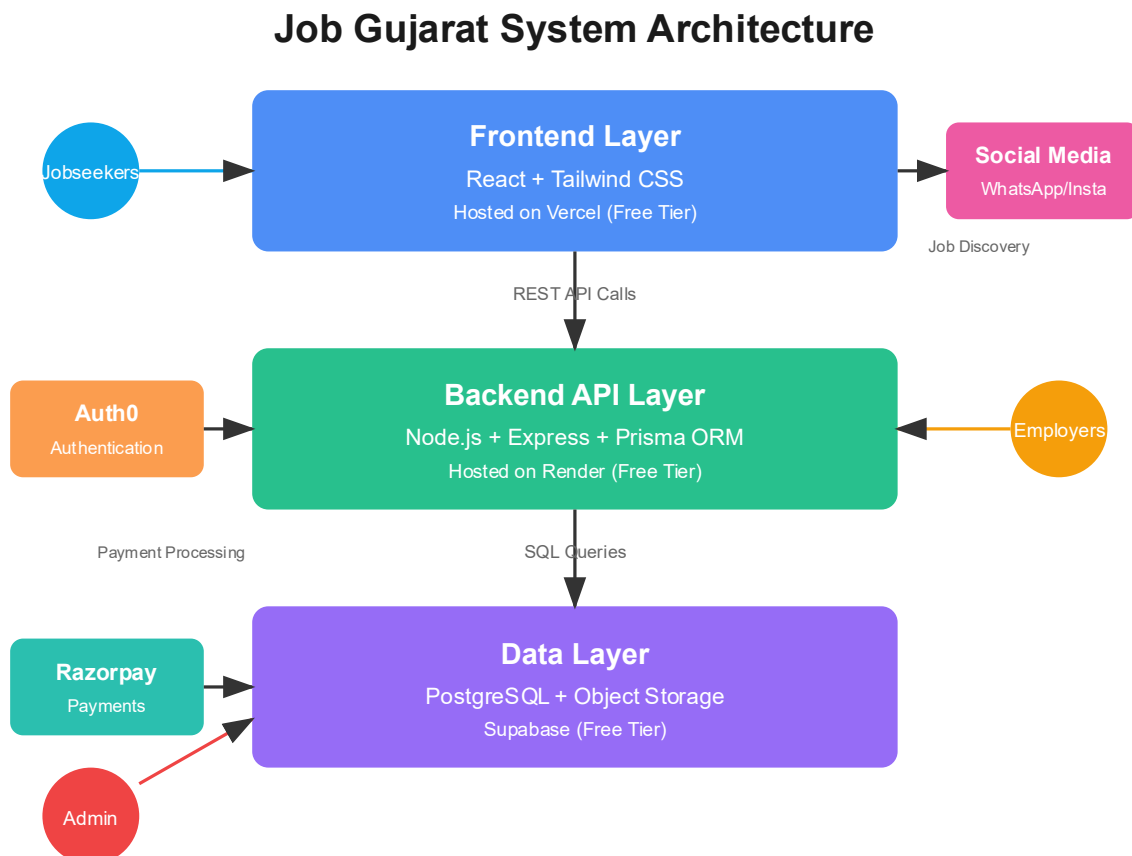|	**Marwadi University** **Faculty of Engineering and Technology** **Department of Information and Communication Technology**	
Subject: Capstone Project	**Documentation and Reporting**	
Project : - Job Gujarat	**Date: 24-09-2025**	**Enrolment No: 92310133019 & 92310133013**

Technical Report

1.1 Executive Summary

Job Gujarat is a web-based employment platform that bridges the gap between social media-based job discovery and structured job applications. Our client was struggling to manage 300k-400k social media views and hundreds of daily calls about job opportunities. We built a platform that maintains the social trust element while organizing the chaos into a manageable system.

1.2 System Design and Architecture

The platform uses a three-tier architecture with distinct modules for jobseekers, employers, and administrators. What makes our approach unique is the "social bridge system" - job posts continue to spread through WhatsApp and Instagram (where people already are), but now include smart links that capture applications properly.

System Architecture Diagram

The architecture deliberately uses free-tier services (Vercel, Render, Supabase) to keep operational costs zero while serving thousands of users. Each layer operates independently - if one service goes down, others continue functioning.

1.4 Technical Challenges and Solutions

Database Connection Issue In Deployment: Direct Connection string is not sufficient for connection database in deployment so for that session pooler and transection pooler string is required with additional query for modification and fetching.

Image and Document upload bucket issue in Supabase : Getting Errors while storing images and documents.

Database Connection Limits: Free Supabase allows only 20 concurrent connections. We implemented connection pooling and query optimization to work within this constraint.

User Manual

Getting Started with Job Gujarat

Welcome to Job Gujarat! This platform helps you find jobs or hire employees quickly and easily. You probably found us through our social media page, and now you can apply for jobs or post openings right here.

> **For Jobseekers**

Creating Your Profile

1. **Sign Up**: Click "Register" on the homepage. Enter your phone number and email. You'll receive a verification code on your phone.
2. **Complete Profile**: Add your name, skills, preferred location, and expected salary. This helps us match you with relevant jobs.
3. **Upload Resume**: Click "Upload Resume" and select your file (PDF works best, maximum 5MB). Don't worry if you don't have one - you can still apply to many jobs.

