CareerHub

A Project Report Submitted

in Partial Fulfillment of the Requirement

for the Degree in Master of Computer Applications

Undertaken at

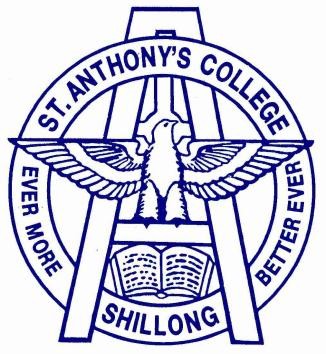
**National Institute of Electronics and Information Technology (NIELIT)**

**, Shillong.**

By

Banteilang Nongsiej,

University Roll No. 22STAMCA002



Department of Computer Science

St. Anthony’s College

Shillong

July, 2024

**NIELIT Certificate**

**NIELIT Certificate**



**Department of Computer Science**

**St. Anthony’s College, Shillong**

**Affiliated to North Eastern Hill University, Shillong**

**CERTIFICATE**

This is to certify that the project report entitled “***CareerHub***” is an approved work done by ***Mr. Banteilang Nongsiej*** (Roll No- 22STAMCA002) in the partial fulfillment of the requirement for the award of the degree of Master of Computer Application under North Eastern Hill University, Shillong from St. Anthony’s College, Shillong.

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**CERTIFICATE**

This is to certify that the Project work titled ***“CareerHub”*** is thebonafide work done by ***Mr. Banteilang Nongsiej, North Eastern Hill University, 22STAMCA002,*** under my guidance during the fourth semester of the course.

*Signature*

**Internal Guide**

*Dr. Probidita Roychoudhury*

The project seminar was held on **15**  July, 2024 at St. Anthony’s College, Shillong

Date: External Examiner

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# Introduction— About the project

In today's digital age, the job market has become increasingly dynamic and competitive, necessitating robust and efficient platforms for job seekers and employers alike. Our project, CareerHub, aims to bridge the gap between job seekers and employers by providing a comprehensive and user-friendly application. The platform leverages the latest technologies in web and mobile development to streamline the job application process, making it more accessible and efficient for users.

The application is built using Laravel for the backend and Flutter for the frontend, ensuring a seamless experience across different devices. Laravel's powerful and flexible framework provides a solid foundation for handling user data, job postings, and applications securely and efficiently. Meanwhile, Flutter's rich set of widgets and tools allows for the creation of a highly interactive and responsive user interface, enhancing user engagement and satisfaction.

Key features of the application include:

1. Job Posting and Management: Employers can easily post job openings, manage applications, and communicate with potential candidates. The platform provides tools to specify job details, qualifications, and requirements, ensuring that job postings are comprehensive and informative.
2. Job Search and Application: Job seekers can browse through job listings, filter results based on various criteria, and apply for jobs directly through the platform. The application process is streamlined, with features such as resume uploads, cover letter submissions, and application tracking.
3. User Authentication and Profiles: Both employers and job seekers can create and manage their profiles, ensuring that all interactions on the platform are secure and personalized. User profiles include essential information, such as contact details, resumes, and previous job experiences.
4. Saved Jobs and Notifications: Users can save job listings for later reference and receive notifications about application updates, new job postings, and messages from employers. This feature helps users stay informed and engaged with the job market.
5. Admin Panel: The application includes an admin panel for managing users, job postings, and overall platform settings. This ensures that the platform remains secure, up-to-date, and well-maintained.

Our project addresses the needs of both job seekers and employers by providing a platform that is not only functional and efficient but also intuitive and user-friendly. By leveraging modern web and mobile technologies, CareerHub aims to revolutionize the job application process and create a more connected and efficient job market.

# Synopsis

**Project Title:** CareerHub

**Project Overview:** CareerHub is an advanced job application platform developed to enhance the efficiency and effectiveness of the job search and recruitment process. The platform connects job seekers with potential employers by providing a centralized, user-friendly interface for job discovery, application submission, and recruitment management. It is designed to be accessible on both desktop and mobile devices, ensuring that users can engage with the platform anytime, anywhere.

**Objectives:**

1. **Streamline Job Search:** Simplify the process of finding relevant job opportunities by allowing users to search and filter job listings based on their preferences and qualifications.
2. **Simplify Application Process:** Enable job seekers to apply for positions directly through the platform with a few clicks, minimizing the time and effort required.
3. **Facilitate Employer Recruitment:** Provide employers with tools to post job listings, review applications, and communicate with candidates efficiently.
4. **Improve User Experience:** Design a mobile-first platform that ensures accessibility and ease of use on any device.
5. **Enhance Communication:** Implement notification and messaging systems to keep users informed about new opportunities and application statuses.
6. **Resume Building:** Provide tools for users to create, customize, and manage their resumes directly within the platform.

**Features:**

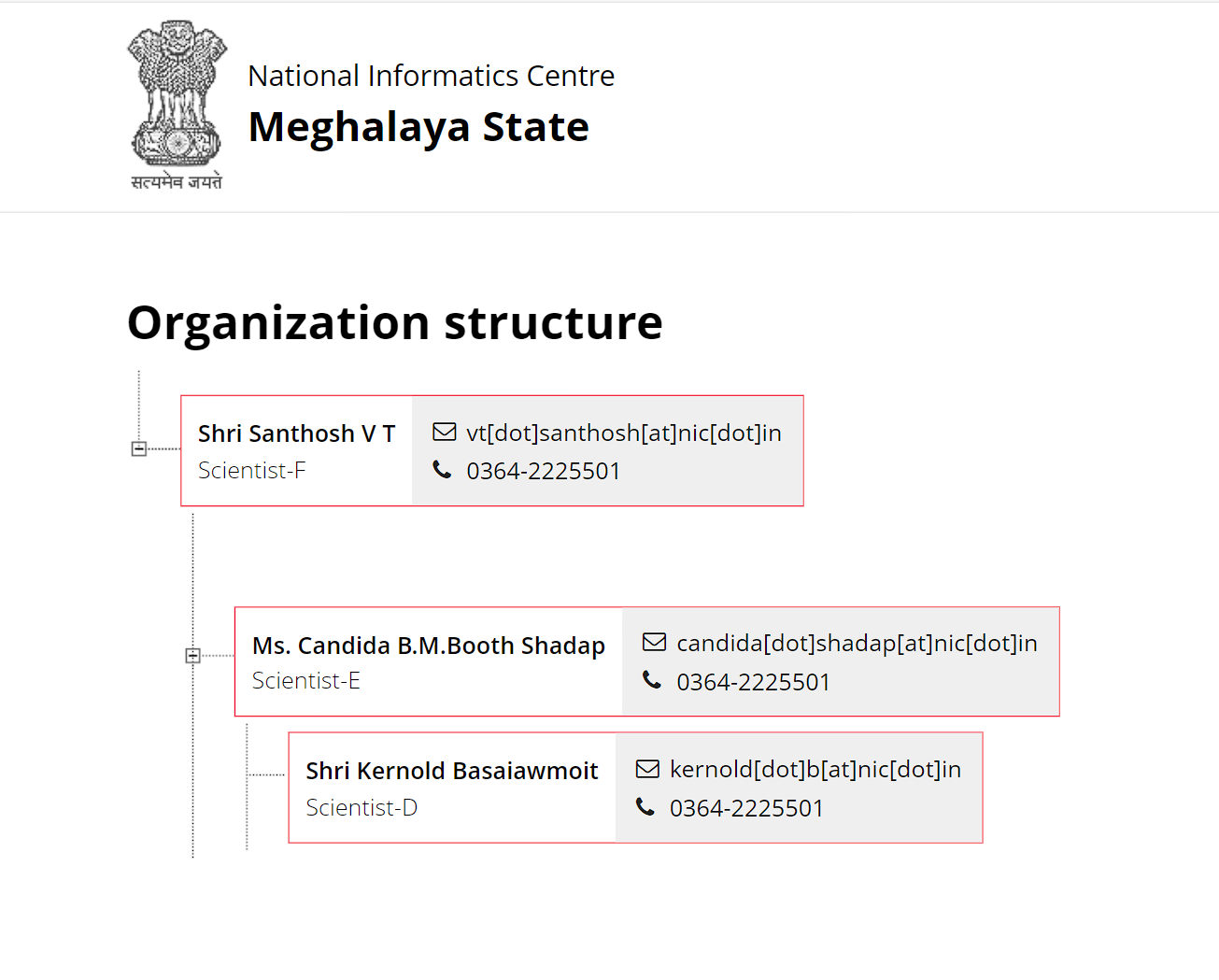
* **Job Search and Filtering:** Advanced search functionalities that allow users to find job listings based on various criteria such as job type, location, salary range, and required skills.
* **User Profiles:** Comprehensive profiles for job seekers that include personal information, resumes, education, and work experience.
* **Application Management:** Tools for job seekers to manage their applications, including tracking application statuses and saving favorite job listings.
* **Admin Dashboards:** Robust dashboards for administrators to manage platform activities including:
  + View user details
  + View job details
  + Block users
  + Delete users
  + View jobs
  + Delete jobs
* **Notifications and Alerts:** Real-time notifications for job seekers about new job postings and updates on their applications.
* **Resume Building:** An intuitive resume builder that guides users through the process of creating professional resumes, with customizable templates and real-time previews.
* **Security and Privacy:** Secure handling of user data with strict privacy controls to ensure user information is protected.

**Technologies Used:**

* **Frontend:** Flutter for a responsive and interactive user interface across multiple devices.
* **Backend:** Laravel framework to handle server-side logic, database management, and API integrations.
* **Database:** MySQL for reliable and efficient data storage and retrieval.
* **Other Tools:** Integration with various third-party services and libraries to enhance functionality and user experience.

**Conclusion:** CareerHub is poised to revolutionize the job application process by providing a comprehensive, user-friendly platform that meets the needs of both job seekers and employers. By leveraging modern technologies and focusing on user experience, CareerHub aims to make job searching and recruitment more efficient, effective, and enjoyable. The addition of a resume-building tool further empowers users by enabling them to create professional resumes with ease, increasing their chances of securing their desired job.

# Organization’s Profile



# System Study

## Existing System

1. **LinkedIn:**

LinkedIn is a professional networking platform that also functions as a job portal, facilitating connections between job seekers and employers on a global scale. Here are the key features of LinkedIn that will be highlighted during the project presentation:

* **User Registration and Profile Creation:**
  + Users can register and create detailed professional profiles that showcase their skills, experience, education, and achievements.
  + Profiles act as digital resumes, enhancing visibility and accessibility for recruiters.
* **Job Search and Filtering:**
  + Job seekers can efficiently browse and filter job listings based on various criteria such as location, industry, job type, salary, and keywords.
  + Advanced search capabilities allow users to find the most relevant job opportunities quickly and easily.
* **Job Posting:**
  + Employers can directly post job vacancies with comprehensive details, including job roles, requirements, responsibilities, and company information.
  + Job postings are visible to a vast network of potential candidates, increasing the reach and quality of applications.
* **Content Sharing and Engagement:**
  + Users can share professional updates, articles, and insights on their LinkedIn feed, fostering engagement within their network.
  + Features such as likes, comments, and shares enable users to interact with and amplify content, promoting professional discourse and knowledge sharing.

1. **Seeking and Sharing Job Opportunities Through Social Media:**
   * LinkedIn allows users to seek and share job opportunities within their professional network.
   * This enhances the visibility of job postings and helps users leverage their connections for career advancement.
2. **Seeking Job Opportunities Manually:**
   * Users can manually search for job opportunities, utilizing the platform for recruitment purposes through social media advertising.
   * This includes actively reaching out to companies, applying for jobs, and networking with professionals in their industry.

## Proposed System

CareerHub offers a comprehensive suite of features designed to facilitate seamless interactions between job seekers and employers. Here are the refined points highlighting the proposed system's capabilities:

1. **User Registration and Profile Creation:**

* Users can create detailed profiles containing professional information such as work experience, education, skills, and certifications.
* Profiles serve as digital resumes, enhancing user visibility to potential employers.

1. **Job Search and Filtering:**
   * Job seekers can efficiently browse and filter job listings based on various preferences including location, industry, job type, salary range, and keywords.
   * Advanced search functionalities ensure users find the most relevant job opportunities.
2. **Resume Building:**

* Users have access to tools and templates for building professional resumes directly within the platform.
* This feature simplifies the resume creation process, ensuring job seekers can present their qualifications effectively.

1. **Job Posting:**

* Employers can post job vacancies with detailed descriptions, including job roles, requirements, responsibilities, and company information.
* Job postings are accessible to a wide audience, increasing the likelihood of attracting qualified candidates.

1. **Application Management:**

* Job seekers can apply directly to job postings through the platform.
* Employers can efficiently manage and track applications, streamlining the hiring process.

1. **Notifications:**

* Real-time alerts notify users of relevant updates, such as new job postings, application status changes, and messages from employers.
* Users who opt to receive notifications for new job postings will receive instant updates when relevant positions are added to the platform.

1. **Resources:**

* Users have access to a variety of tools and resources for resume building and career development.
* These resources support users in enhancing their professional profiles and improving their job search strategies.

1. **Security and Privacy:**

* CareerHub ensures robust data protection measures to secure user information and maintain privacy.
* Users can trust that their personal and professional data is handled with the highest standards of security.

# User Requirements

## Software Requirements

**For DEVELOPER:**

* + 1. **Windows Operating System.**
    2. **Development Environment** 
       - Visual Studio Code
       - Android Emulator (Geny Motion)
       - PHP 8.0 or later
       - Composer
    3. **Front End:** Flutter
    4. **Database Management System**: MySQL
    5. **Server**: Apache
    6. **Back End:** Laravel
    7. **Postman:** For API testing purpose
    8. **Network:**
       - Reliable internet connection for accessing online resources and version control repositories.

