

JOBNEST – THE SMART TALENT BRIDGE

(XEBIA INTERNSHIP PROJECT REPORT)

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Abstract

JobNest is a full-stack job portal application developed using the MERN stack (MongoDB, Express.js, React.js, Node.js), designed to bridge the gap between job seekers and recruiters. The platform enables users to register based on roles, create and apply for job listings, and engage in real-time communication. It incorporates modern features such as resume parsing, smart job recommendations, and role-based dashboards to streamline the hiring process. The backend is secured using JWT-based authentication and optionally supports OAuth for social logins. Real-time interactions are implemented using Socket.IO, allowing seamless communication between candidates and recruiters. This report details the overall architecture, frontend and backend design, system modules, integration flow, and challenges faced during development including routing conflicts and API synchronization. JobNest offers a scalable, modular, and responsive user experience, simulating real-world recruitment scenarios. As a student project, it provided hands-on exposure to full-stack development principles, secure authentication, RESTful APIs, and team-based version control, making it both a technically rewarding and academically valuable initiative.

Introduction

Job searching and recruitment have rapidly transitioned to digital platforms in recent years. However, many existing job portals fall short in delivering personalized user experiences, intelligent job recommendations, and effective real-time communication between candidates and recruiters. These limitations often result in missed opportunities, inefficient hiring processes, and poor user engagement. In this context, **JobNest** is developed as a modern, full-stack job portal that addresses these challenges through intelligent design and technology.

JobNest offers a role-based interface, allowing users to register either as job seekers or recruiters. Each role is provided with a dedicated dashboard to perform core functions such as creating job listings, applying to jobs, managing applications, and initiating direct communication. The system also integrates resume parsing, real-time notifications, and secure login via JWT and OAuth for a seamless experience.

The project is built using the **MERN stack** (MongoDB, Express.js, React.js, Node.js), enabling a modular, scalable, and responsive application. This introduction sets the foundation for discussing JobNest's architecture, implementation, features, and the real-world development challenges overcome during the project lifecycle.

Technologies Used

Frontend:

- **React.js**
Built reusable components, managed application state, and implemented frontend routing for a smooth user experience.
- **Tailwind CSS**
Applied utility-first styling directly in JSX to rapidly design a responsive and modern UI.

Backend:

- **Node.js**
Served as the runtime environment to execute server-side code using JavaScript.
- **Express.js**
Created RESTful APIs, handled routing, and connected frontend requests to backend logic and database operations.

Database:

- **MongoDB**
Stored and managed application data like user profiles, job listings, and parsed resume information.

Resume Parsing:

- **Node.js Libraries**
Extracted content from uploaded resumes (PDF/DOCX) to fetch information like skills, experience, and contact details.

Payment Gateway:

- **Razorpay**
Integrated for secure online payments to handle transactions such as premium subscriptions or services.

Deployment:

- **Netlify**
Deployed the React frontend with continuous integration from GitHub, enabling fast, live access to the application.

Features

- **User Registration and Login:**

JobNest implements a secure and user-friendly authentication system. Users can sign up and log in using traditional email-password credentials, protected with JWT (JSON Web Tokens) to ensure safe and stateless sessions. Additionally, Google OAuth is integrated to offer a quick one-click login experience, reducing friction and improving accessibility for new users.

- **Job Listings:**

Recruiters can create, edit, and manage job postings through a dedicated interface. Each job post includes important details such as job title, field, location, salary range, description, and requirements. These listings become instantly available on the seeker side, where they can be browsed using filters and search functionality. This feature supports real-time visibility and high engagement between recruiters and job seekers.

- **Resume Upload and Parsing:**

JobNest allows job seekers to upload multiple resumes in PDF format. Uploaded resumes are parsed to extract key details like name, skills, education, and experience. This structured data is used to populate profiles and assist in better job recommendations. Recruiters can view the parsed resume data of applicants directly, improving hiring efficiency and decision-making.

- **Notifications:**

A notification system is integrated across the platform for both user roles. Job seekers receive alerts for important updates such as application status, messages from recruiters, and interview calls. Recruiters get notified when new applications are submitted or when applicants update their profiles. The notification icon in the navbar provides quick access to recent activity, enhancing engagement and response time.

- **Data Insight:**

To empower job seekers, JobNest offers insights on their career journey. This includes tracking the progress of completed courses, suggested learning paths, and job application history. These insights help users measure their growth and identify areas of improvement, turning JobNest into more than just a job board — a full-fledged career development platform.

