

1. PROJECT OVERVIEW

TrueCred is not just a credential verifier — it's a modular career and opportunity platform. We're building an integrated alternative to platforms like LinkedIn, Naukri, Codilio, and Freelancer in one unified app. The system will include:

- Verified credential management
- Smart resume builder
- Job/internship marketplace
- Freelancing module
- Skill showcase and testing
- Social professional networking

This document breaks the platform into distinct systems:

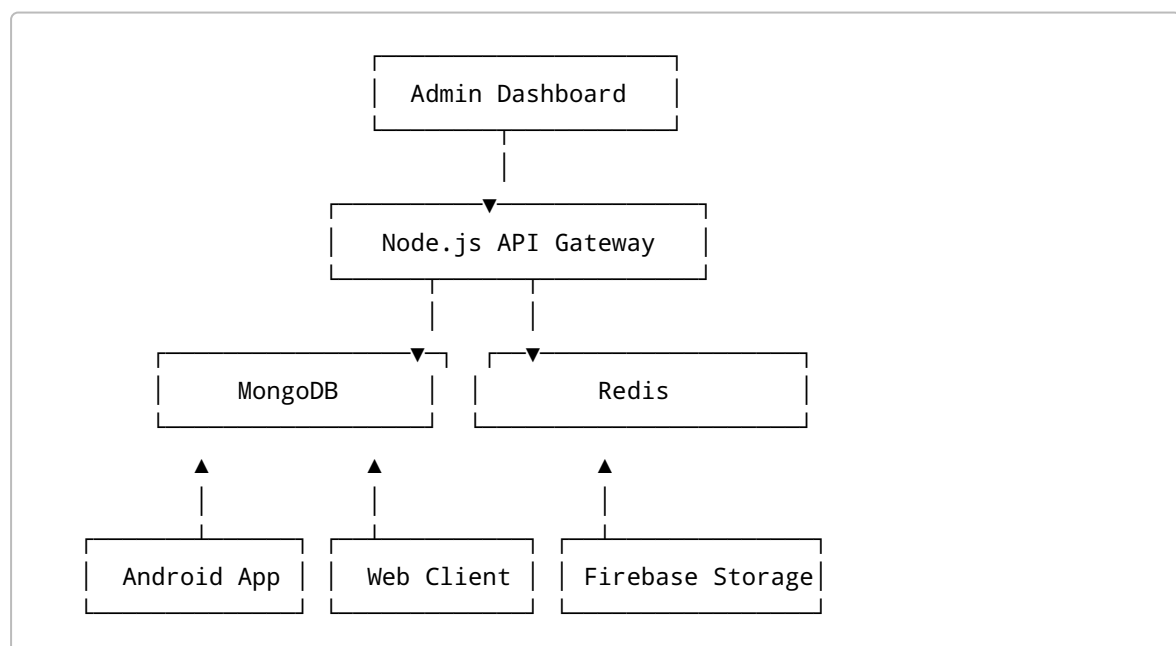
1. **Main System Architecture Overview**
2. **Mobile App Architecture**
3. **Web Platform Design**
4. **Server & API Infrastructure**

Methodology: Agile (modular sprints, role-wise component delivery)

2. SYSTEM ARCHITECTURES

2.1 MAIN SYSTEM OVERVIEW

This diagram explains how major systems interact together.



2.2 MOBILE APP ARCHITECTURE

```
Android App (Java)
├─ AuthModule (Login, Register)
├─ ProfileModule (Build/Edit Profile)
├─ ResumeModule (Generate/Download)
├─ CredentialModule (Upload, Request Verification)
├─ JobModule (List, Apply)
├─ FreelanceModule (List, Apply)
├─ MessagingModule (Chat, Notifications)
└─ Network Layer (Retrofit + JWT)
```

Storage: SQLite/RoomDB for offline sync, SharedPreferences for session

2.3 WEB PLATFORM ARCHITECTURE

```
React Web App
├─ AuthContext (Login, Token)
├─ DashboardLayout
│   └─ ProfileView/Edit
│   └─ Resume Generator
│   └─ Jobs List & Apply
│   └─ Freelance Bidding Panel
│       └─ Credential Verification Portal (for Colleges)
├─ AdminView
│   └─ User Moderation, Metrics, Flag System
├─ State Management: Redux Toolkit
└─ Styling: TailwindCSS
```

Deployment: Vercel or Netlify

2.4 SERVER + BACKEND INFRASTRUCTURE

```
Backend (Node.js + Express)
├─ Auth Service
│   └─ /login, /register, /refresh
├─ User Profile Service
│   └─ /profile (GET/PUT)
├─ Credential Service
│   └─ /documents/upload, /documents/verify
├─ Resume Generator Service
│   └─ /resume/generate
├─ JobService
│   └─ /jobs/list, /jobs/apply
```

- └─ FreelanceService
 - └─ /freelance/post, /freelance/apply
- └─ ChatService (Socket.io)
- └─ Notification Service (FCM)
- └─ Admin Moderation
 - └─ /admin/users, /admin/flags

Infrastructure:

- └─ MongoDB (Document storage)
- └─ Redis (Sessions + Rate limiting)
- └─ Firebase Storage (Credential files)
- └─ Docker for service containerization
- └─ Nginx (API Gateway + Reverse proxy)
- └─ GitHub Actions for CI/CD