Finding and Applying for Jobs

1. **Browse Jobs**: Use the search bar to find specific roles or browse all listings. Filter by location, salary, or job type.
2. **Apply**: Found a job you like? Click "Apply Now". Your profile and resume are automatically attached.
3. **Track Applications**: Go to "My Applications" to see which jobs you've applied for and their status (Applied, Viewed, Shortlisted, or Rejected).
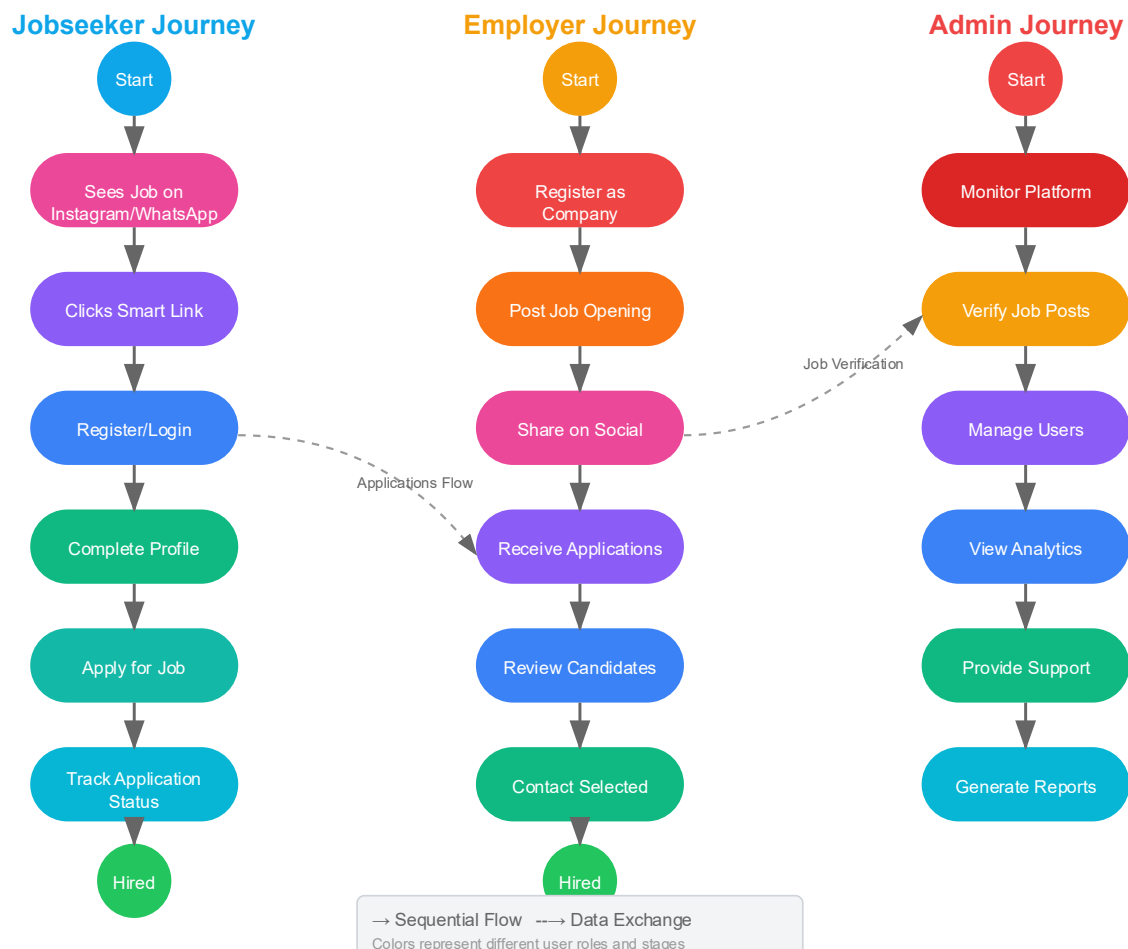
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➢ **For Employers**

Posting a Job

1. **Register as Employer**: Choose "Employer" during registration. Provide your company details.
2. **Post Job**: Click "Post New Job" in your dashboard. Fill in:
   - Job title and description
   - Required skills and experience
   - Salary range (helps get more applicants)
   - Location and job type
3. **Manage Applications**: View all applications in your dashboard. You can filter candidates, download resumes, and update their status.