Problems Faced During the Project

Page Linking

One of the initial challenges was managing routing between multiple user roles. Handling protected routes for authenticated users and linking frontend pages dynamically based on roles (Job Seeker vs Recruiter) caused inconsistencies. This was addressed by implementing centralized route guards and role-based component rendering.

Integration Issues

Backend and frontend integration was a significant hurdle. Mismatches in API structure, asynchronous data loading delays, and CORS errors caused delays. These were resolved by defining a consistent API structure and using Axios interceptors to manage authentication headers across requests.

Real-time integration using Socket.IO also required precise event handling and connection stability across various components. Debugging event listeners and message delivery reliability consumed considerable time.

State Management Conflicts

While building a reactive frontend, managing shared state across different components became complex, especially with role-based conditional rendering and form data across nested components. Multiple components accessing or mutating the same state variables without proper isolation caused bugs and unpredictable behavior. To resolve this, we adopted a structured state flow using context APIs and React hooks, and scoped local states where necessary to avoid overlap.

Payment Issue

Initially, we attempted to integrate Stripe for handling secure payments for premium job postings. However, we encountered region-based limitations and API documentation issues that delayed progress. As an alternative, we chose Razorpay, which supports Indian payment gateways and offers a more localized integration. Despite this, we faced difficulties in securely transmitting transaction data, validating webhook callbacks, and integrating it smoothly into our existing backend structure. Properly configuring Razorpay's test and live modes also required multiple rounds of testing and debugging.

Conclusion

JobNest successfully bridges the gap between job seekers and recruiters by providing a seamless, intuitive, and highly interactive job portal experience. Designed to simulate real-world hiring workflows, the platform allows recruiters to effortlessly post job listings and manage applications, while job seekers can upload resumes, receive personalized insights, and apply to relevant opportunities.

The integration of modern web technologies — including React.js, Node.js, Express.js, and MongoDB — along with resume parsing and real-time notifications, creates a dynamic environment that adapts to user needs. Real-time communication features, role-based dashboards, and insightful data visualizations further enhance usability and engagement.

Throughout development, the team encountered several technical challenges such as routing conflicts, authentication flow discrepancies, and frontend-backend data synchronization issues. However, through effective collaboration, version control using Git, and frequent debugging sessions, these obstacles were resolved systematically.

The project served as a comprehensive exercise in full-stack development, involving not just technical implementation but also user experience design, API structuring, and deployment practices. By working in a collaborative, team-based setup, we gained invaluable experience in managing real-world software development processes — from planning and feature allocation to testing and deployment.

Overall, JobNest stands as a robust, scalable, and production-ready solution that reflects both our technical capabilities and our ability to work efficiently in a team-oriented development environment.