3. ACTORS & RESPONSIBILITIES

Database-Level Access Controls

Collection / Resource	Guest	Student	Freelancer	Professional	Recruiter	Institution	Admin
Users	Read	Self R/W	Self R/W	Self R/W	Self R/W	Self R/W	All
Profiles	✗	Self R/W	Self R/W	Self R/W	Self R/W	Self R/W	All
Documents	✗	Self R/W	Self R/W	Self R/W	✗	R/W	All
Jobs	Read	Read	Read	Read	R/W	✗	All
Applications	✗	R/W	R/W	R/W	R	✗	All
FreelancePosts	Read	Read	Read	Read	R/W	✗	All
Verifications	✗	Create	Create	Create	✗	R/W	All
Messages / Chats	✗	R/W	R/W	R/W	R/W	R/W	All
Flags / Reports	✗	Create	Create	Create	✗	✗	R/W
AdminLogs / AuditTrail	✗	✗	✗	✗	✗	✗	Full

API-Level Access Map by Role

API Endpoint	Guest	Student	Freelancer	Professional	Recruiter	Institution	Admin
POST /auth/register	✓	✓	✓	✓	✓	✓	✗
POST /auth/login	✓	✓	✓	✓	✓	✓	✗
GET /profile	✗	✓	✓	✓	✓	✓	✓
PUT /profile	✗	✓	✓	✓	✓	✓	✓
POST /documents/upload	✗	✓	✓	✓	✗	✓	✓
POST /documents/request	✗	✓	✓	✓	✗	✗	✓
GET /documents/status	✗	✓	✓	✓	✗	✓	✓
GET /jobs/list	✓	✓	✓	✓	✓	✗	✓
POST /jobs/apply	✗	✓	✓	✓	✗	✗	✓
POST /freelance/post	✗	✗	✗	✗	✓	✗	✓
GET /freelance/list	✓	✓	✓	✓	✓	✗	✓
POST /resume/generate	✗	✓	✓	✓	✗	✗	✓
GET /profile/public/:id	✓	✓	✓	✓	✓	✓	✓
GET /admin/users	✗	✗	✗	✗	✗	✗	✓
POST /admin/flags/resolve	✗	✗	✗	✗	✗	✗	✓
POST /notifications/send	✗	✓	✓	✓	✓	✓	✓

Role-Based Access Control (RBAC Matrix)

Feature / Access Area	Guest	Student	Freelancer	Professional	Recruiter	Institution	Admin
View public profiles	✓	✓	✓	✓	✓	✓	✓
Register/ Login	✓	✓	✓	✓	✓	✓	✗
Edit own profile	✗	✓	✓	✓	✓	✓	✗
Upload credentials	✗	✓	✓	✓	✗	✓	✗
Request document verification	✗	✓	✓	✓	✗	✗	✗
Post Jobs/ Freelance Projects	✗	✗	✗	✗	✓	✗	✗
Apply to Jobs/ Freelance Gigs	✗	✓	✓	✓	✗	✗	✗
Verify Documents	✗	✗	✗	✗	✗	✓	✓
Access Admin Dashboard	✗	✗	✗	✗	✗	✗	✓
Moderate Users/Posts	✗	✗	✗	✗	✗	✗	✓
Access Analytics	✗	✗	✗	✗	✓	✓	✓
Send/ Receive Chat Messages	✗	✓	✓	✓	✓	✓	✓
Create/ Download Resume	✗	✓	✓	✓	✗	✗	✗

System-Wide Roles (Defined Entities)

1. Guest User (Unauthenticated)

- Can view public profiles and job listings
- Cannot interact, post, or apply
- Can register or sign in

2. Registered User (Authenticated)

- Role-based subtypes:

a. Student

- Build profile (education, skills, projects)
- Upload certificates for verification
- Apply for internships and jobs
- Build and share resume

b. Freelancer

- List skills, portfolio, testimonials
- Apply to freelance gigs
- Showcase completed projects and ratings

c. Professional / Job Seeker

- Add experience and credentials
- Track job applications
- Engage in professional networking

3. Company / Recruiter

- Post jobs and freelance projects
- Search and filter verified candidate profiles
- Shortlist, contact, and hire applicants
- Provide experience verification or references

4. College / Institution

- Verify educational documents
- Maintain verifier staff access
- Track pending and completed requests
- Manage institutional dashboard

5. Admin / Super Admin

- Approve or ban institutions
 - Moderate flagged users/posts
 - Oversee analytics, platform stability, abuse reports
 - Manage service health and microservices
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A. End Users (Students, Freelancers, Professionals)

- Register, create/edit professional profiles
- Upload verified credentials
- Search/apply for jobs or freelance gigs
- Showcase portfolio, skills, testimonials
- Social networking with chat and posts

B. Companies / Recruiters / Colleges

- Post jobs, internships, freelance projects
- Review applicant profiles
- Verify uploaded credentials (colleges)
- Track hiring pipeline

C. Admins / Superusers

- Moderate users, posts, documents
 - Approve onboarding of companies/colleges
 - Manage feature flags and releases
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4. TRUECRED MODULES (ALL SYSTEMS)

- Authentication & User Roles
- Credential Upload + Verification
- Resume Generator (verified-only data)
- Jobs + Internship Listings
- Freelancing Module
- Project Showcase
- Skill Testing
- Notifications + Messaging
- Public Profiles
- Analytics + Reports