## Full Stack Engineering

Project Report

Semester-VI (Batch-2022)

RozgarSetu

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**Supervised By: Submitted By:**

Mr. Rahul Rajput Nitin Choudhary (2210991999)

Nitin Kumar (2210992001)

Omil Goel (2210992007)

Piyush Goyal (2210992044)

Prince Kumar (2210992091)

**Department of Computer Science and Engineering**

## Chitkara University Institute of Engineering & Technology,

## Chitkara University, Punjab

**Abstract:**

RozgarSetu is a digital platform designed to bridge the employment gap for blue-collar workers in India. The system facilitates job seekers in finding suitable employment based on their profiles and allows employers to post job vacancies efficiently. By integrating features such as real-time application tracking, job matching algorithms, and additional worker benefits like life insurance and educational plans, RozgarSetu aims to enhance transparency and fairness in the job market. This report presents the system's background, problem definition, methodology, and expected outcomes.

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**1. Introduction**

**1.1 Background**

The job market for blue-collar workers in India faces several challenges, including the lack of direct employer-employee connections, reliance on middlemen, and non-transparent hiring practices. Many workers depend on informal networks and third-party agencies, often leading to underpayment, job insecurity, and a lack of benefits. Employers, on the other hand, struggle to find skilled labor efficiently due to unstructured recruitment processes.

RozgarSetu addresses these inefficiencies by offering a structured, technology-driven job-matching solution. The platform serves as a bridge between workers and employers, eliminating intermediaries and ensuring fair wages and transparent hiring. By providing a digital interface for profile creation, job listings, and application tracking, RozgarSetu aims to revolutionize blue-collar job placements in India.

Additionally, RozgarSetu introduces innovative features such as real-time job alerts, automated matching based on skill sets, and employer analytics to optimize hiring decisions. The platform will also integrate additional support services such as financial assistance, insurance coverage, and skill development programs to improve the overall quality of life for workers.

The significance of this platform extends beyond job placements. RozgarSetu empowers workers by providing them with financial stability through transparent salary structures, secure transactions, and direct interactions with employers. By eliminating exploitative middlemen, the platform ensures that workers receive fair wages and better working conditions. Moreover, employers benefit from a streamlined recruitment process, reducing hiring time and improving efficiency in workforce management.

RozgarSetu also plays a crucial role in skill development and career progression. By enabling workers to showcase their skills and certifications, the platform encourages continuous learning and professional growth. It allows employers to assess candidates based on verified credentials, ensuring that jobs are awarded to deserving and qualified workers. This approach not only benefits individual workers but also strengthens the overall labor market by promoting a culture of skill-based employment.

**1.2 Objectives**RozgarSetu aims to achieve the following objectives:

* Develop a seamless and user-friendly digital platform for job seekers and employers.
* Reduce dependency on middlemen, ensuring fair wages and direct employer-employee interaction.
* Provide additional benefits such as insurance plans, financial support, and education assistance for workers.
* Enhance hiring efficiency for employers through automated job recommendations and applicant tracking.
* Support multi-language accessibility to cater to a diverse worker base in India.
* Improve overall job market transparency and worker protection.
* Offer workers opportunities for skill enhancement and career growth through verified certifications.
* Foster a fair and ethical work environment, ensuring compliance with labor laws and fair wage policies.

By fulfilling these objectives, RozgarSetu seeks to contribute to reducing unemployment rates and ensuring sustainable employment for blue-collar workers. The platform will also support economic growth by improving job satisfaction, productivity, and long-term workforce stability.

**1.3 Significance**

The significance of RozgarSetu lies in its ability to leverage technology to create a structured and efficient employment ecosystem for blue-collar workers. Traditionally, the hiring process in this sector has been plagued by a lack of standardization, minimal worker protections, and limited job accessibility. RozgarSetu directly addresses these issues by providing a centralized platform where job seekers and employers can interact seamlessly.