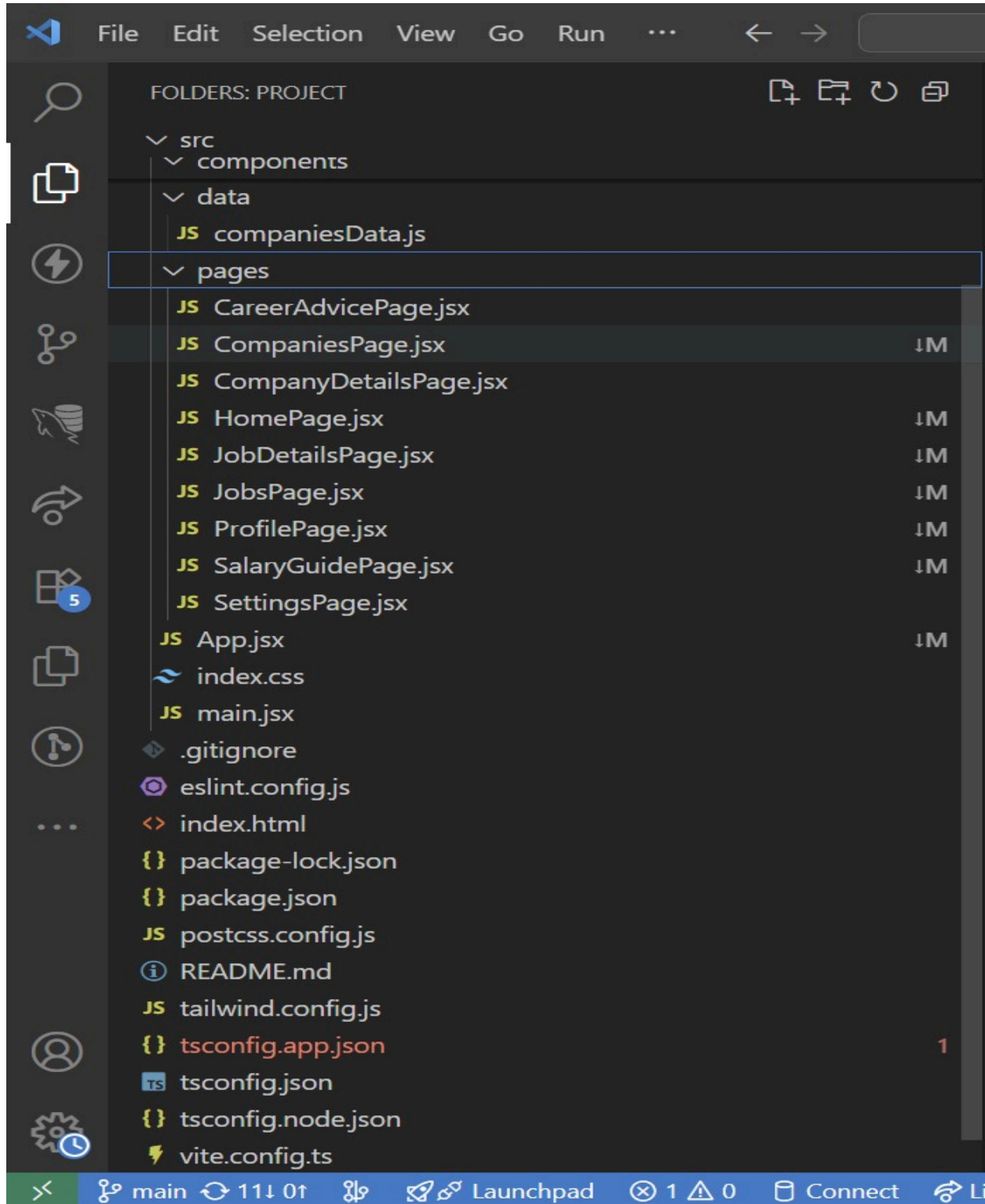
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- [2] Tailwind CSS Docs
- [3] MDN Web Docs - Web Authentication
- [4] Razorpay Developer Docs - <https://razorpay.com/docs/>
- [5] Stripe API Reference - <https://stripe.com/docs/api>
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- [7] React.js Official Documentation - <https://react.dev/>
- [8] Mongoose ODM Guide - <https://mongoosejs.com/docs/guide.html>

