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PREPWISE

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ABSTRACT :

PREPWISE is an innovative, web-based system aimed at transforming the process of job interview preparation using AI-powered voice agents. With the help of innovative technologies like Next.js, Firebase, Tailwind CSS, and Vapi AI, the system provides realistic mock interview simulations, instant feedback, and user-driven dashboards. By enabling realistic interview settings, customized questionnaires, and thorough performance analysis, PREPWISE makes interview practice more effective and accessible. PREPWISE gives the candidate the power to experience growth in confidence and proficiency, preparing them for effective job interviews in the real world.

Keywords: PREPWISE, AI Interview Prep, Vapi Voice Agents, Next.js, Firebase Authentication, Tailwind CSS, Mock Interview Simulation, Job Readiness, Google Gemini, Real-Time Feedback

INTRODUCTION

In today's dynamic remote hiring and professional growth landscape, conventional interview practice techniques are lacking in the aspects of personalization, interactivity, and instant feedback. PREPWISE filled this void through the power of AI vocal agents, automatic learning and advanced web technology to provide revolutionary interview experience. With this platform, users can perform practical simulation interviews, receive immediate comments provided by AI and use their sessions in the clean user interface and react. Consumer features related to the creation of dynamic feedback and phonetics in real time, preparing candidates for the requirements of today's interviews.

The landscape for preparing for a job has dramatically changed with the help of technological advancements along with the growing implementation of AI in hiring processes. Virtual interviews have become standard, most candidates have no way to train to use authentication tools to provide tangible information. PREPWISE fills the gap by utilizing Vapi AI voice agents along with Google Gemini's intelligence to represent real interview settings. This equips users with a customized, adaptive, and competency-centric practice experience, enhancing the level of interview readiness in a most effective way.

With the incorporation of technologies like Next.js, Firebase, Tailwind CSS, and Shadcn/ui, PREPWISE provides a scalable and feature-rich solution for practice interviews. Interactive dashboards, transcribed feedback, and smooth authentication process provide an exceptional user experience. This study examines basic architecture, system design and technological innovations that are prepared to improve trust, communication and success rates in today's competitive market.

SYSTEM ARCHITECTURE

Interview Preparation Mode

AI-Driven Interviews: Practice interactive mock interviews with Vapi AI Voice Agents and Google Gemini models.

- Candidate Response Feedback: Receive real-time feedback on your responses, including assessments of clarity, confidence, and relevance.
- Question Generation: Get personalized interview questions tailored to your profile, target job role, and experience level.

Data Management

- Interview data, feedback, and transcripts are securely stored using Firebase Realtime Database and
- Firestore.

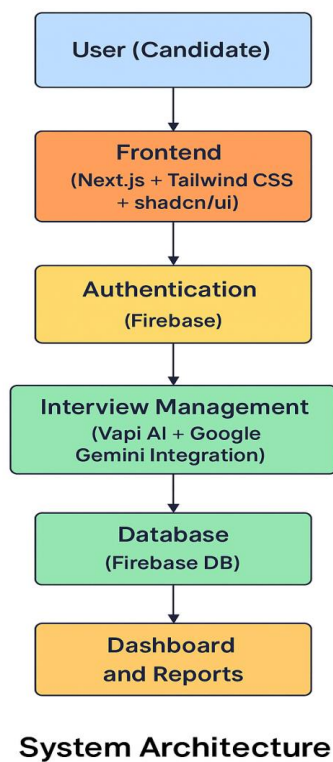


Fig.1 System Architecture Design

METHODOLOGY

Data Collection

- User audio entries from the interview are collected and processed to generate feedback.
- User profiles (e.g., experience level, selected job role) are saved to tailor interview questions accordingly.

Preprocessing

- Audio responses are converted to text using AI-powered speech-to-text models.
- The transcribed data is cleaned and normalized for sentiment and relevance analysis.

Feature Extraction

- Key metrics such as clarity, confidence, skill mentions, and sentiment are extracted from user responses.
- Depending on these features, monitoring issues are dynamically applied throughout the session.

