



VHire - The Smart Hiring Platform

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1 Introduction

Recruitment in today's fast-paced world is evolving, and digital platforms play a vital role in streamlining the hiring process. **VHire** is an intelligent web-based hiring platform designed to simplify recruitment for companies while enhancing opportunities for candidates. The platform not only enables job applications and posting but also integrates advanced features such as real-time interviews, code editor assessments, payment handling, and admin-level interview scheduling. VHire bridges the gap between companies and potential candidates through automation, real-time systems, and scalable backend architecture.

2 Objective of the Project

The primary objectives of **VHire** are:

- To provide a unified platform for companies and job seekers.
- To enable seamless interview scheduling with interviewer compensation.
- To integrate coding assessments and video interviews within the platform.
- To automate the hiring pipeline from candidate selection to final interview.
- To enhance transparency and efficiency using secure authentication and payment systems.

This project also aims to replicate real-world hiring scenarios to build an industry-ready, scalable solution.

3 System Overview

VHire consists of multiple modules that collectively handle the full lifecycle of hiring. Users are classified into four primary roles:

- **Candidates:** Register, apply for jobs, attend interviews, and upload resumes. They can view application status, receive notifications, and participate in both coding and video interviews.
- **Companies:** Register, post job listings, browse candidates, and pay to schedule interviews. They have dashboards to manage interviews, shortlist applicants, and view interview outcomes.
- **Interviewers:** Assigned by the admin to conduct interviews. Their role includes:
 - Accessing candidate profiles and resumes.
 - Conducting coding rounds via the integrated code editor.
 - Joining interviews using auto-generated Google Meet links.

- Receiving intelligent assistance from the built-in AI chatbot during interviews, which can:
 - * Suggest technical or behavioral questions in real time.
 - * Evaluate candidate responses based on predefined criteria.
 - * Provide instant code analysis and hints during assessments.
- Submitting feedback and ratings after each session.
- Receiving automated payments for completed interviews.
- **Admins:** Have full control over platform operations. This includes user verification, scheduling interviews, assigning interviewers, managing payments, and handling dispute resolutions.

The system includes several integrated services and functionalities:

- Live code editor for technical assessments.
- Google Meet integration for real-time video interviews.
- AI Chatbot to assist interviewers during live sessions.
- Secure payment gateways for company payments and interviewer compensation.
- Real-time notifications and reminders for all users.

4 Module Description

4.1 Authentication Module

Manages user registration and login using role-based access control. JWT tokens ensure secure session handling and route protection.

4.2 Candidate Module

- Apply for jobs and view application status.
- Attend interviews via Google Meet.
- Participate in coding rounds.
- Update profile and upload resume.

4.3 Company Module

- Register and log in to a dedicated dashboard.
- View and shortlist candidates.
- Schedule interviews (paid).
- View interview history and results.

4.4 Admin Module

- Approve/reject new companies.
- Assign interviewers and schedule interviews.
- Monitor transactions and system activity.

4.5 Code Editor Module

- Real-time coding environment via 3rd-party API.
- Supports multiple programming languages.
- Used during technical interviews.

4.6 Google Meet Integration

- Automatically generates video meeting links.
- Provides seamless video-based interviews.
- Integrates with scheduling and reminders.

4.7 Payment Module

- Companies pay for each scheduled interview.
- Interviewers are paid post-interview.
- Transactions tracked through admin dashboard.

4.8 Notification Module

- Real-time alerts for interview status, payments, and applications.
- Supports both in-app and email notifications.

4.9 AI Chatbot Assistant Module

To enhance the interview experience and ensure quality evaluations, VHire integrates an AI-powered chatbot designed specifically to support interviewers in real-time.

- **Smart Question Suggestions:** Based on the candidate's resume and job role, the AI suggests relevant technical and behavioral interview questions.
- **Response Analysis:** Provides instant feedback on candidate answers and code submissions using natural language understanding and code parsing.

- **Live Coding Feedback:** Monitors candidate activity in the code editor and gives interviewers hints, auto-evaluations, and summaries.
- **Productivity Boost:** Reduces the cognitive load on interviewers and ensures consistency in evaluation, especially during back-to-back interviews.

The AI chatbot ensures that even junior interviewers can conduct fair and professional assessments, contributing to overall platform reliability.

5 Technologies Used

Category	Technologies
Frontend	React.js, HTML5, CSS3, Bootstrap
Backend	Node.js, Express.js
Database	Firebase
Authentication	JWT, Bcrypt
Code Editor	3rd-party Code Execution API
Video Interviews	Google Meet API
Payments	Razorpay / Stripe
Notifications	Socket.io or equivalent
Cloud & Storage	Cloudinary, Firebase, Vercel/Netlify

6 System Architecture

The architecture of VHire is modular and follows the MVC (Model-View-Controller) pattern.

- **Frontend (React.js):** Renders dynamic UI and interacts with backend APIs.
- **Backend (Express.js):** Handles business logic, routing, and API services.
- **Database (MongoDB):** Stores user info, jobs, resumes, and transactions.
- **APIs:** Handles code execution, video conferencing, and payments.

7 Future Enhancements

- AI-based resume screening and scoring.
- Interview calendar sync for all users.
- Analytics dashboard for company and admin insights.
- Chat module for real-time communication.
- Mobile application for enhanced accessibility.

8 Conclusion

VHire is a comprehensive hiring solution that brings automation, interactivity, and efficiency to modern recruitment. By integrating advanced tools like coding tests, video calls, and digital payments, VHire replicates a real-world hiring experience in a single platform. With future scalability, intuitive design, and robust architecture, VHire is an ideal base for building enterprise-ready recruitment systems.

— *End of Report* —