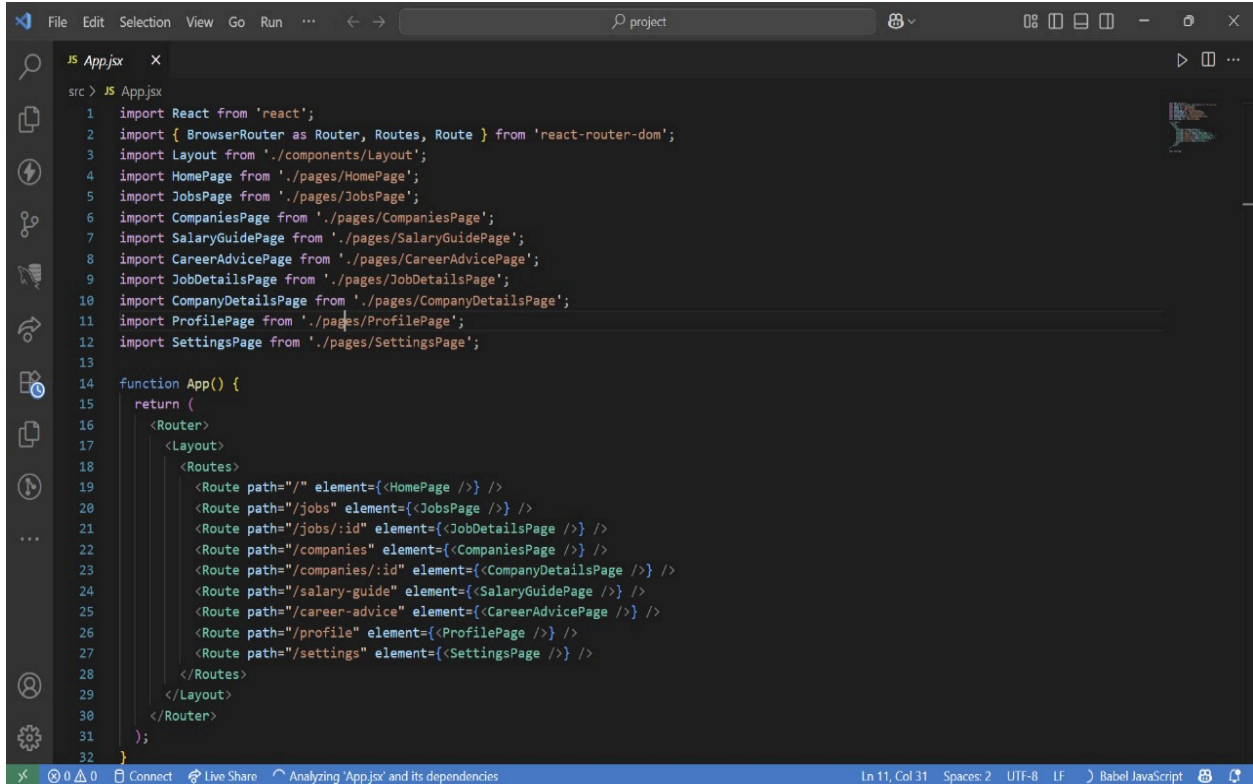
Appendix

Codebase

Directory:



App.jsx file:



```
1 import React from 'react';
2 import { BrowserRouter as Router, Routes, Route } from 'react-router-dom';
3 import Layout from './components/Layout';
4 import HomePage from './pages/HomePage';
5 import JobsPage from './pages/JobsPage';
6 import CompaniesPage from './pages/CompaniesPage';
7 import SalaryGuidePage from './pages/SalaryGuidePage';
8 import CareerAdvicePage from './pages/CareerAdvicePage';
9 import JobDetailsPage from './pages/JobDetailsPage';
10 import CompanyDetailsPage from './pages/CompanyDetailsPage';
11 import ProfilePage from './pages/ProfilePage';
12 import SettingsPage from './pages/SettingsPage';
13
14 function App() {
15   return (
16     <Router>
17       <Layout>
18         <Routes>
19           <Route path="/" element={<HomePage />} />
20           <Route path="/jobs" element={<JobsPage />} />
21           <Route path="/jobs/:id" element={<JobDetailsPage />} />
22           <Route path="/companies" element={<CompaniesPage />} />
23           <Route path="/companies/:id" element={<CompanyDetailsPage />} />
24           <Route path="/salary-guide" element={<SalaryGuidePage />} />
25           <Route path="/career-advice" element={<CareerAdvicePage />} />
26           <Route path="/profile" element={<ProfilePage />} />
27           <Route path="/settings" element={<SettingsPage />} />
28         </Routes>
29       </Layout>
30     </Router>
31   );
32 }
```

Web outputs

Sign up page:


The image shows a web application for JobNest. The background is a dark blue/purple gradient with the text "Find Your JobNest" and "Connect with top professionals. Join now to get your skills and experience matched to the best career match." There is a search bar with the placeholder "Job title, keywords, or company" and a "Search Jobs" button. Below the search bar, it says "Popular searches: Frontend Developer". At the bottom, there are four statistics: "2,847", "892", "94%", and "₹79L".

The "Create Account" modal is open in the center. It has a title "Create Account" and a subtitle "Join thousands of professionals". It contains the following fields and options:

- First Name:** Input field with "John".
- Last Name:** Input field with "Doe".
- I am a:** Two radio buttons: "Job Seeker" (selected) and "Employer".
- Email:** Input field with "john@example.com".
- Password:** Input field with masked characters "*****".
- Confirm Password:** Input field with masked characters "*****".
- Create Account:** A blue button at the bottom.




At the bottom of the modal, there is a link: "Already have an account? [Sign in](#)".


Profile

**JobNest**



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+ Post Job

 Vipin Kumar



Vipin Kumar

 vishalkardam4111@gmail.com  Employer

Software Developer

Edit Profile

Overview

Experience


Applications

Saved Jobs

About

Add a bio to tell employers about your background and career goals.