User Journey Flow - Job Gujarat

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Code Documentation

Project Structure Overview

Our codebase follows a clear separation between frontend and backend, with shared types for consistency. Here's how it's organized:

```
Job+-gujarat/
├── frontend/          # React application
│   ├── src/
│   │   ├── components/   # Reusable UI components
│   │   ├── pages/       # Route-based page components
│   │   ├── services/    # API communication layer
│   │   └── utils/       # Helper functions
├── backend/           # Node.js API server
│   ├── routes/        # API endpoints
│   ├── controllers/   # Business logic
│   ├── prisma/        # Database schema
│   └── middleware/    # Auth, validation, error handling
```

Key Modules and Functions

Authentication Module (backend/middleware/auth.js)

```
// Verifies JWT tokens and manages user sessions
// Uses Auth0 for OAuth integration
validateToken() // Checks token validity
attachUser()    // Adds user object to request
checkRole()     // Validates user permissions
```

Job Recommendation Engine (backend/services/recommendations.js)

```
// Matches jobs to user profiles based on skills and location
generateRecommendations() // Main matching algorithm
scoreMatch()              // Calculates relevance score
filterExpired()           // Removes outdated listings
```

Application Processor (backend/controllers/applicationController.js)

```
// Handles job applications from submission to tracking
submitApplication()  // Validates and saves applications
attachDocuments()    // Links resumes to applications
updateStatus()       // Manages application workflow
preventDuplicates()  // Ensures single application per job
```

Search Service (frontend/src/services/searchService.js)

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```
// Implements real-time job search with filters
searchJobs()      // Main search with debouncing
applyFilters()    // Location, salary, type filtering
cacheResults()    // Stores recent searches locally
```
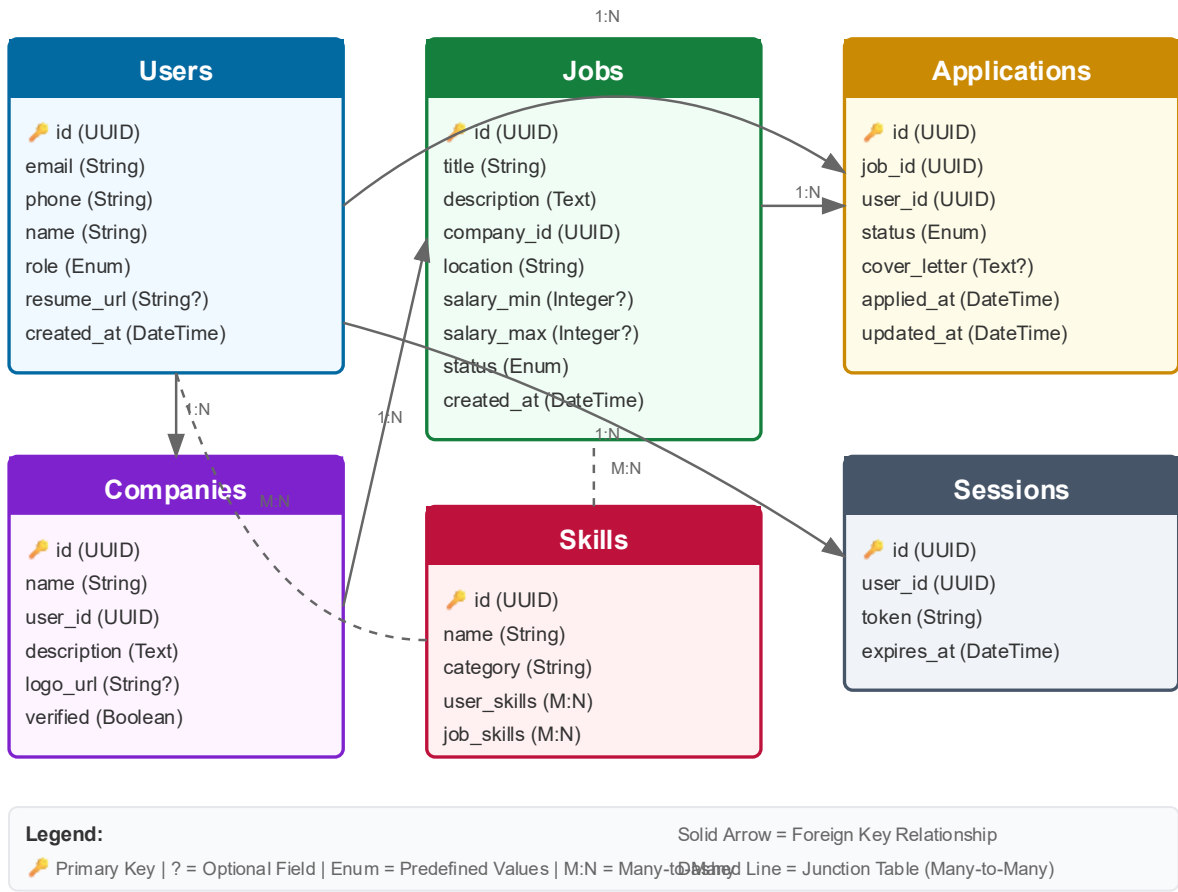
Database Schema (Prisma)

The database uses PostgreSQL with three main entities:
- **Users**: Stores profiles for jobseekers and employers
- **Jobs**: Contains job postings with full details
- **Applications**: Links users to jobs with status tracking

Relationships are managed through Prisma ORM for type safety and migration management.

Database Schema - PostgreSQL

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Environment Variables Required:

```
DATABASE_URL      # PostgreSQL connection string
AUTH0_DOMAIN     # Auth0 configuration
SUPABASE_KEY     # Storage access
FRONTEND_URL      # CORS configuration
```