PrepWise

AI-Powered Mock Interview Platform

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Introduction

Current Challenges in Interview Preparation:

- **Gap Between Knowledge and Performance:** Students know answers theoretically but struggle with real-time responses
- **Limited Access:** Mock interview services costly (₹3000-5000) and location-bound
- **Inconsistent Feedback:** Peer practice gives subjective, non-professional feedback
- **No Analytics:** Traditional methods don't provide measurable insights

Our Solution: PrepWise

An AI-powered platform simulating realistic interview conditions through voice-based interactions, personalized question generation, and comprehensive performance feedback.

Problem Statement

Objective:

Develop an intelligent AI system that conducts realistic mock interviews using advanced technologies for question generation, voice interaction, and performance analysis.

Specific Goals:

Primary Objectives:

- Real-time voice interaction
- Personalized questions
- Performance analysis
- Secure user management

Secondary Objectives:

- 24/7 accessibility
- Performance tracking
- Intuitive interface
- Scalable architecture

Sustainable Development Goal

Goal: Quality Education (SDG 4)

 Quality Education - Ensuring inclusive and equitable quality education

Rationale:

- **Accessibility:** Students in tier-2/3 cities lack professional coaching
- **Affordability:** Traditional services expensive and unaffordable
- **Skill Development:** Bridge gap between knowledge and practical skills
- **Equal Opportunity:** Same quality preparation for all students

Data Collection & Preprocessing

User Data Collection:

- **Profile Information:** Name, email, experience level
- **Job Preferences:** Target role, industry, skills
- **Resume Upload:** Optional PDF/DOC for personalization
- **Interview History:** Past sessions and performance

Data Preprocessing:

Input Validation:

- Email format verification
- File type restrictions
- Input sanitization

Data Storage:

- Firebase Firestore
- Encrypted storage
- Real-time sync

Feature Selection & Engineering

Key Features for Question Generation:

- **Job Role:** Determines domain-specific questions
- **Experience Level:** Adjusts question difficulty
- **Technical Skills:** Focuses on relevant technologies
- **Interview Type:** Technical, behavioral, or mixed
- **Company Context:** Optional company-specific preparation

Engineered Features:

- **Question Complexity Score:** Based on role and experience
- **Personalization Weight:** Resume-based customization
- **Follow-up Probability:** Context-based question chaining

Model Development

Google Gemini AI Integration:

Purpose: Generate questions and analyze responses

- Advanced NLP for context understanding
- Domain-specific question generation
- Intelligent follow-up questions
- Performance analysis with insights

VAPI Voice Processing:

Purpose: Real-time voice interaction

- Speech-to-text with high accuracy
- Natural text-to-speech synthesis
- Low latency (<500ms)
- Multi-accent support

Model Evaluation

Testing Metrics:

100%	15	<500ms	99%
Pass Rate	Test Cases	Voice Latency	Uptime

Performance Evaluation:

- **Accuracy:** Question relevance and feedback quality
- **Response Time:** API calls <3s, Voice <500ms
- **User Satisfaction:** Interface usability and experience
- **System Reliability:** 99% uptime with error handling

Tools & Resources

Technology Stack:

Frontend	Backend	Database	AI Services
React.js 18.2	Node.js	Firebase	Gemini AI
Next.js 13.4	Next.js APIs	Firestore	VAPI
Tailwind CSS	Express.js	Cloud Storage	

Development Tools:

- **IDE:** VS Code, WebStorm
- **Version Control:** Git, GitHub
- **Deployment:** Vercel with CI/CD

Why It Will Work

Technical Strength:

- Advanced AI (Gemini)
- Real-time processing (VAPI)
- Scalable infrastructure
- Modern tech stack

User-Centric:

- Intuitive interface
- Personalization
- Actionable insights
- Safe environment

Continuous Improvement:

System learns and adapts with each session, improving question quality and feedback accuracy based on user interactions.