Resume



Upload your resume

Supported formats: PDF, DOC, DOCX (Max 5MB)

Choose File

Contact Information

Profile Completion

Profile Strength 75%

Add more details to improve your profile visibility

Quick Stats

Profile Views127


Applications3

Saved Jobs1

Account Type


Employer Account


Companies


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2


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Discover Amazing Companies


Explore company cultures, benefits, and career opportunities



Company name or industry



Location



Search


20
20 Companies

368
Open Positions

4.5
Avg Rating


6
New This Week

20 companies found




Filters


Highest Rated





TechCorp Solutions

Technology

 4.8 (1247 reviews)

 San Francisco, CA

 1000-5000 employees

 Founded 2010

Leading technology company specializing in cloud solutions and enterprise software development.

Culture & Values


Innovation

Work-Life Balance


Diversity

Growth

23 open positions





View Company





AI Robotics Corp

Artificial Intelligence

 4.8 (534 reviews)

 San Francisco, CA

 200-500 employees

 Founded 2020

Pioneering AI and robotics company building the future of autonomous systems and machine intelligence.

Culture & Values


Innovation

Research-Driven

Technical Excellence

Future-Focused


22 open positions



View Company

14

Campaigns

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Campaign Creation Hub

Launch innovative campaigns, raise funds for your projects, and connect with supporters who believe in your vision.

Create Campaign

₹19.9Cr

Total Raised

156

Active Campaigns

89%

Success Rate

12k+

Supporters

Featured Campaigns

+ Start Your Campaign


Featured

23 days left



Technology & Innovation


15 days left



Environment & Sustainability


Featured

45 days left



Social Impact

Salary Guide


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2

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Salary Guide & Market Insights


Get comprehensive salary data, market trends, and compensation insights to make informed career decisions.

Job Role

Location

Experience Level


 e.g. Software Engineer


 City, State


All Levels


Market Overview

Current salary trends and market insights



₹1.18Cr
Average Tech Salary
↑ 11% from last year


12.5%
Average Growth Rate
Year over year


2,847
Active Job Openings
↑ 156 this week



892
Hiring Companies
Active recruiters

16


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Career Advice & Resources

Expert guidance, practical tips, and proven strategies to accelerate your career growth and land your dream job.



Search articles, tips, and resources...

150+
Expert Articles

50k+
Career Success Stories

25+
Industry Experts

95%
Success Rate

Categories

All Topics24

Resume Writing8

Interview Prep6

Career Growth5


Networking3

Salary Negotiation2

All Articles6 articles found

Featured Articles


Featured



★ 4.9

Resume Writing🕒 8 min read 2 days ago

Featured



★ 4.8

Interview Prep🕒 12 min read 1 day ago

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Post a Job

Find the perfect candidate for your team

Preview

Publish Job

Basic Information

Job Title *

e.g. Senior Frontend Developer

Company Name *

Your company name

Location *

City, State or Remote

Job Type *

Full-time

Experience Level *

Mid Level

Skills/Technologies

React, Node.js, Python (comma separated)