Model Integration

- Google Gemini is used to generate dynamic questions and conduct personalized interview paths.
- Vapi AI manages language interactions in real time and reacts.

System Integration

- Backend operations are handled with fire-based functions and the rest.
- Real-time sockets support live feedback and updates in fake interview simulations.

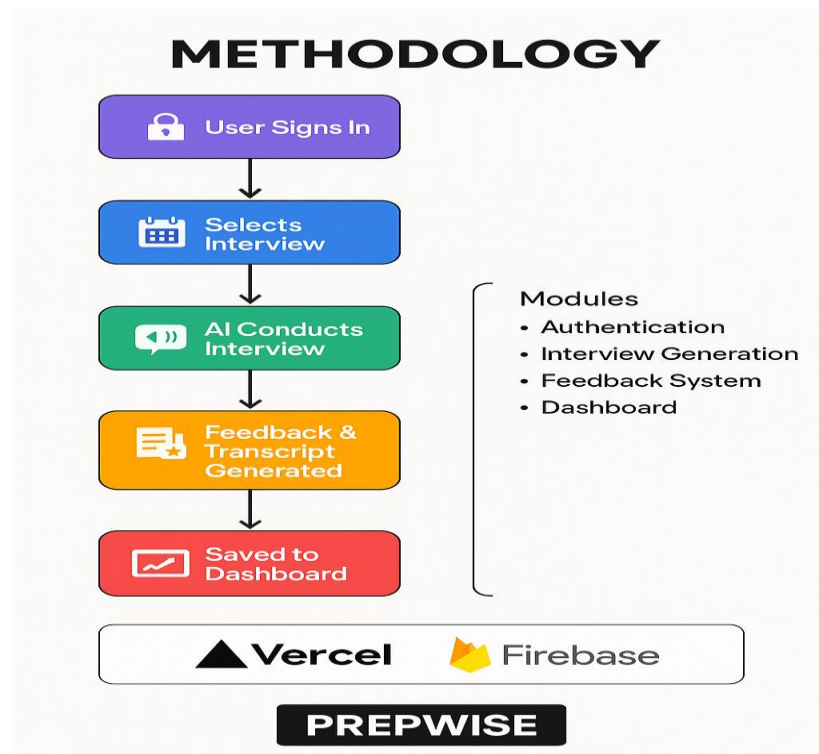


Fig.2 Methodology diagram

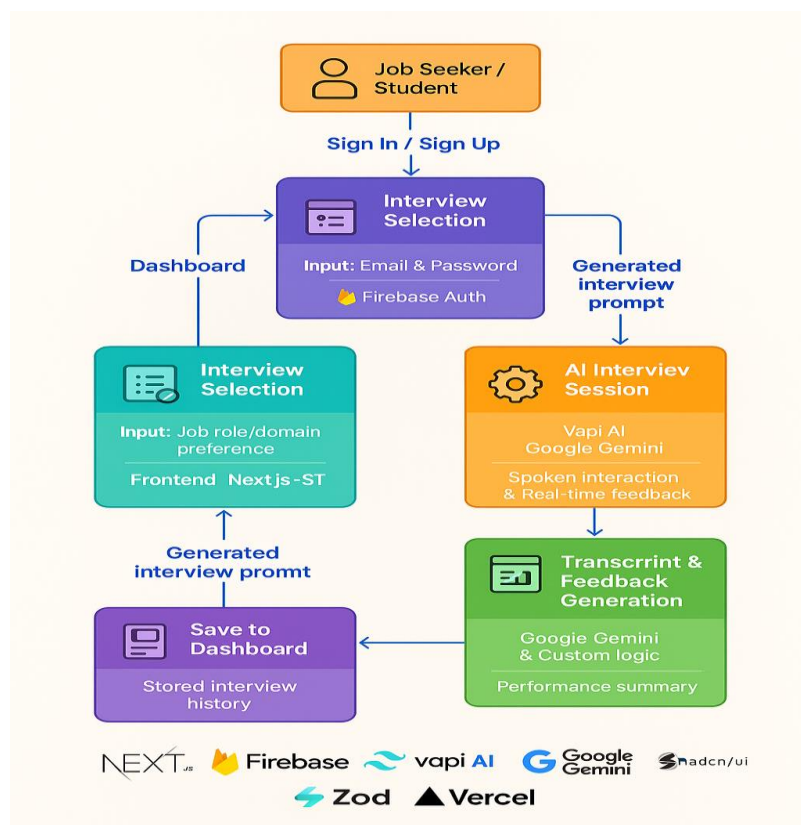


Fig.3 Workflow diagram

TABLE - I

Applied Models and Performanc Metrics

Model / Component	Technology Used	Purpose	Description	Performanc Metrics
Vapi AI	Vapi Voice Agent	AI Interview Simulationa	Conducts voice-based mock interviews	Speech accuracy 95%, Response 9%
Google Gemini	LLM (Google Gemini)	NLP Understanction & Feedback	Generates feedback and analyses response	Feedback precision 92%, Adaptability 88
Transcript Logic	Custom (JS+Gemini)	Generate Interview Summary	Summary clarity 90%, Gener-gen:s%)	Summary rate: Generation speed
Firebase Firestore	Firebase DB	User Authentification	Success rate Auth latency	Query time Read/Wite latercy

RESULTS AND DISCUSSION

The deployment and development of PREPWISE led to the creation of a highly interactive and effective platform for AI-powered interview practice. User testing confirmed that the integration of Vapi AI voice agents successfully simulated a realistic and engaging interview environment. Participants noted that speaking with an AI voice agent—rather than simply responding to text prompts—helped improve their communication skills, spontaneity, and confidence during mock sessions. Feedback and transcriptional generation capabilities were particularly appreciated for providing immediate implementation of the insights into performance.

The Authentication and Dashboard modules, built using Firebase and Next.js, ensured a secure and seamless user experience. Users could sign up, schedule interviews, and track their session history without any difficulty. The platform's intuitive interface, designed with Tailwind CSS and Shadcn/ui, further enhanced usability, ensuring smooth access across devices with consistent responsiveness.

During discussions, it became clear that AI-driven feedback based on conversation analysis provided more personalized insights than static question banks. The inclusion of real-time transcripts allowed users to reflect on their performance and adjust their strategies for future sessions. However, some challenges have been determined - such as irregular interpretations of pronunciation agents in noisy environments - by avoiding the need to improve continuously in processing songs and natural language treatment.

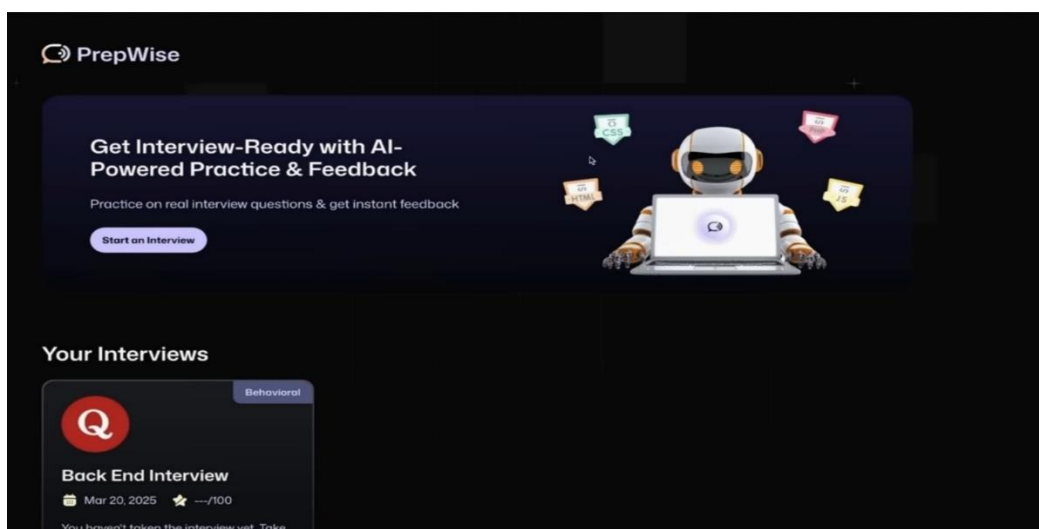
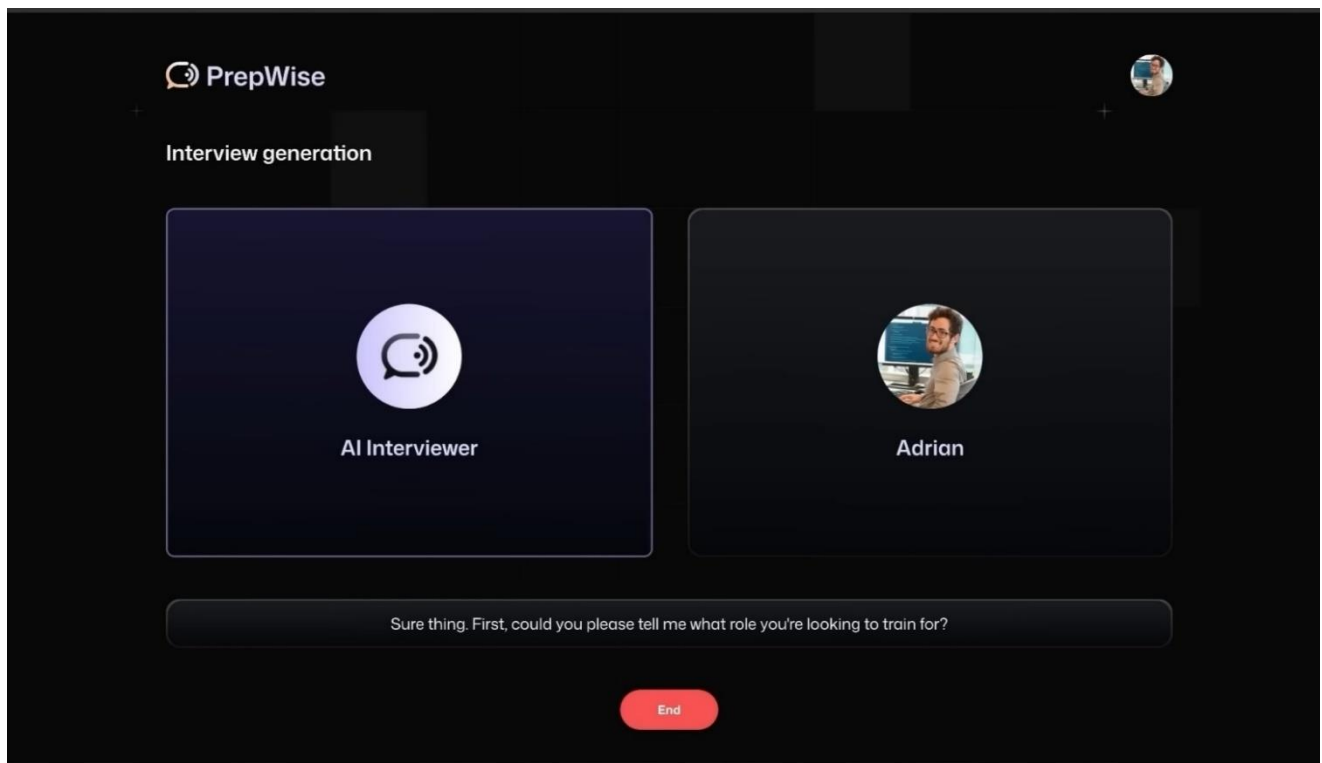
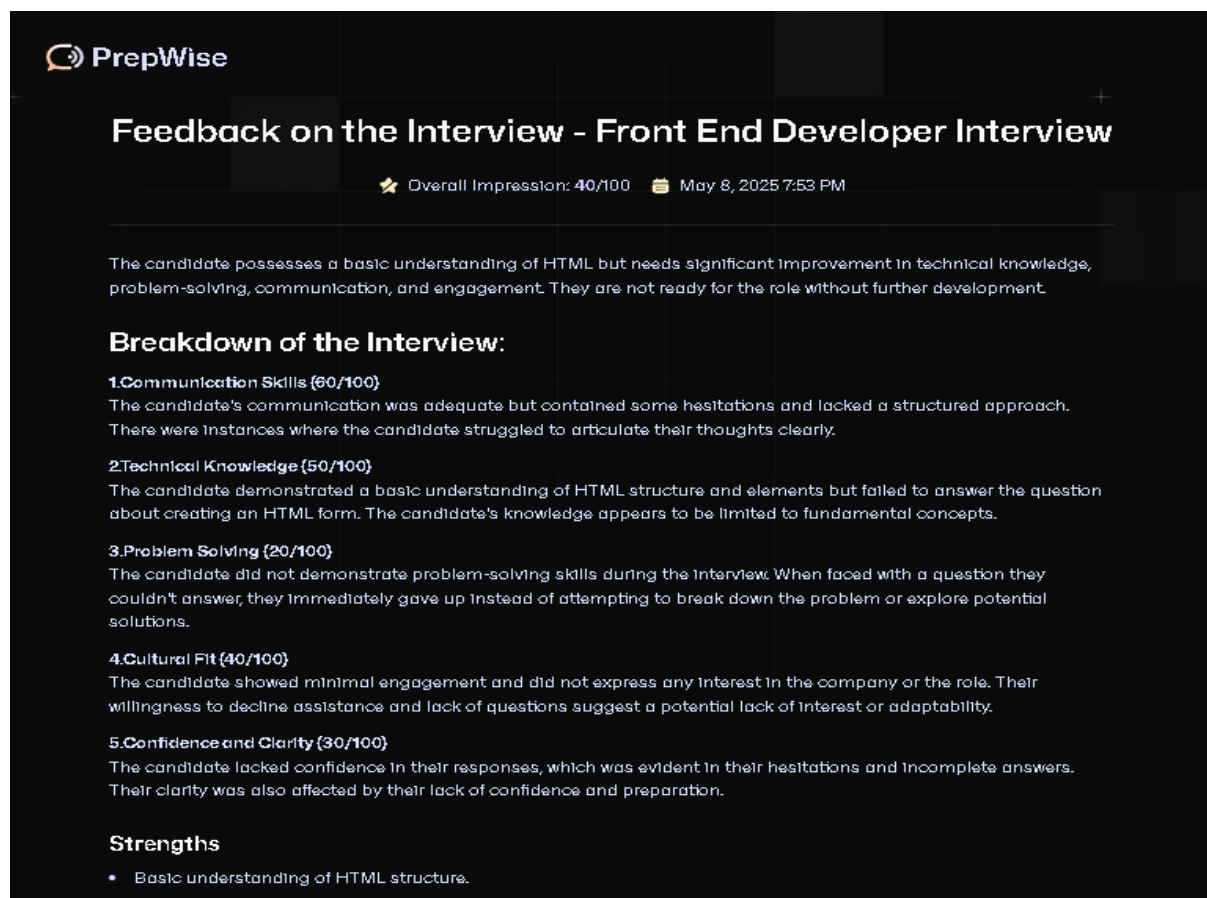


Fig.5.1 Screenshot of PREPWISE homepage

Fig.5.2 Screenshot of *PREPWISE* Interview PageFig. 5.3 Screenshot of *PREPWISE* feedback page

V. CONCLUSION

PREPWISE represents a significant leap forward in the field of job interview preparation by offering AI-powered simulations paired with real-time, personalized feedback. Through the integration of advanced technologies such as Vapi AI, Google Gemini, Firebase, and Next.js, the platform delivers a scalable, secure, and engaging environment that supports users in building and sharpening essential interview skills. With a transparent user interface and an automatic transcript, *PREPWISE* presents a complete solution in accordance with the evolutionary requirements of employers and job seekers today.

Looking ahead, *PREPWISE* aims to introduce features like multilingual accessibility, emotional intelligence evaluation, and dedicated mobile application support. These future improvements are designed to expand the scope and effectiveness of the platform, promote more comprehensive and adaptable preparation experience, meeting the dynamic expectations of the global labor market.

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