By eliminating intermediaries, RozgarSetu ensures that workers receive fair compensation, while employers gain access to a verified pool of skilled labor. The platform's additional benefits, such as life insurance and financial aid, further enhance worker well-being, reducing economic vulnerabilities.

Moreover, RozgarSetu promotes long-term workforce development by incorporating educational plans for workers’ children and skill enhancement programs. This initiative not only benefits individual workers but also contributes to India's broader economic growth by strengthening the blue-collar workforce.

By enhancing transparency, efficiency, and worker protection, RozgarSetu has the potential to transform the labour market, providing sustainable and equitable employment solutions. The platform’s advanced analytics and reporting capabilities also help policymakers and labor authorities track employment trends, skill shortages, and workforce demands, aiding in better labor policy formulation and implementation.

**2. Problem Definition and Requirements**

**2.1 Problem Statement**

Currently, there is no streamlined system connecting blue-collar workers directly with employers, leading to unfair wages and inefficiencies in hiring. Employers struggle to find suitable candidates due to the unorganized recruitment process.

* Lack of a centralized digital platform for blue-collar job seekers and employers.
* Dependence on informal hiring methods, resulting in delayed recruitments.
* Lack of transparency in salary structures and job terms.
* Employers face difficulties in filtering and selecting skilled workers.
* Workers do not have access to insurance, education benefits, or financial support programs.

**2.2 Software and Hardware Requirements**

* Software Requirements:
  + Node.js, Express.js for backend development.
  + MongoDB for database management.
  + React.js for front-end development.
  + Redis for efficient caching and session management.
* Hardware Requirements:
  + Cloud-based server with a minimum of 8GB RAM and 500GB storage.
  + High-speed internet connectivity.
  + Secure authentication system with role-based access control**.**

**3. Proposed Design / Methodology**

**3.1 System Architecture**The system is divided into three core modules:

* User Management Module:
  + Allows users to register and maintain detailed profiles.
  + Employers can create job postings and track applications.
  + Secure authentication using JWT tokens.
* Job Matching and Application Management:
  + Implements AI-based job-matching algorithms.
  + Enables workers to apply for jobs and receive instant notifications.
  + Employers can filter and shortlist candidates efficiently.
* Analytics and Reporting:
  + Provides insights into hiring trends and worker success rates.
  + Employers get data-driven insights to refine recruitment strategies.
  + Generates reports on job market trends, salary distribution, and hiring success rates.

**3.2 Algorithms Used**

* Job Matching Algorithm:
  + Uses machine learning models to analyze worker profiles.
  + Matches jobs based on skill sets, experience, and location.
* Real-Time Notification System:
  + Ensures instant updates on job postings, application status, and employer communications.
  + Uses WebSocket technology for seamless real-time communication.

**3.3 Database Schema**

* Users Collection: Stores worker and employer details.
* Jobs Collection: Contains job postings and employer details.
* Applications Collection: Tracks job applications and statuses.
* Notifications Collection: Stores real-time notifications for workers and employers.

**4. Results**

**4.1 Screenshots**

* Login and registration page showing user authentication.
* Job search page with filtering and recommendation options.
* Employer dashboard for managing job postings.
* Real-time application tracking and notifications.

**4.2 Performance Metrics**

* Response Time:
  + Job search queries execute within 2 seconds.
  + Profile updates and application submissions complete within 1.5 seconds.
* Scalability:
  + Platform supports thousands of concurrent users without performance degradation.
  + Uses cloud-based auto-scaling infrastructure.
* Security Measures:
  + Implements multi-factor authentication (MFA) for enhanced security.
  + Uses SSL encryption to protect data transmission.
  + Role-based access control ensures secure data handling.

**5. References**

* Node.js: [Official Documentation](https://nodejs.org/docs/latest/api/)
* Express.js: [Documentation](https://expressjs.com/)
* MongoDB: [Basics](https://docs.mongodb.com/manual/)
* EJS: [Documentation](https://www.ejs.co/)
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