Salary Information

Minimum Salary

₹ 6640000

Maximum Salary

₹ 9960000

Currency

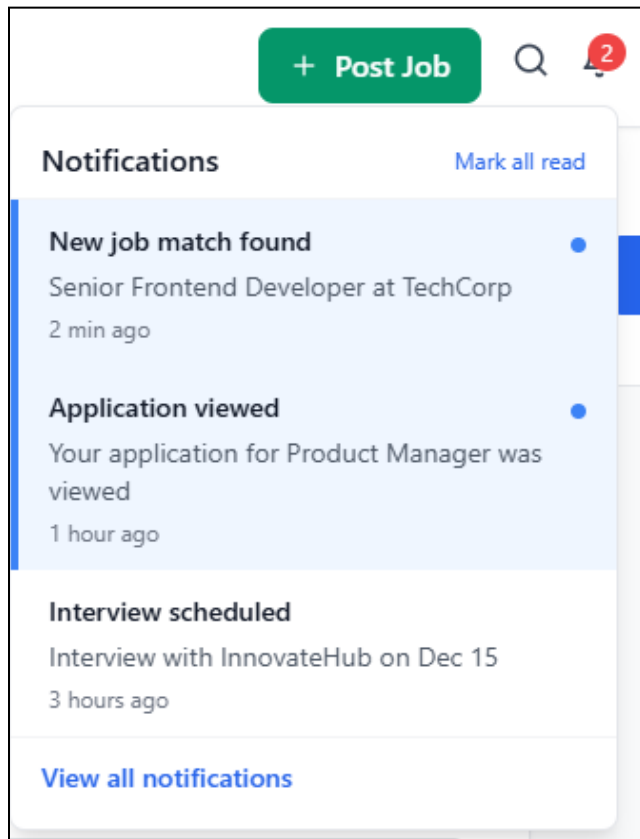
INR

Job Description

Description *

Describe the role, responsibilities, and what makes this opportunity exciting...

Notifications



New job match found

Senior Frontend Developer at TechCorp

2 min ago

Application viewed

Your application for Product Manager was viewed

1 hour ago

Interview scheduled

Interview with InnovateHub on Dec 15

3 hours ago

[View all notifications](#)


Payment Gateway (Razorpay)

B BHARAT BHUSHAN NA...

Price Summary

₹1,700

Using as +91 63041 12757

Secured by 

Payment Options

Recommended

UPI

Cards


EMI

Netbanking






Wallet

UPI QR

11:54



Scan the QR using any UPI App



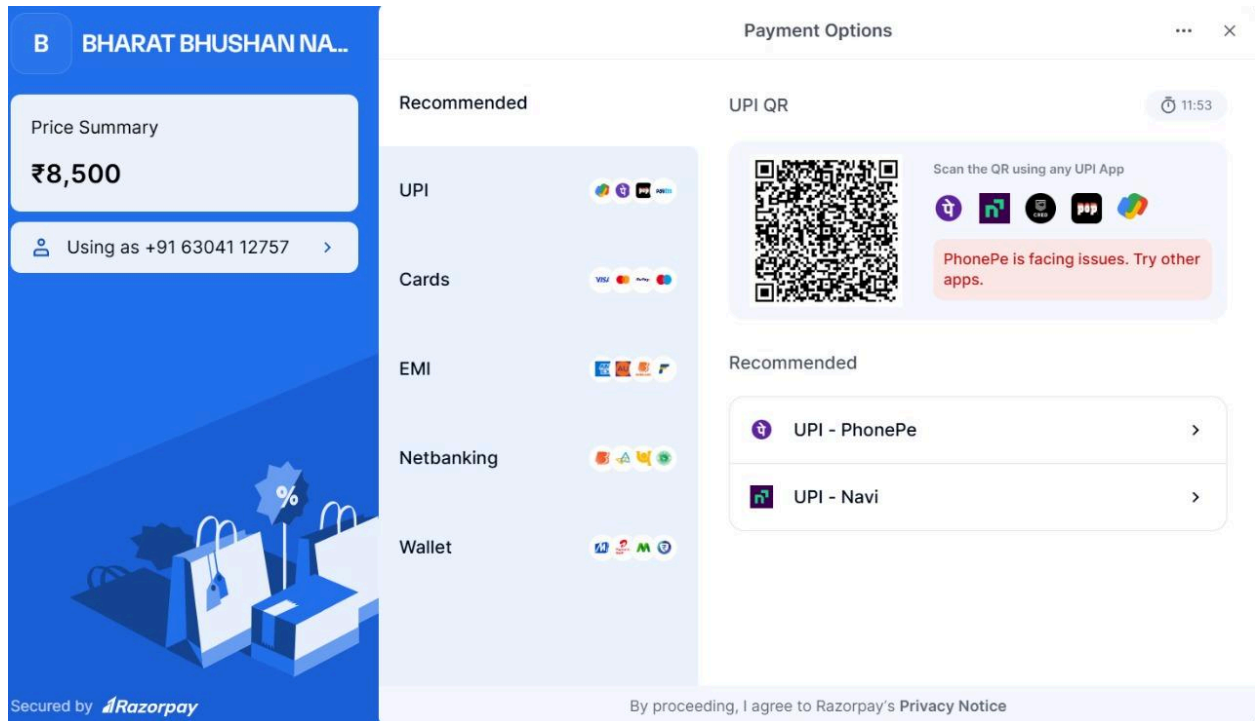
PhonePe is facing issues. Try other apps.

Recommended

UPI - PhonePe

UPI - Navi

By proceeding, I agree to Razorpay's Privacy Notice



Github Repository:

