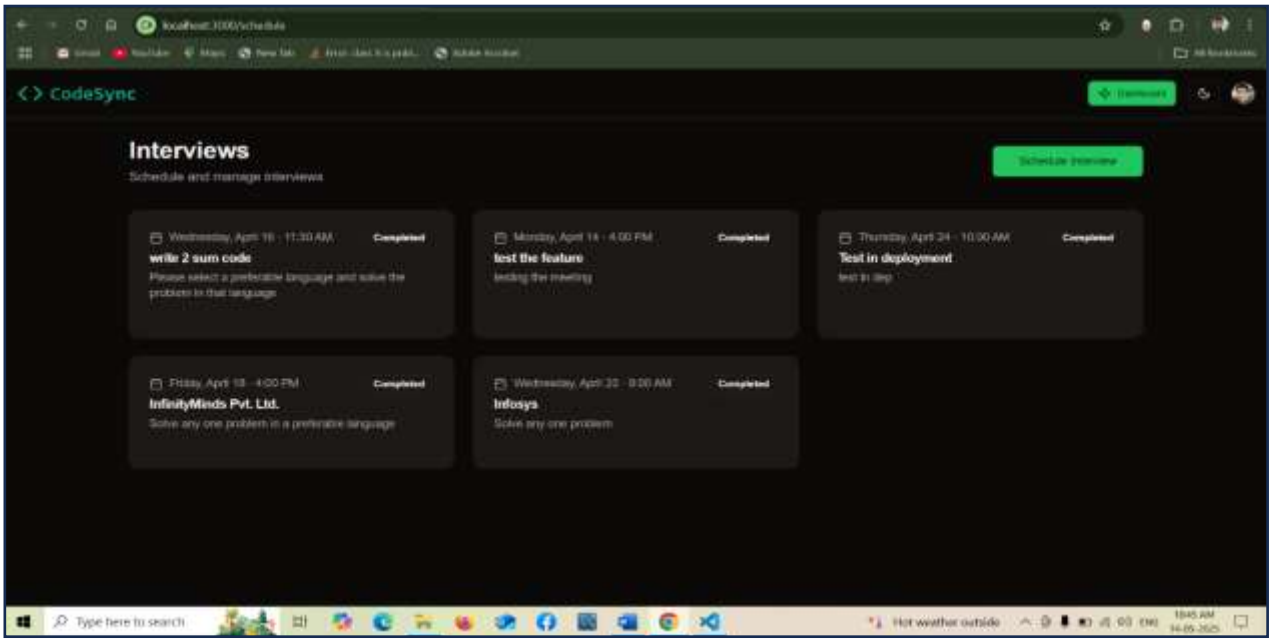
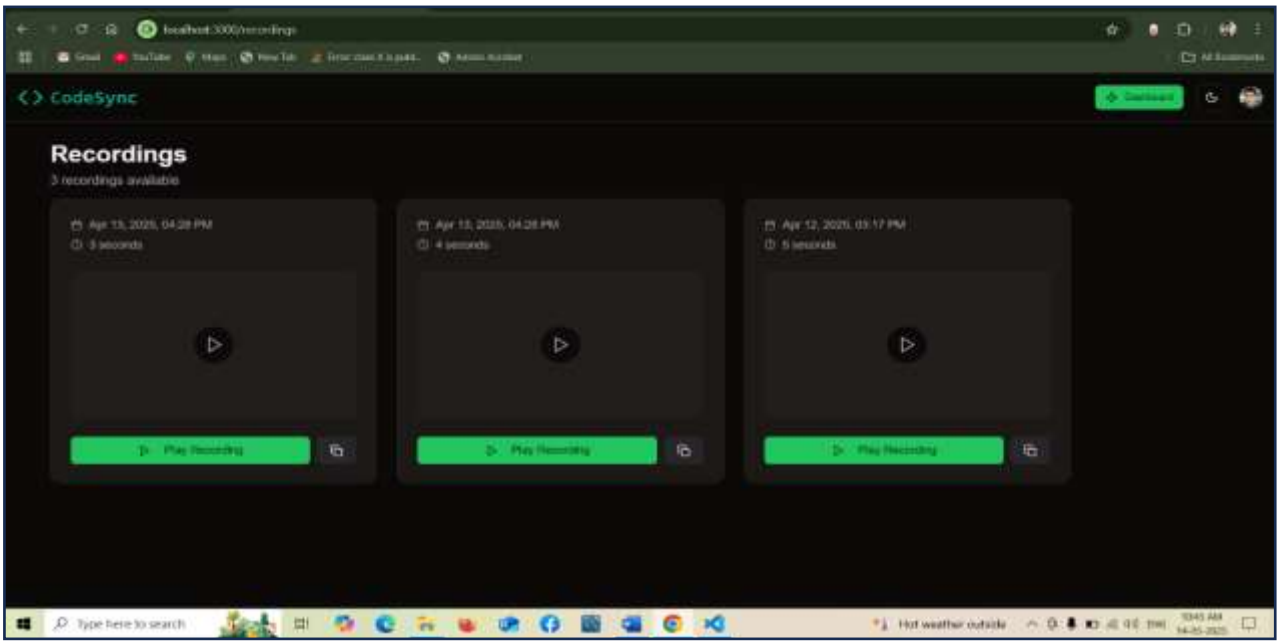
2.Home Or Welcome Page:



3.Interview Schedule Page:



4.Recordings Page:



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5. RESULTS

The Online Interview Platform successfully achieved its core objectives by integrating real-time video and audio communication using Stream (WebRTC), enabling seamless virtual interviews. The built-in Monaco code editor allowed candidates to solve programming problems during live sessions, while Convex and Webhooks supported efficient scheduling and real-time backend updates. Clerk ensured secure authentication with role-based access for interviewers, candidates, and admins. The platform also featured session recording for post-interview review, including options for feedback and ratings. Designed with Next.js, Tailwind CSS, and shadcn/ui, the interface remained responsive and user-friendly across devices, delivering a smooth and professional remote interview experience.

6. CONCLUSION

In conclusion, the Online Interview Platform provides a comprehensive solution for conducting remote technical interviews by combining real-time communication, secure authentication, and collaborative coding in a single, streamlined interface. Leveraging modern technologies like Stream for media transmission, Convex for backend logic, Clerk for role-based access, and Monaco Editor for live coding, the platform addresses the common challenges of virtual interviews. Features such as interview scheduling, session recording, feedback, and a responsive UI built with Next.js, Tailwind CSS, and shadcn/ui make it both functional and user-friendly. This project lays a strong foundation for future enhancements like admin dashboards and advanced analytics, making it scalable for educational and corporate use.

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