Performance Metrics

System Performance:

<3s	<500ms	99%	100+
API Response	Voice Latency	Uptime	Users

Feedback Metrics:

- **Overall Performance:** 0-100 scale
- **Communication Skills:** Clarity, articulation
- **Technical Knowledge:** Domain accuracy
- **Confidence Level:** Voice analysis
- **Problem-Solving:** Logical thinking

Future Scope & Enhancements

Planned Features:

Technical:

- Multi-language support
- Video interview integration
- Mobile applications
- Coding challenges

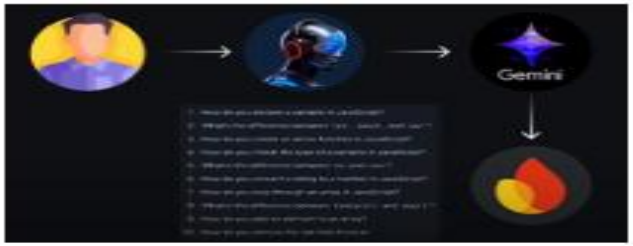
Platform:

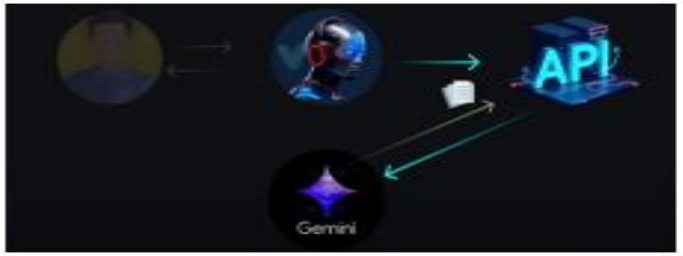
- Enterprise solutions
- Group interviews
- Advanced analytics
- Gamification

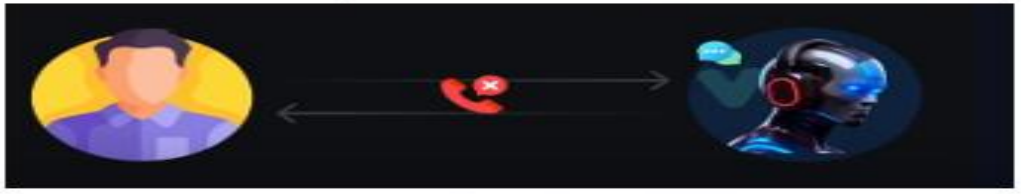
Long-term Vision:

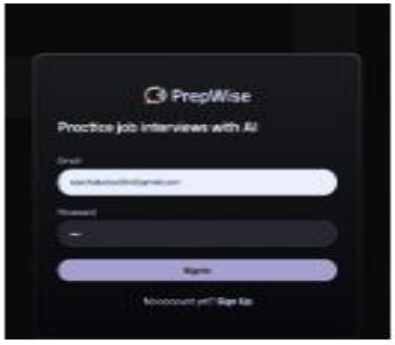
- **AI Evolution:** More sophisticated models with better context
- **Industry Partnerships:** Collaboration with companies for hiring
- **Global Reach:** Support for multiple languages and regions
- **Career Guidance:** Expand beyond interviews to career planning

Results & System Screenshots









Conclusion

Summary:

PrepWise successfully bridges the gap between theoretical knowledge and practical interview performance through AI-powered voice interactions and comprehensive feedback.

Key Achievements:

- ✅ Developed fully functional AI-powered interview platform
- ✅ Integrated advanced technologies (Gemini AI, VAPI, Firebase)
- ✅ Achieved 100% test pass rate with excellent performance
- ✅ Created accessible, affordable solution for all students
- ✅ Deployed live platform with 99% uptime

Impact:

PrepWise contributes to SDG 4 (Quality Education) by democratizing access to high-quality interview preparation, making it available to students regardless of their location or economic background.

Thank You!