**For USER:**

1. Any kind of Appstore
   * Example of Google Playstore
2. Internet Connection: Stable internet connection for seamless access to the job portal's features receiving notifications.

## Hardware Requirements

**For** **DEVELOPER:**

1. **Computer System**
2. **Processor:** Intel Core i3 or equivalent
3. **RAM:** 8-GB minimum, 16 GB recommended
4. **Storage:** 256GB SSD minimum, 512GB SSD recommended for faster development.
5. **Hard Disk:** 5 GB minimum

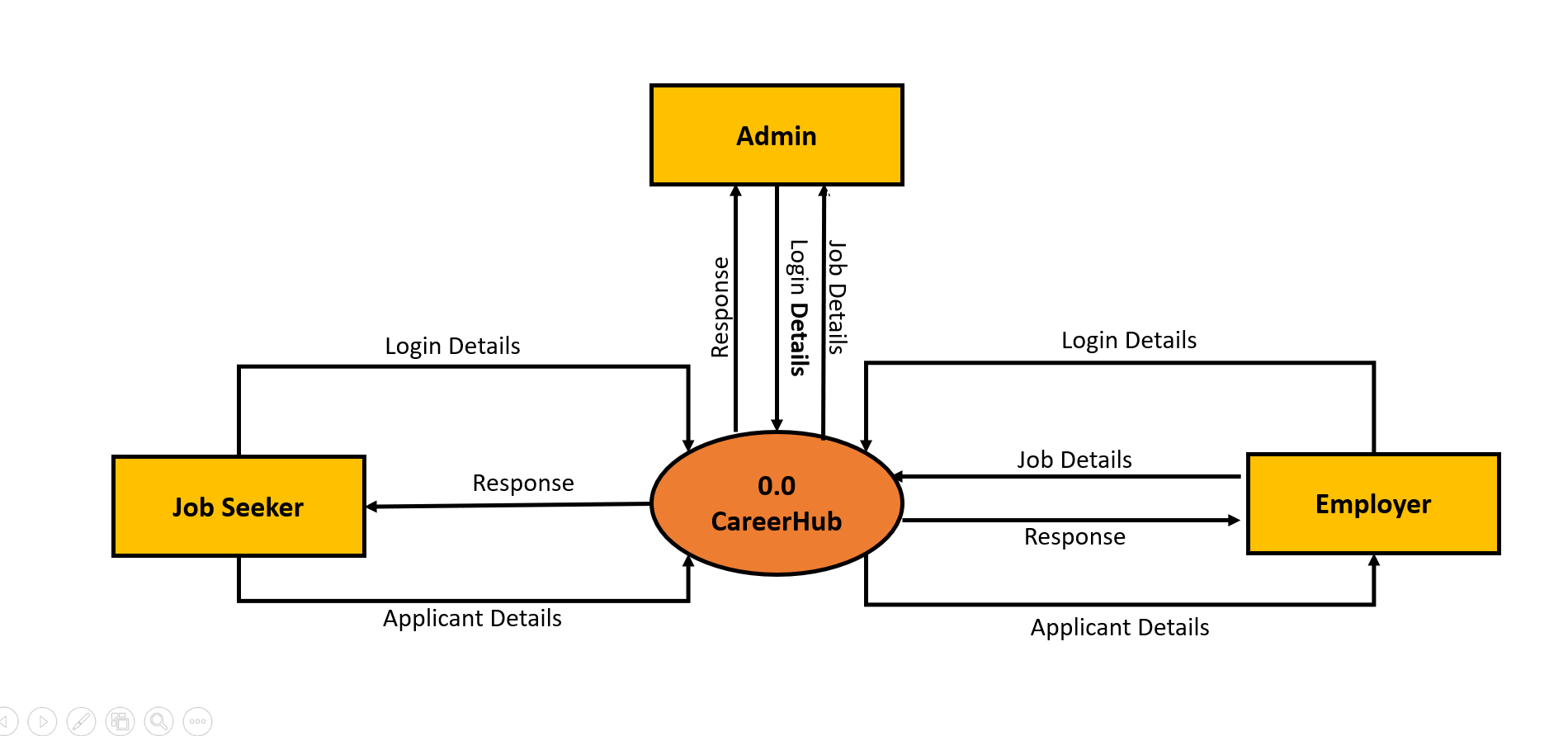
**For USER:**

For optimal performance, the proposed job portal app has the following system requirements:

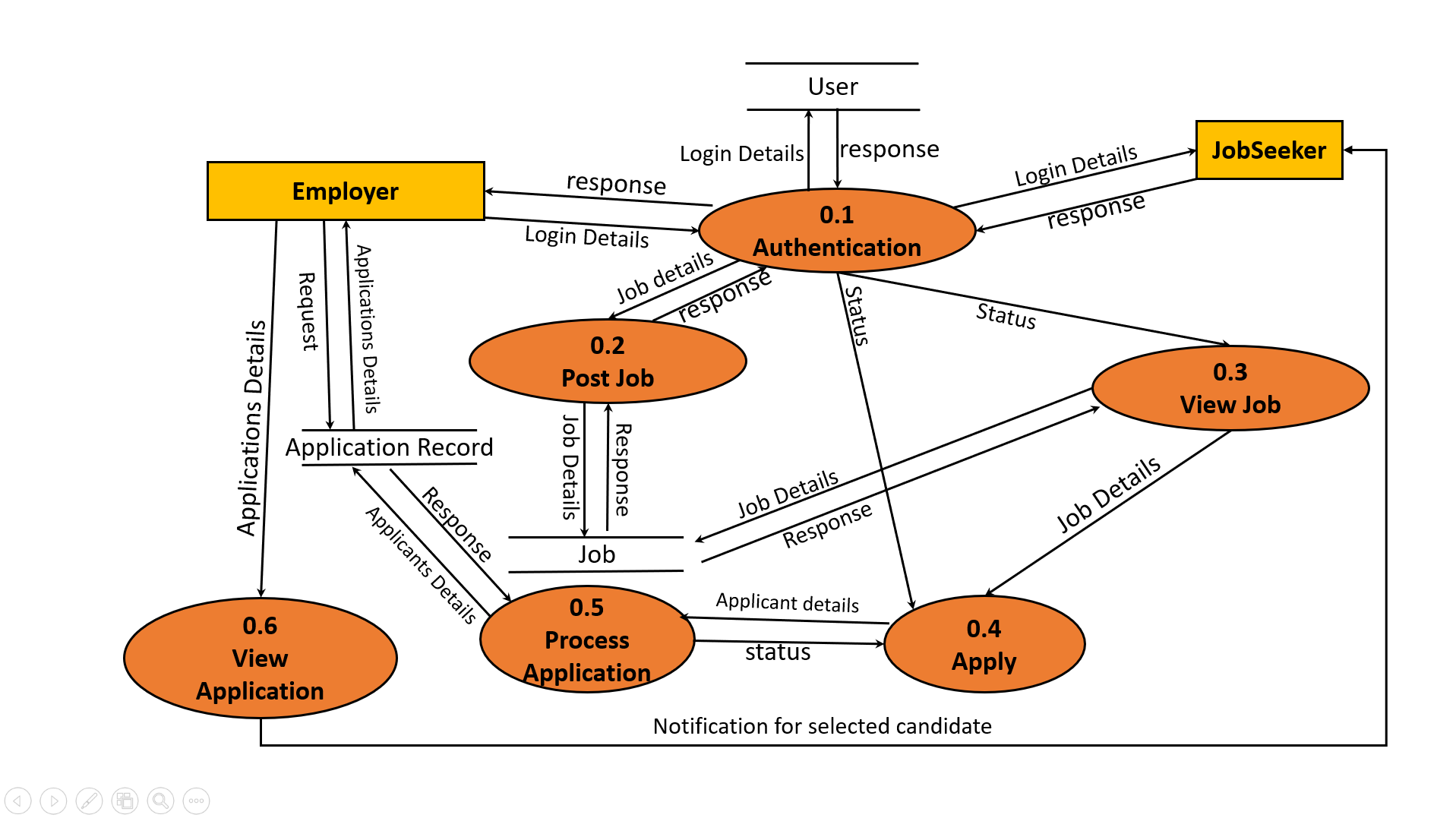
1. **Smartphone:**
   * **Operating System**: The app is compatible with both Android and iOS devices, with sufficient storage for app installation and usage..
2. **Storage**:
   * **Minimum Free Storage**: The app requires at least 300MB of free storage space on the device to install the app and download necessary content.
3. **Memory**:
   * **RAM**: A minimum of 2GB RAM is recommended to ensure smooth operation and a seamless user experience.

# Data Flow Diagram

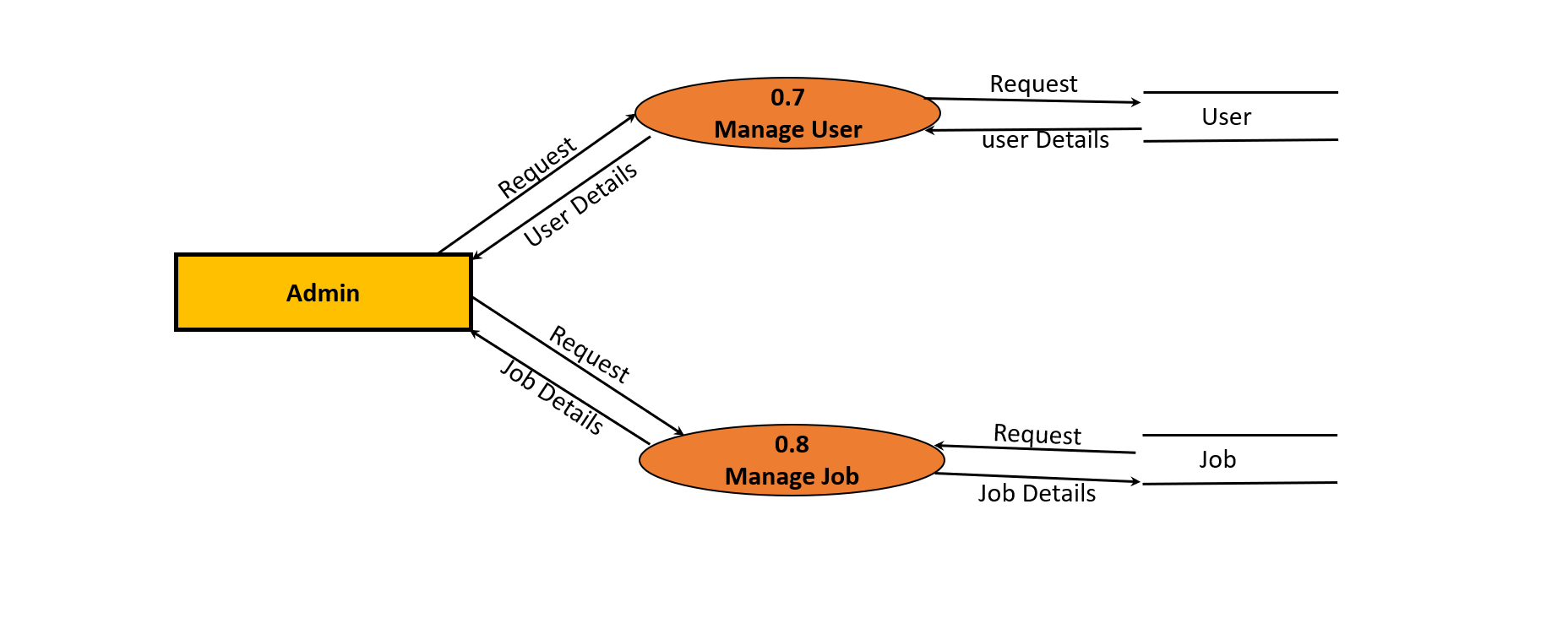
**Level-0:**

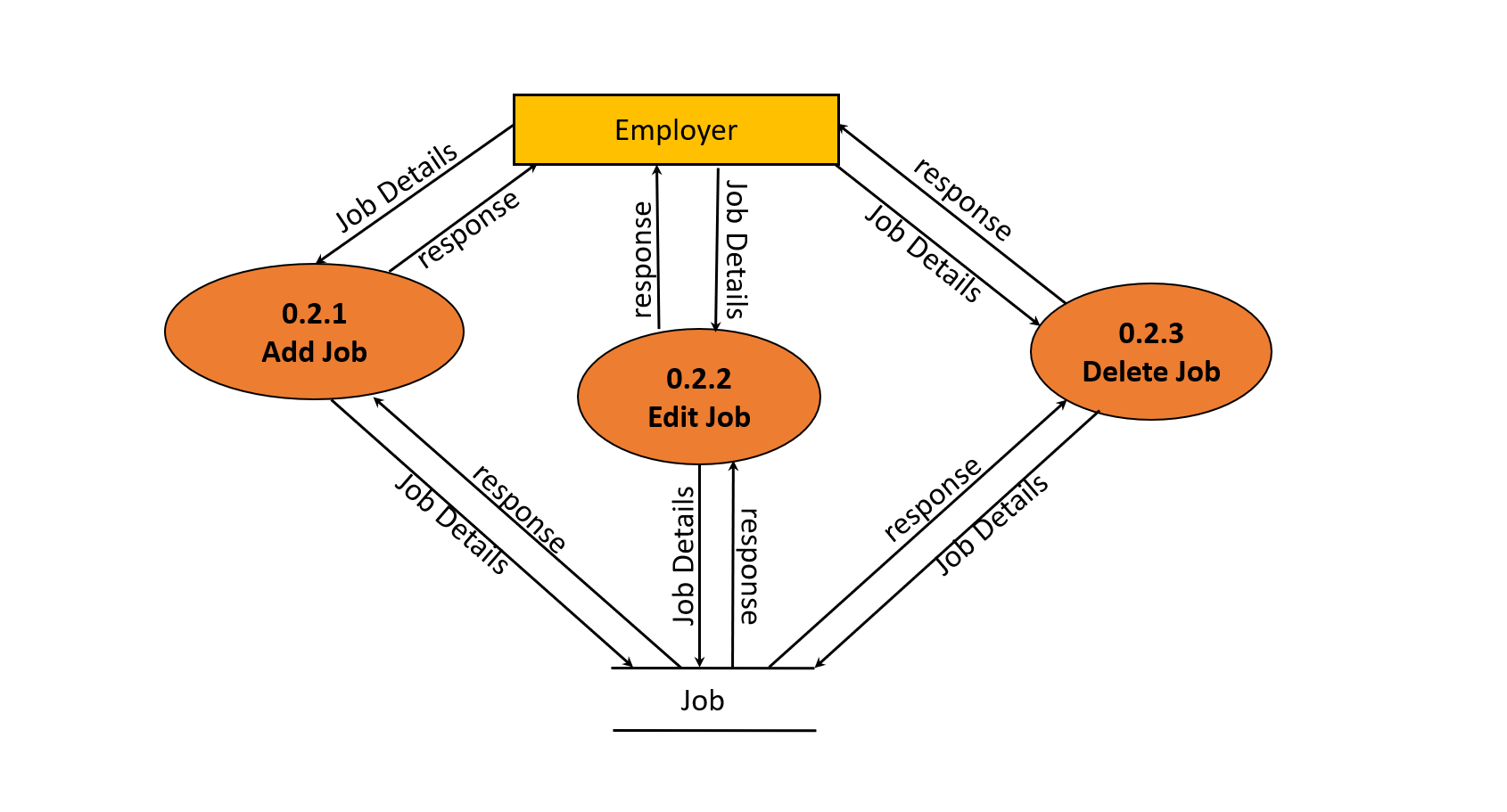


**Level-1: (USERS)**

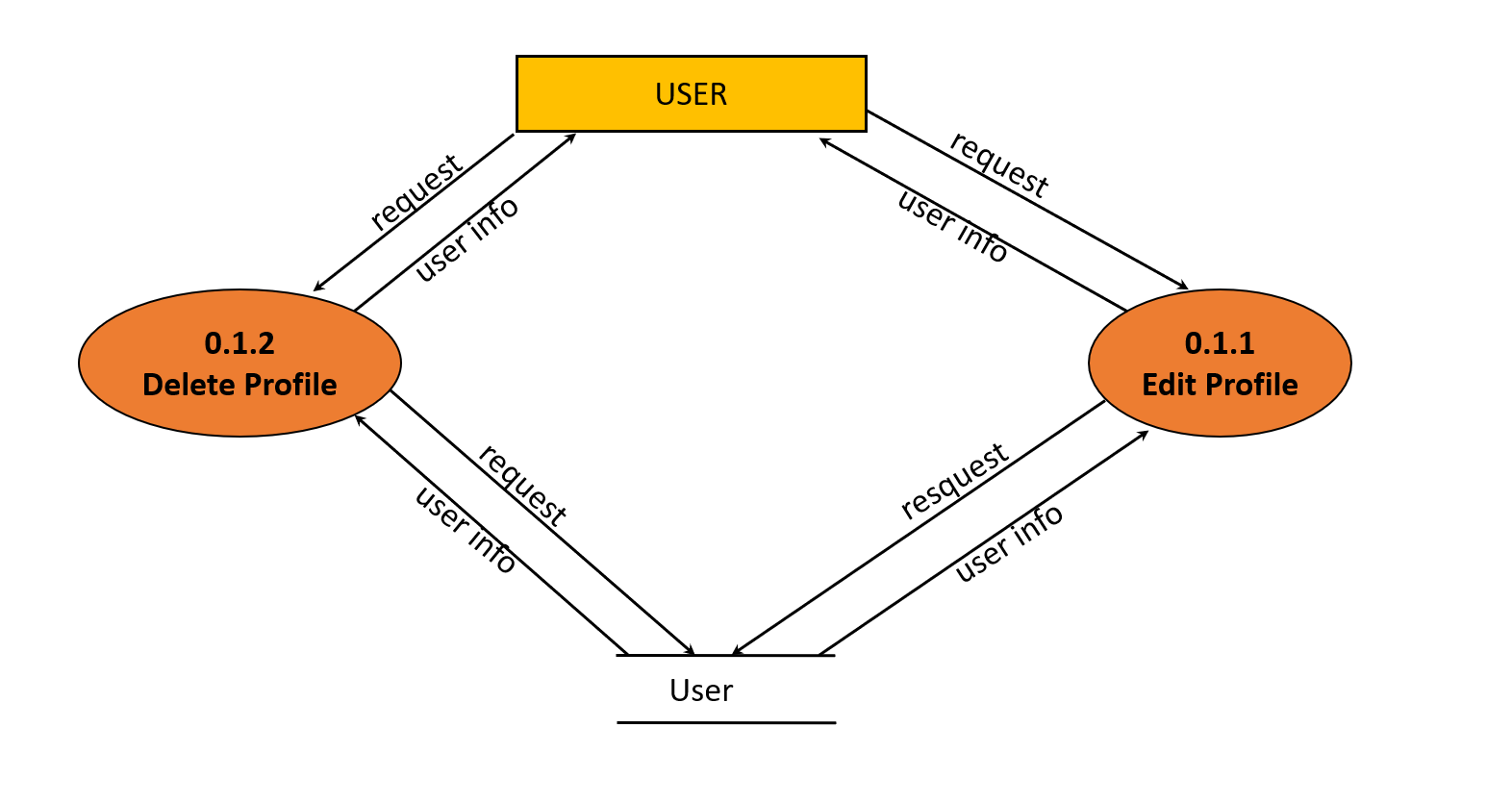


**Level-1: (USERS)**

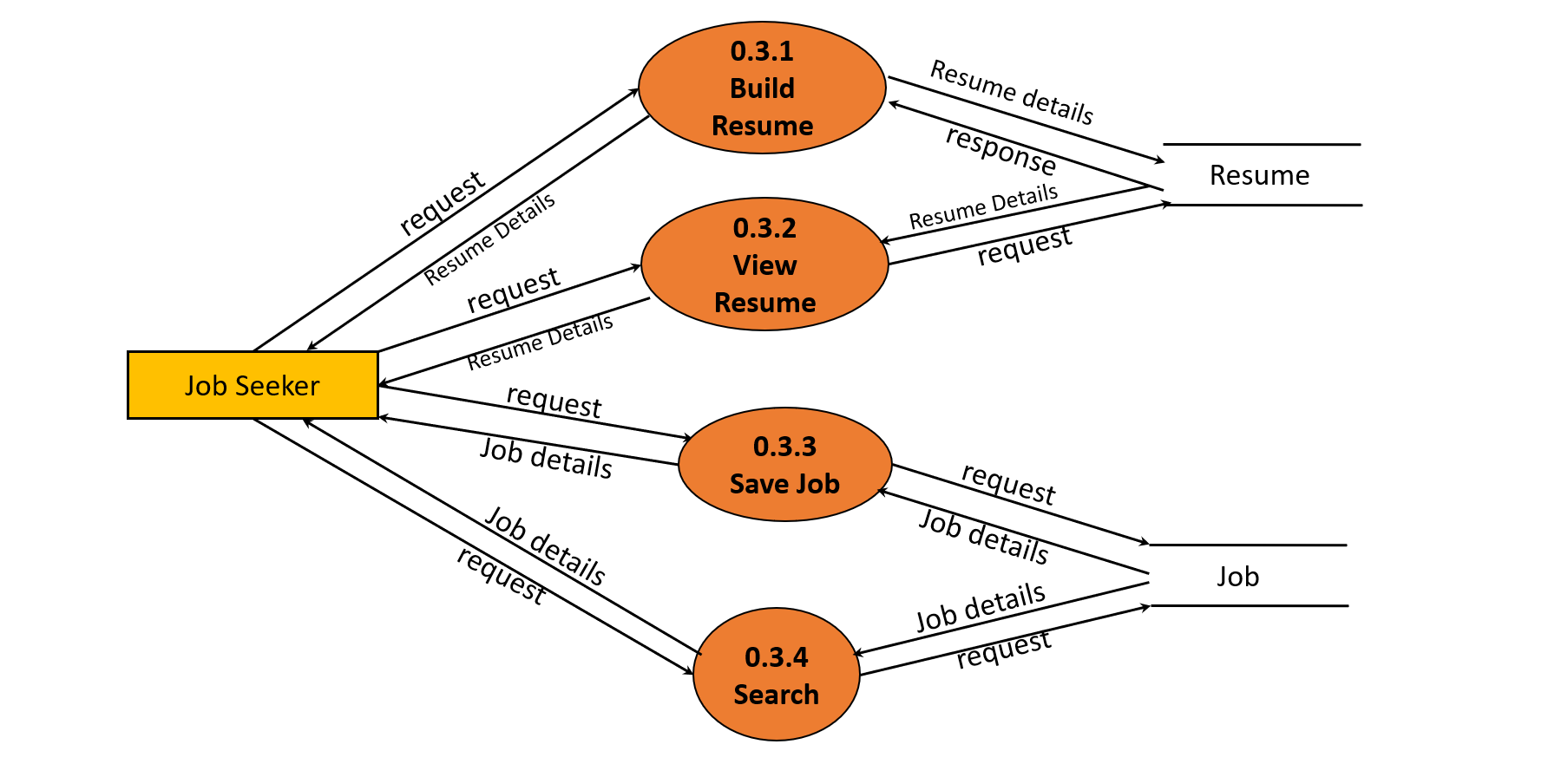


**Level-2: (Employer)**

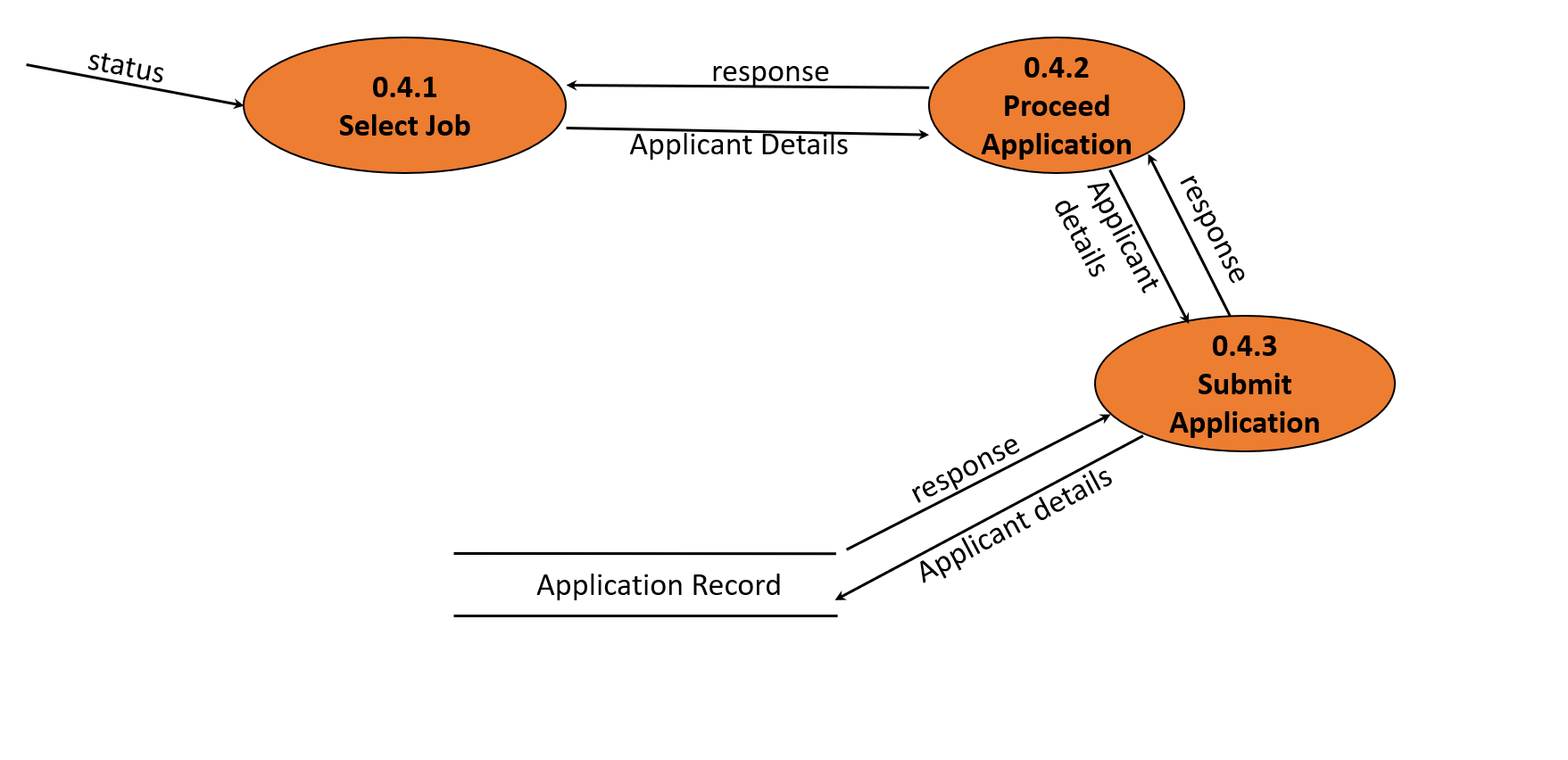
**Level-2 (USER)**

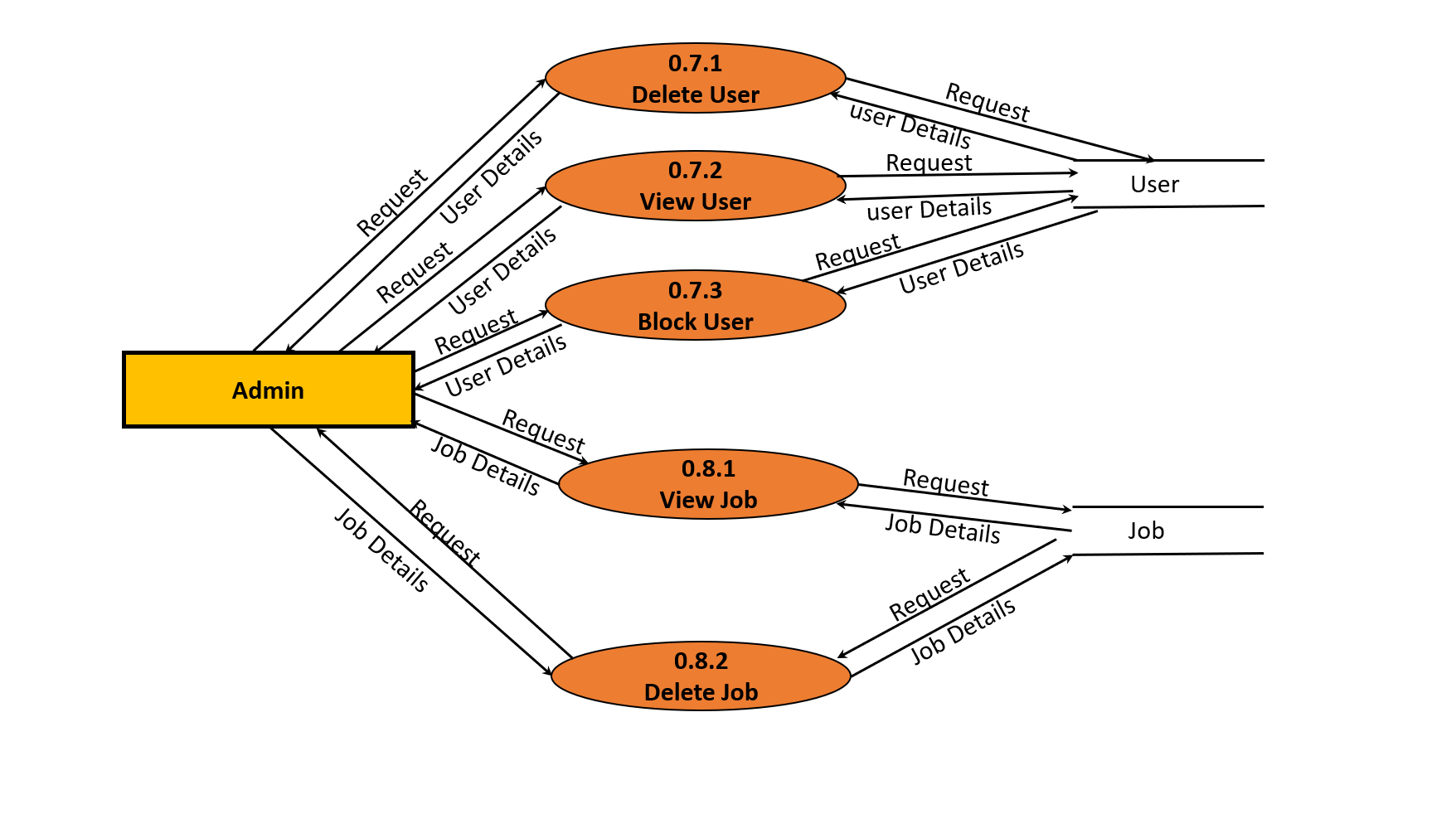
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**Level-2 (Job Seeker)**

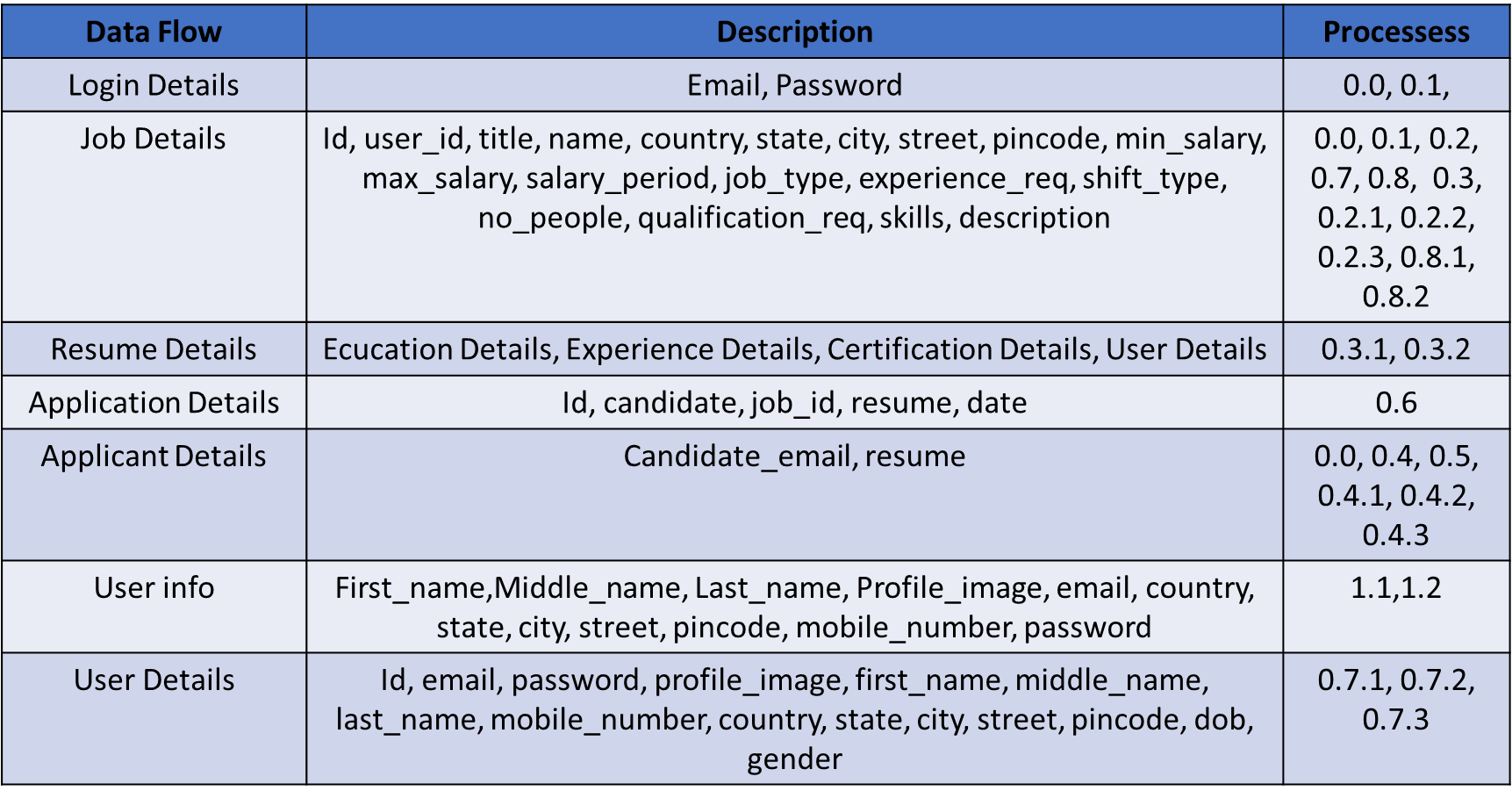
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**Level-2 ( Job Applying Process)**

**Level-2 (Admin)**

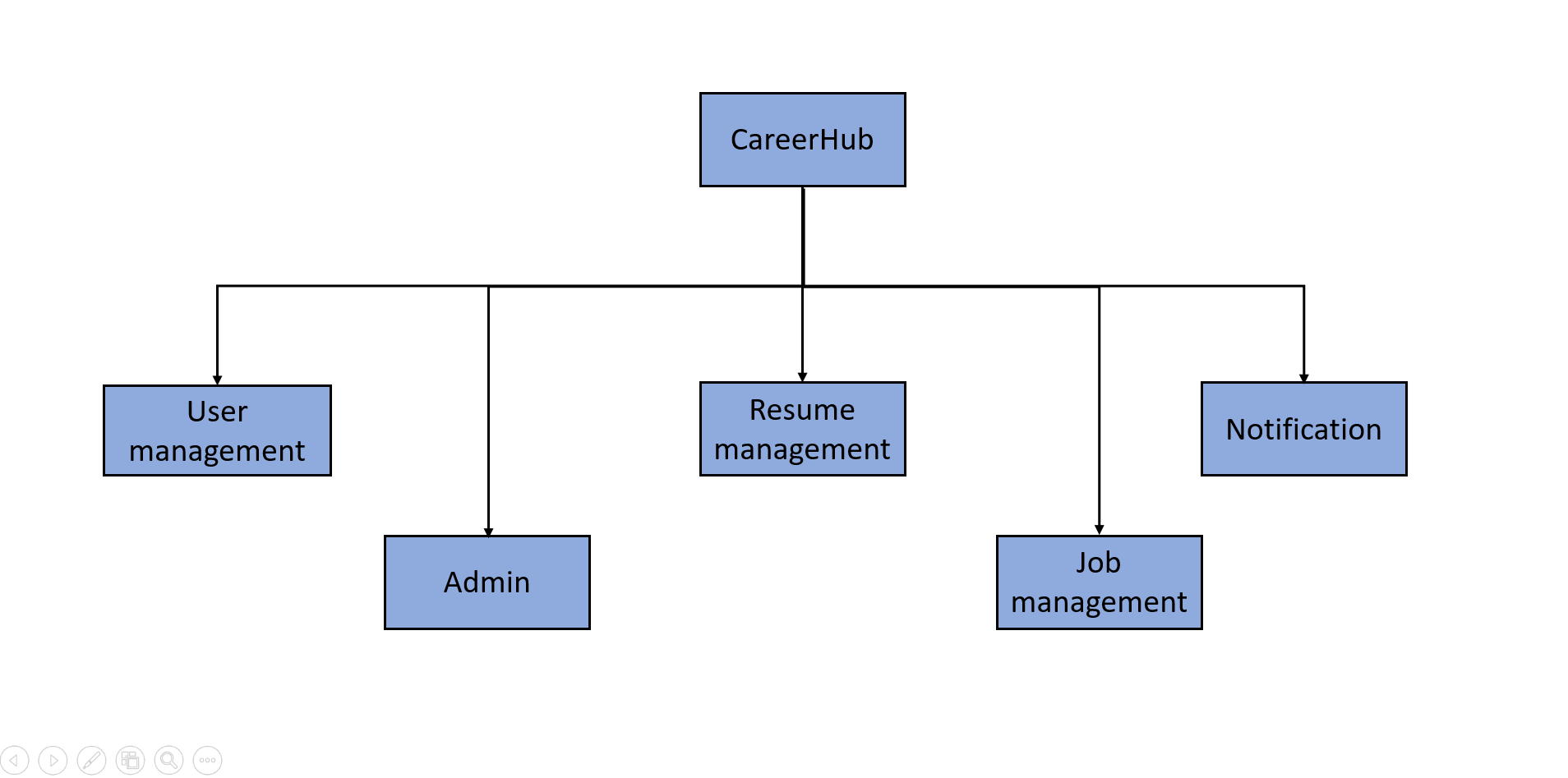
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**DFD Data Dictionary:**

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# 

# Module Diagram



**User Management:**

* Registration
* Login/Logout
* Profile management
  + View Profile
  + Edit Profile
* Change Password
* Forgot Password

**Admin:**

* Job management
  + View Job
  + Delete job
* View User
* Block/Unblock user

**Resume Management:**

* Upload Resume (PDF)
* View resume
* Delete resume
* Resume Builder
  + Create resume
  + Edit resume
  + Save resume

**Job Management:**

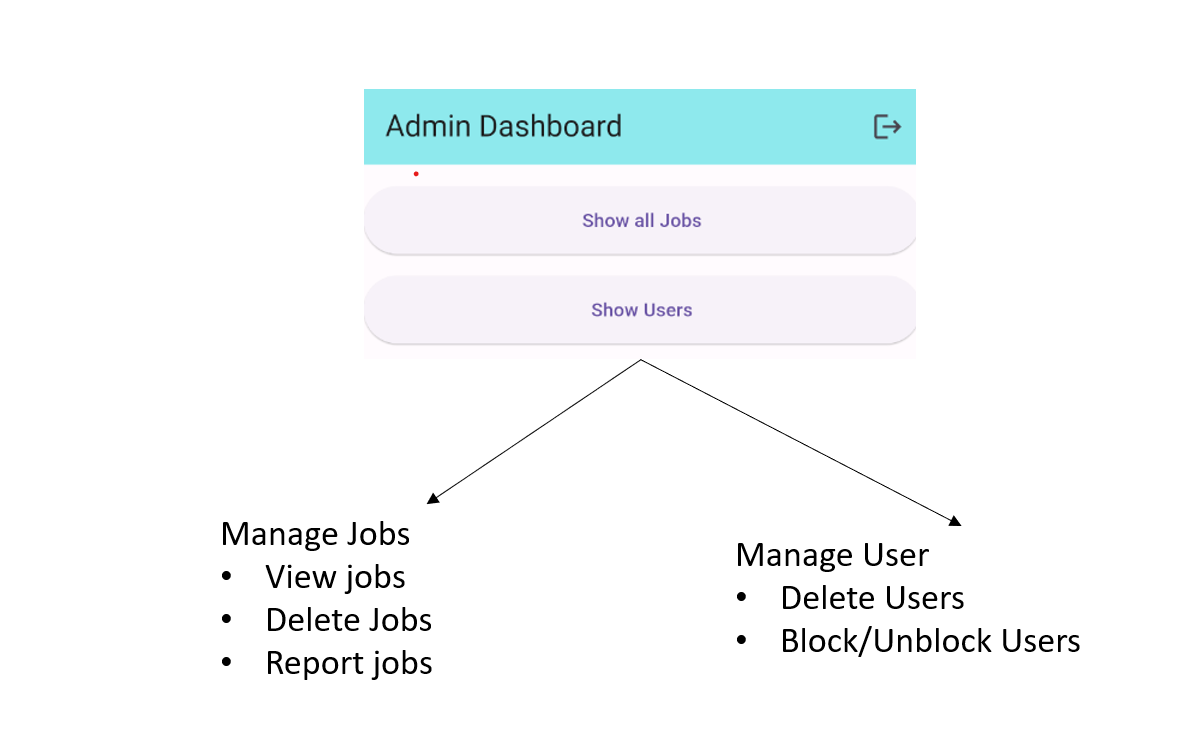
* Job posting service
  + Create job post
  + Edit post job
  + Delete post job
  + View all job posts (For Employers)
* Apply for job
* Job search service
  + Search jobs (filters: location, job title, salary, etc)
  + View job details
  + Bookmark job
  + View bookmark job

**Notification:**

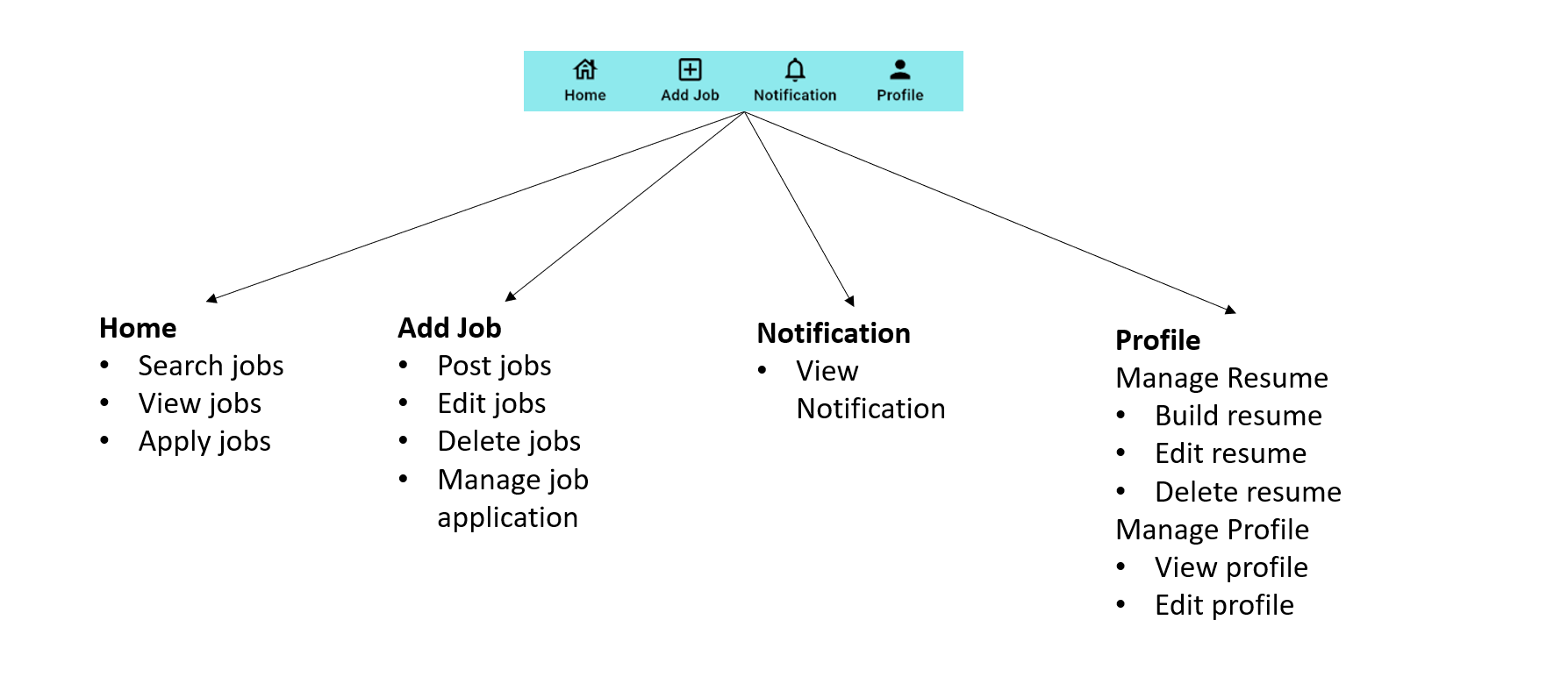
* Push notification for job alerts
* Application status updates

# Menu Diagram

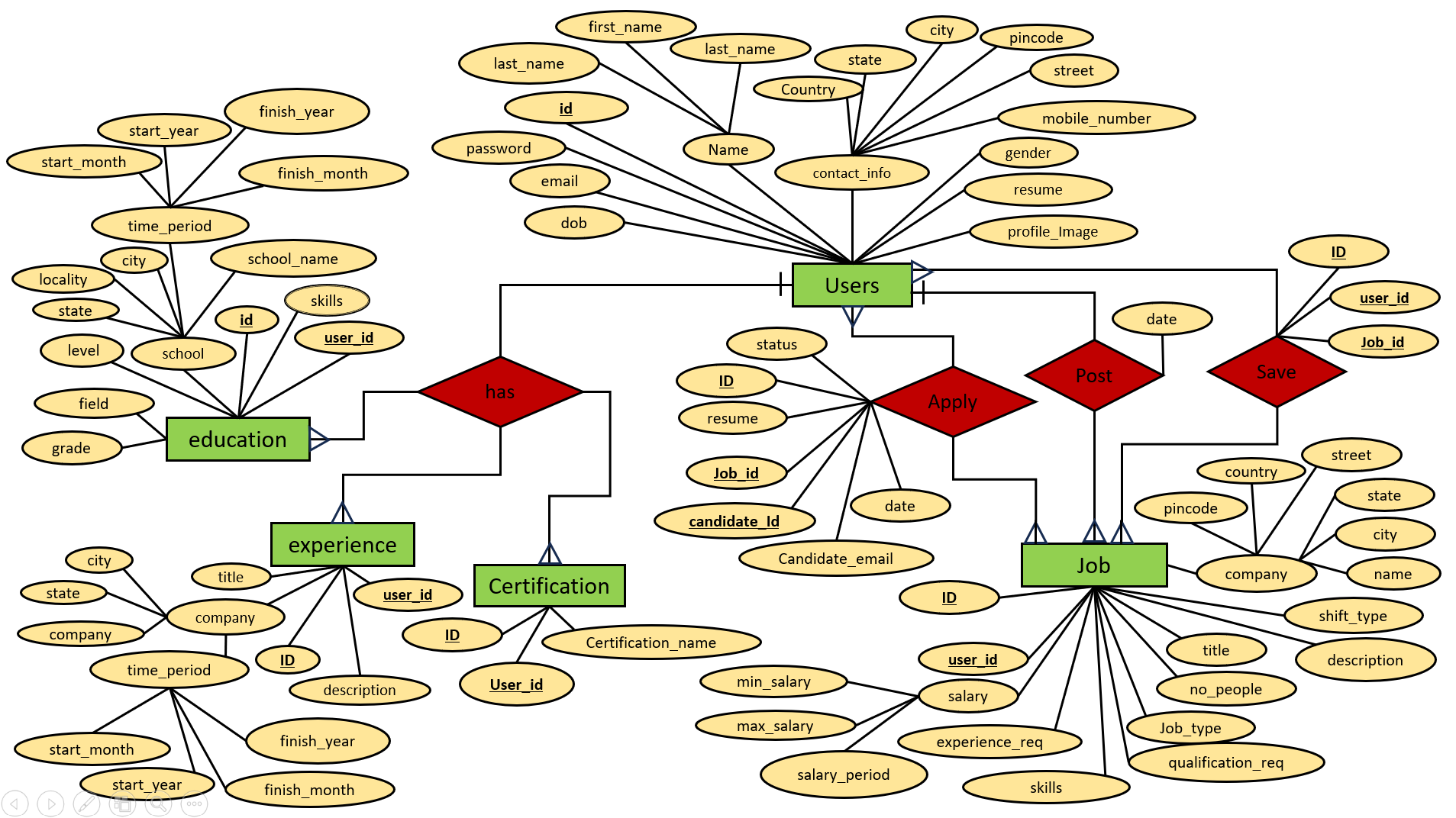
**Admin:**



**User:**

****

# Entity Relationship Diagram

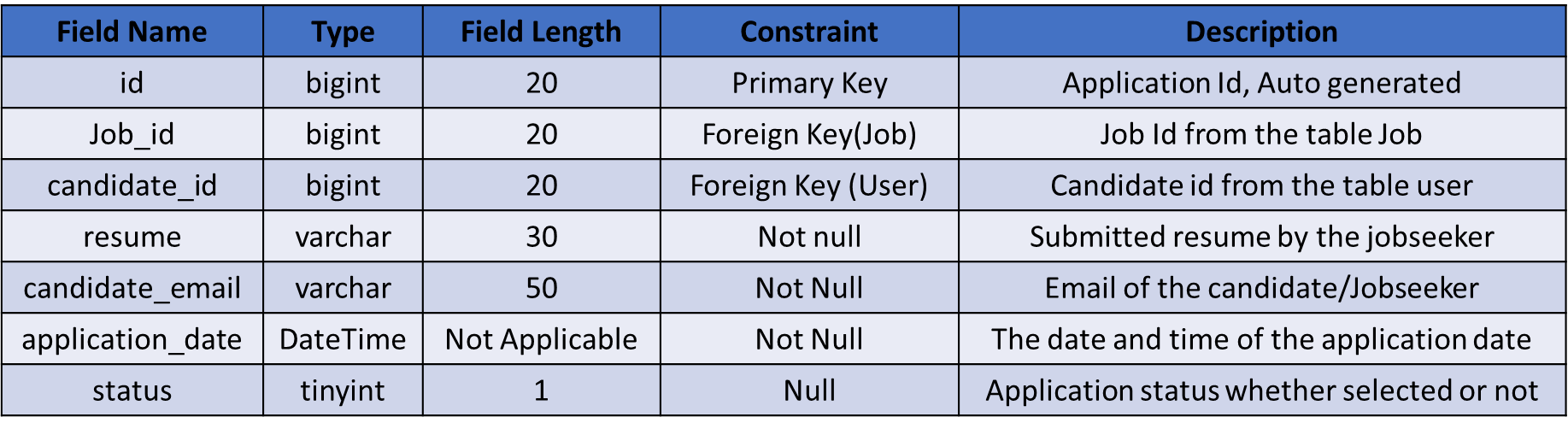


# Database Design and Data Dictionary

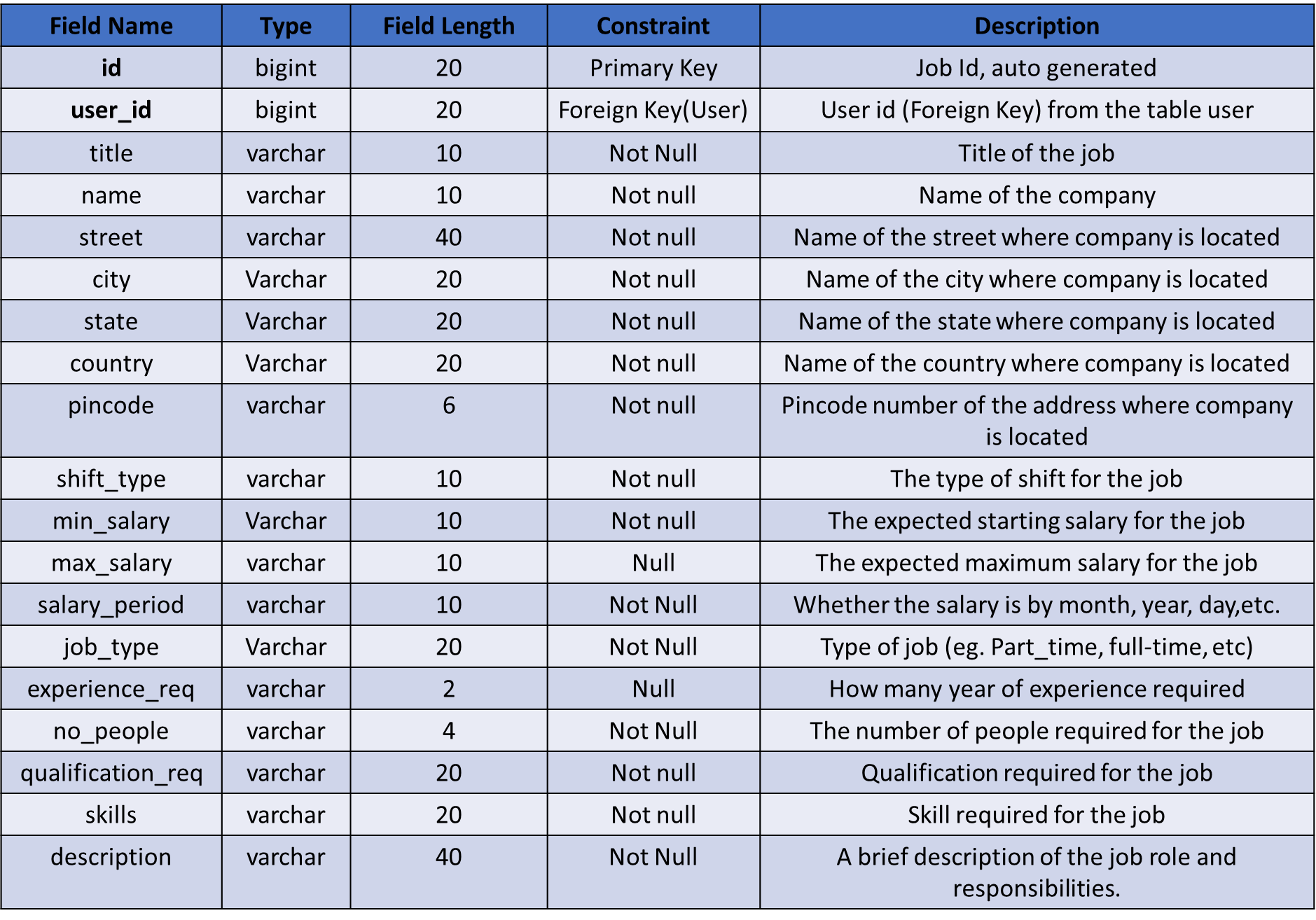
**User Table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Type** | **Field Length** | **Constraint** | **Description** |
| id | bigint | 20 | Primary Key | User Id, auto generated |
| email | varchar | 50 | Not Null | User Email registered Id |
| password | varchar | 50 | Not Null | Login Password |
| first\_name | varchar | 20 | Null | First name of the user |
| middle\_name | varchar | 20 | Null | Middle name of the user |
| last\_name | varchar | 20 | Null | Last name of the user |
| street | varchar | 20 | Null | Name of the street |
| city | varchar | 20 | Null | Name of the city |
| state | varchar | 20 | Null | Name of the state |
| country | varchar | 20 | Null | Name of the country |
| pincode | varchar | 6 | Null | Pin code number |
| mobile | varchar | 10 | Null | Mobile number of the user |
| dob | Date |  | Null | Date of birth of the user |
| gender | varchar | 6 | Null | The gender of the user |
| profile\_image | varchar | 50 | Null | User profile image file |
| resume | varchar | 50 | Null | The Resume file of the user |

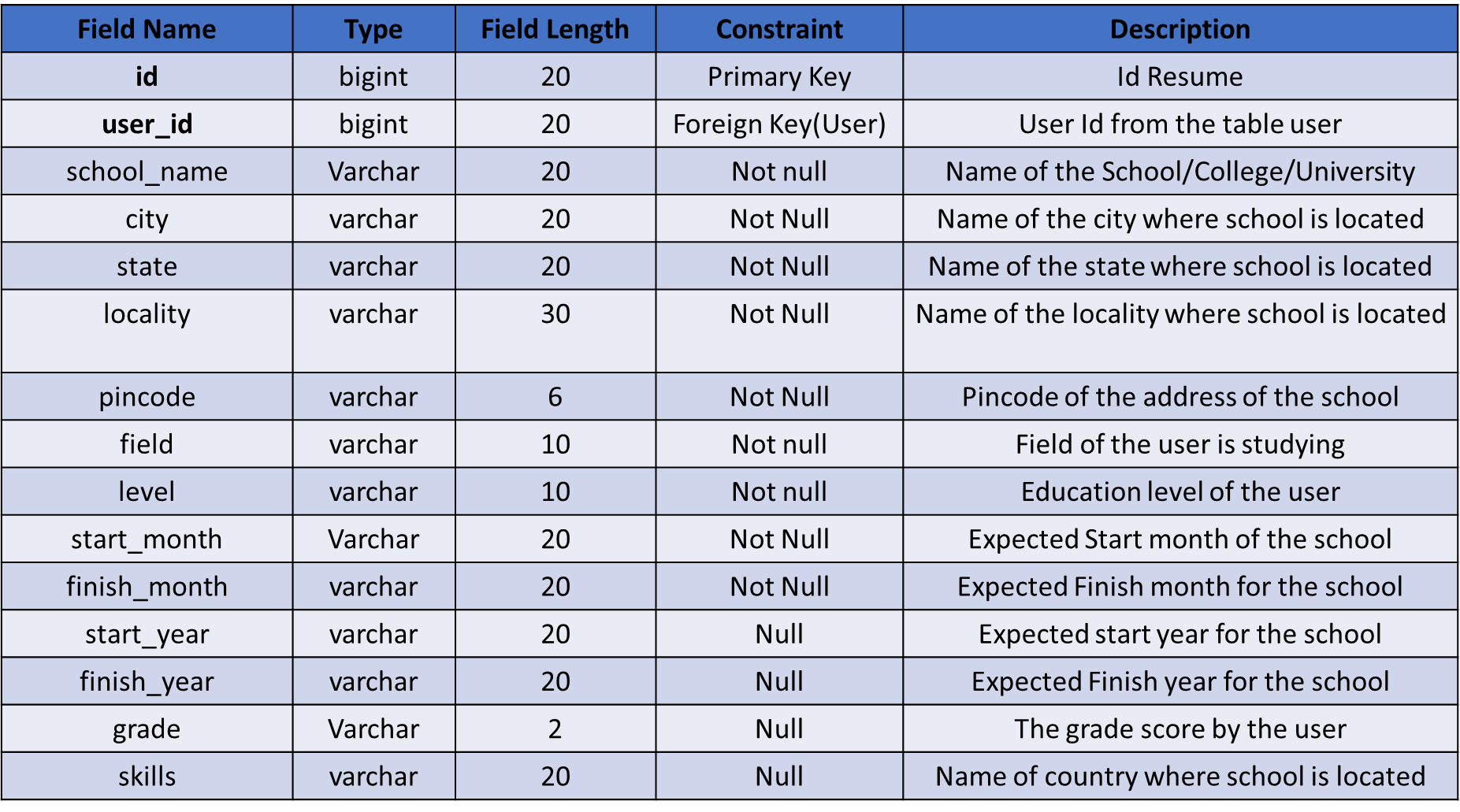
**Application\_Record Table:**

****

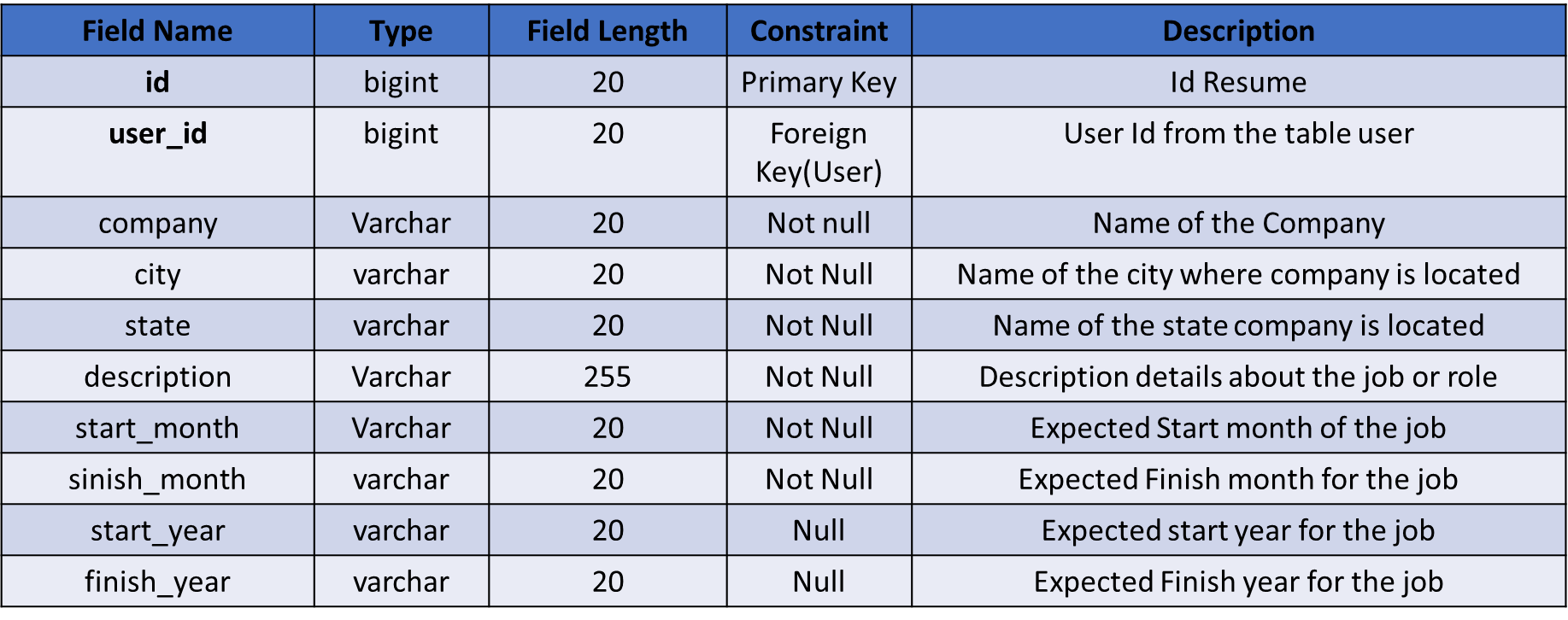
**Job Table:**



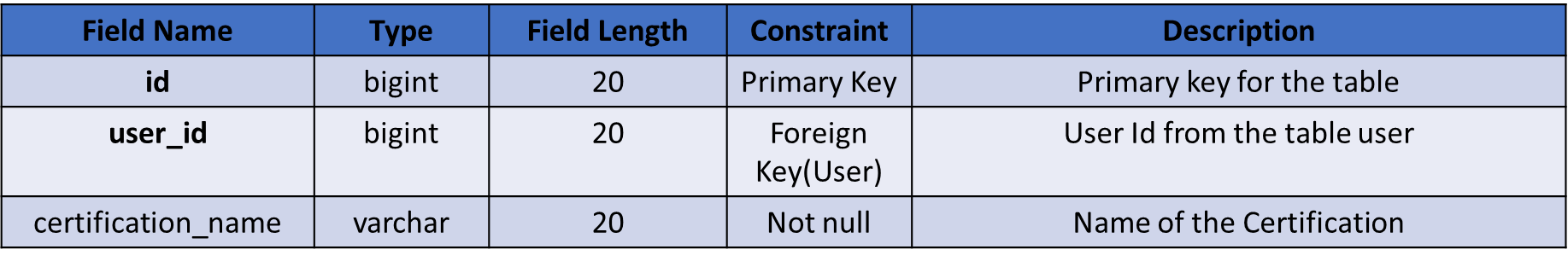
**Education Table:**



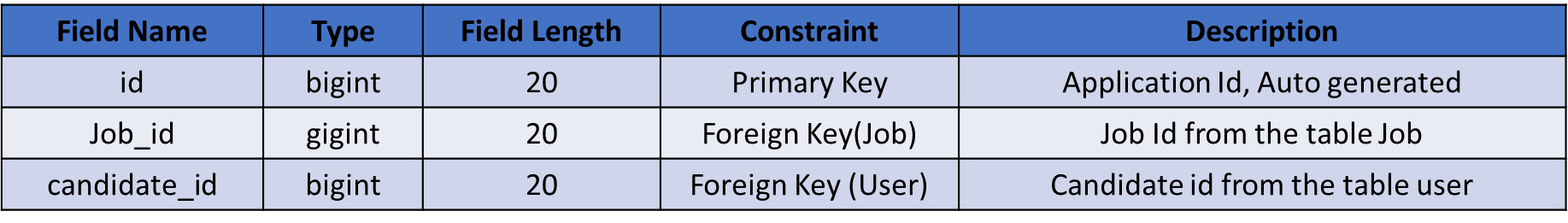
**Experience Table:**



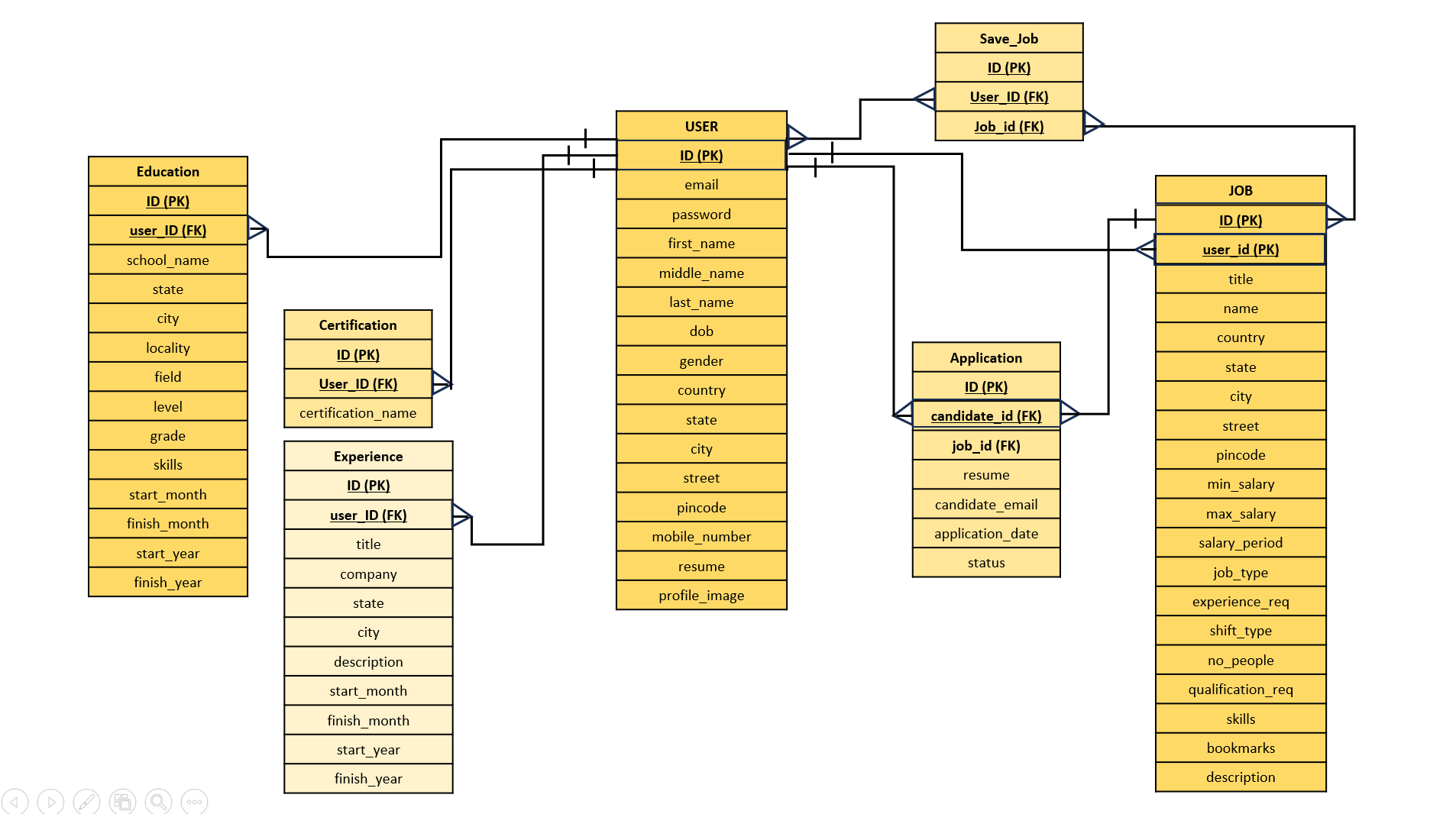
**Certification Table:**

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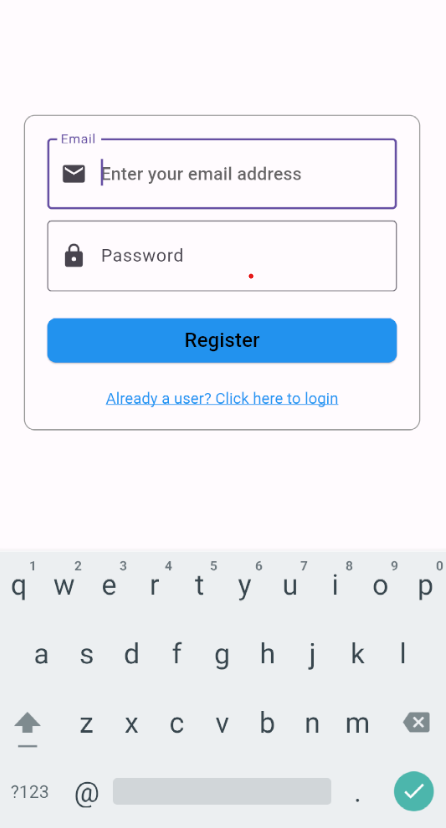
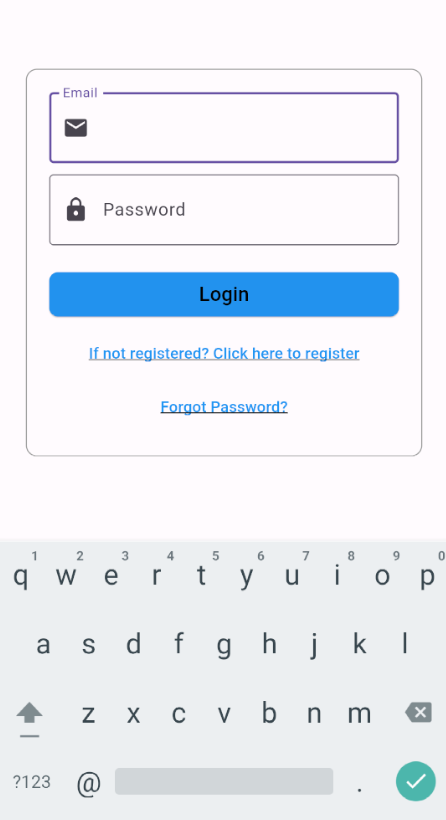
**Save\_Job Table:**

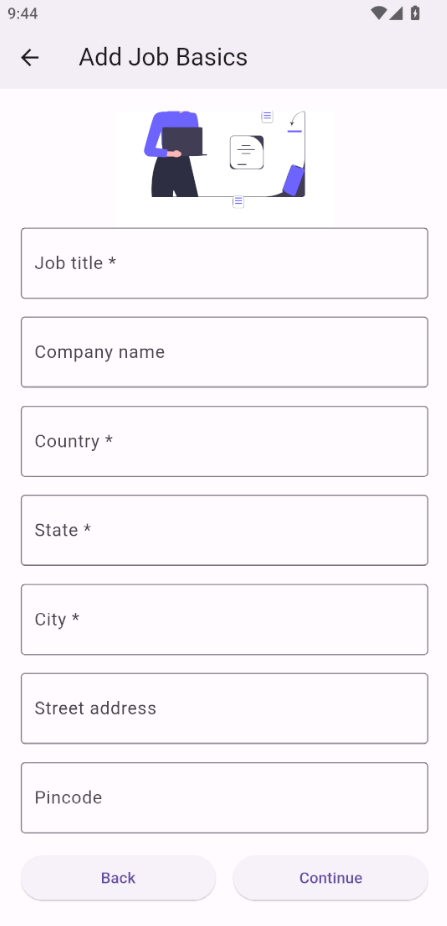
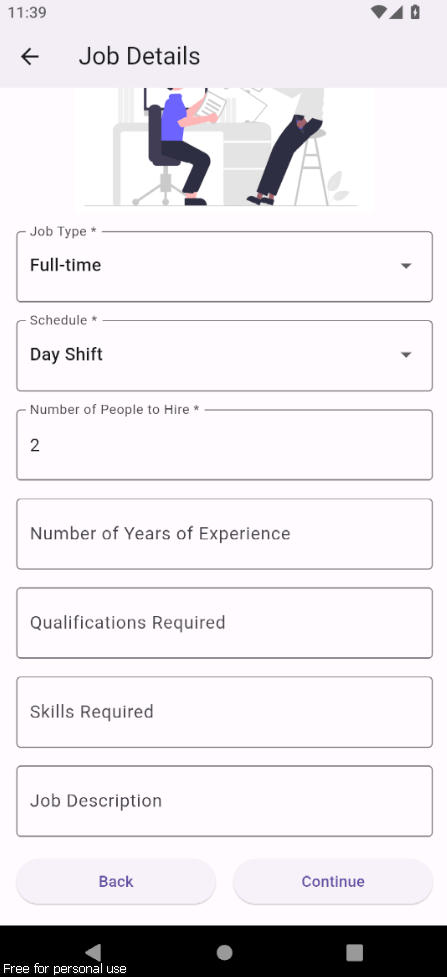
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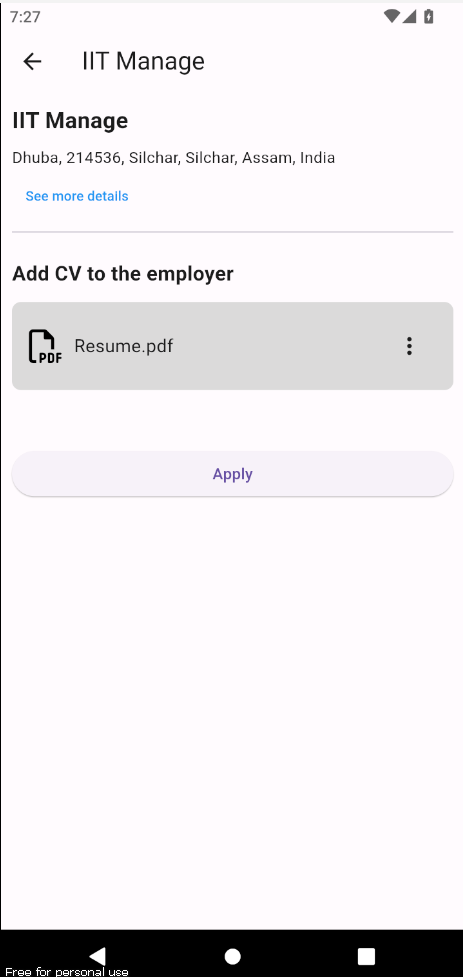
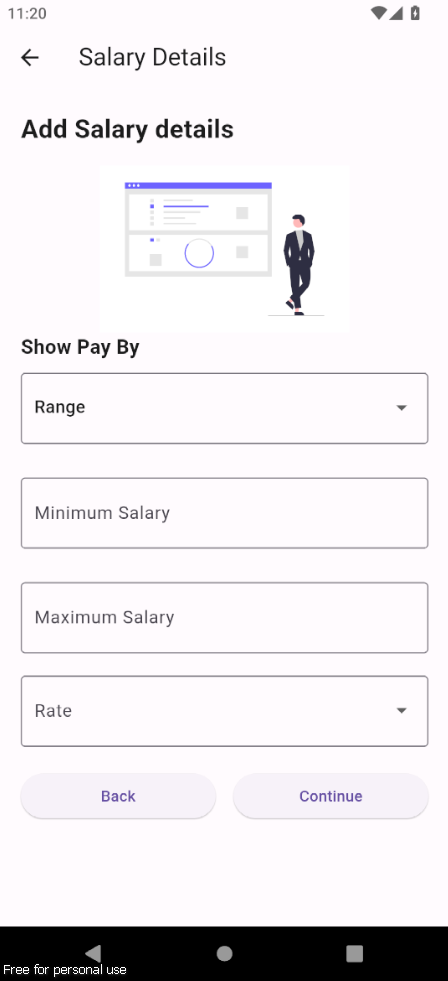
# Database Schema Design

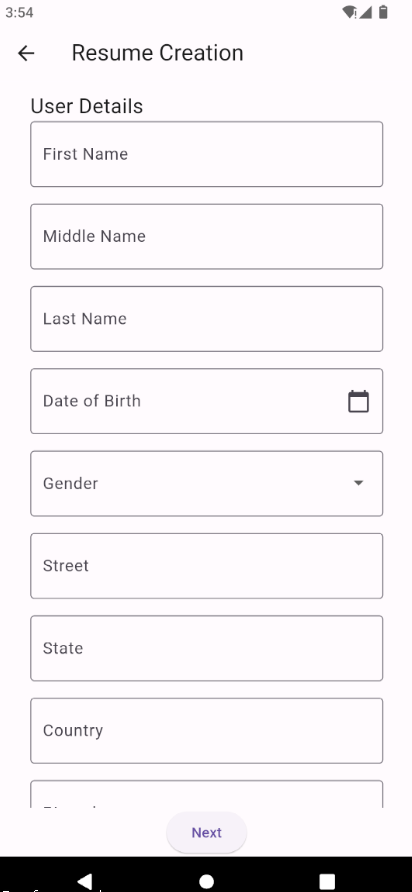
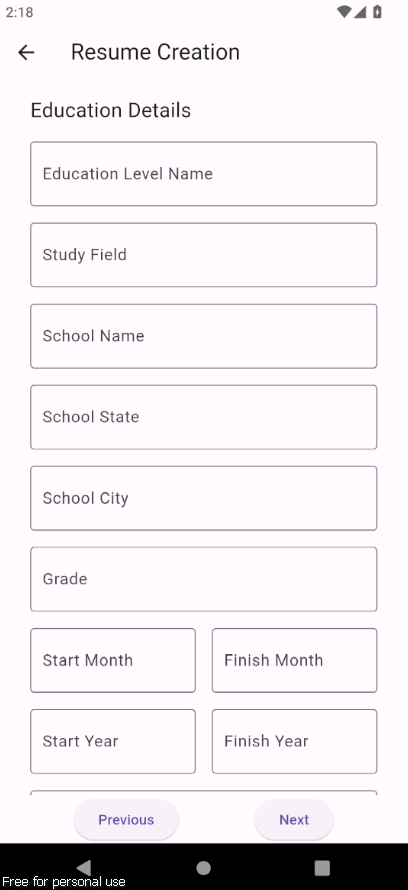


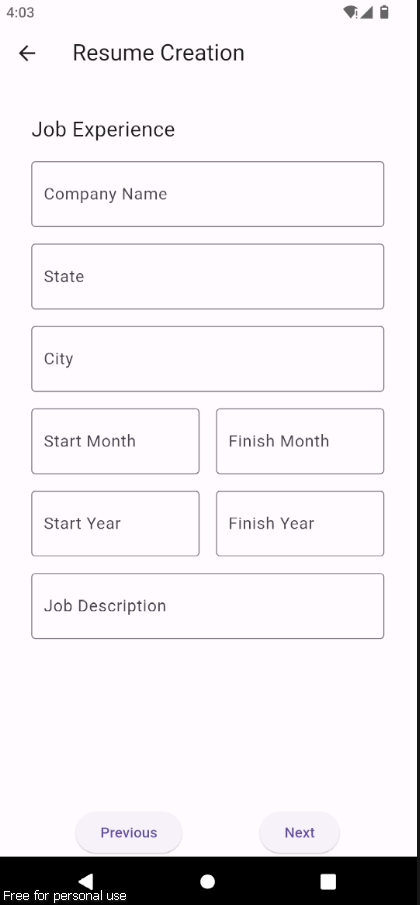
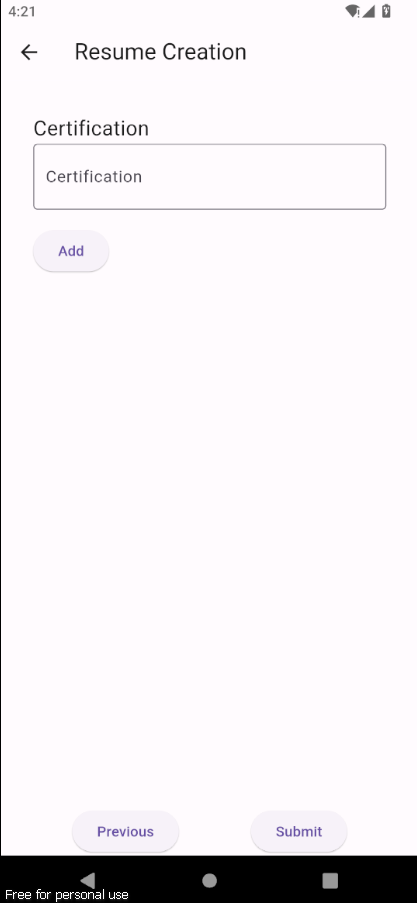
# Input/Output Screens

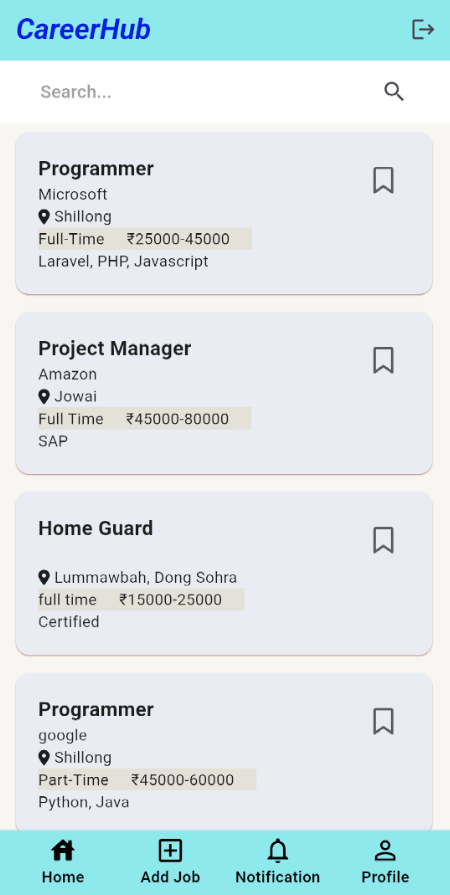
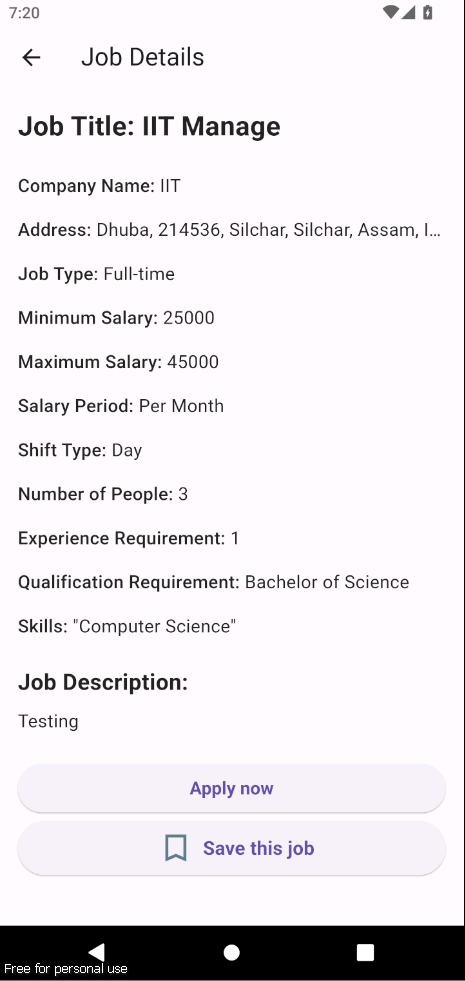


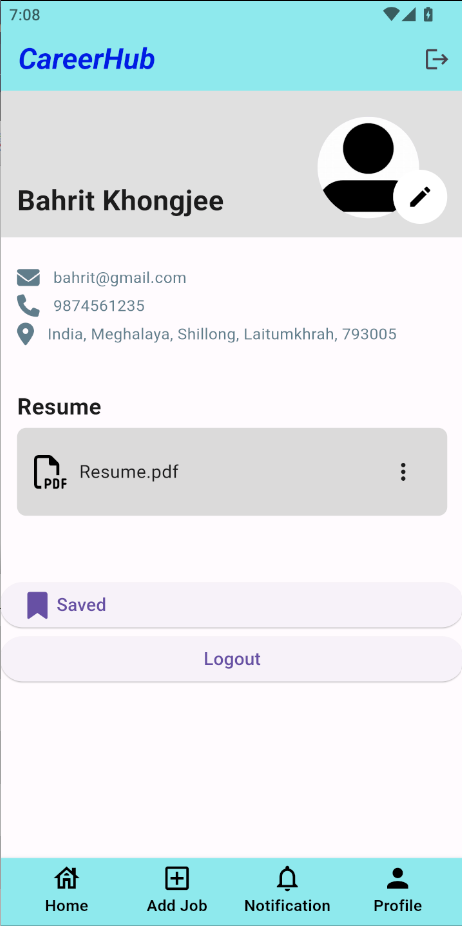
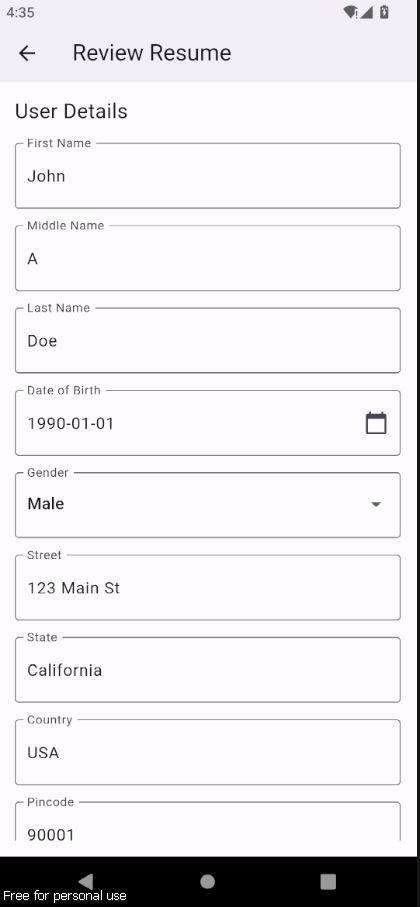


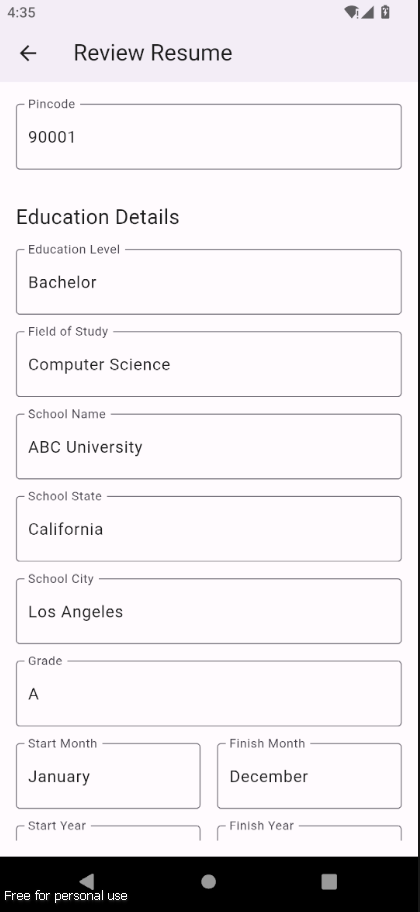
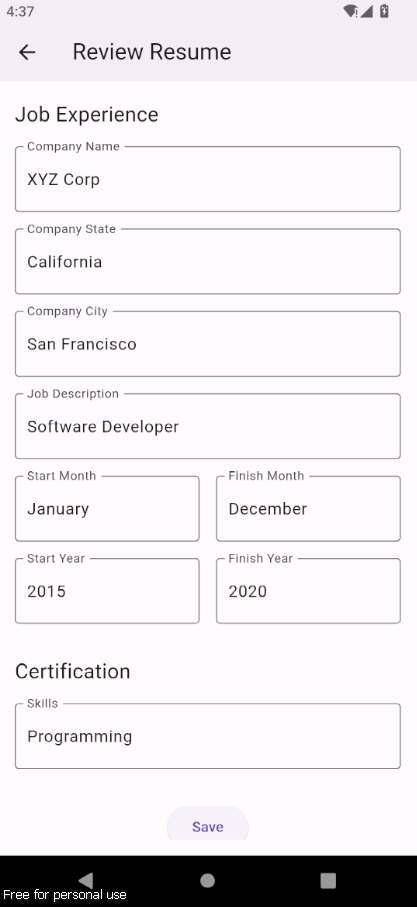


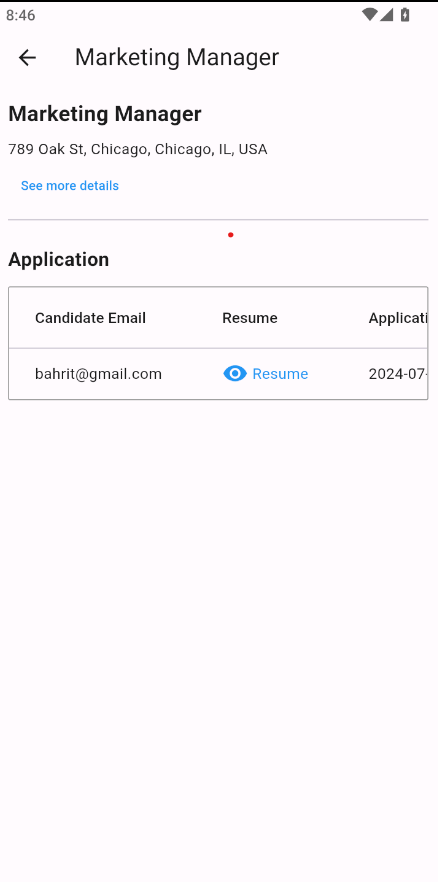
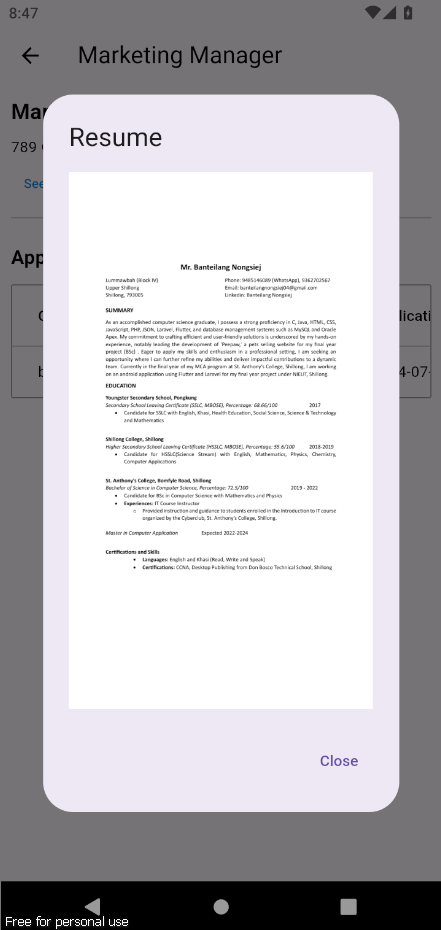










# Feasibility Study

#### 1. Technical Feasibility

**Technology Stack:**

* **Front-end:** Flutter for cross-platform mobile application development, providing a rich user interface and experience.
* **Back-end:** Laravel framework for server-side logic, ensuring a robust and scalable application.
* **Database:** MySQL for reliable and efficient data storage and management.
* **Other Tools:** Integration with third-party APIs (e.g., LinkedIn API) and packages (e.g., flutter\_pdfview for PDF viewing).

**Technical Requirements:**

* **Devices:** Daily use devices such as smartphones and tablets.
* **Connectivity:** Internet connection for accessing the app and its features.
* **Development Tools:** Modern development environments and tools (e.g., Android Studio, Visual Studio Code).
* **Cloud Services:** For deployment and hosting (e.g., AWS, Google Cloud).

**Assessment:** The selected technology stack is well-supported and widely used in the industry, ensuring the availability of resources and community support. The development team has the necessary expertise to implement and maintain the application, making the project technically feasible. No additional devices or specialized software are required beyond the typical tools and environments used for mobile application development.

#### 2. Economic Feasibility

**User Costs:**

* The application is free to use, making it accessible to all users without any financial barriers.
* Users do not need to purchase any additional software or hardware to use the application, as it runs on standard mobile devices and requires only an internet connection.

**Revenue Model:**

* Subscription fees for premium features and services.
* Advertisements and sponsored job postings from employers.
* Potential partnerships and integrations with other career services.

**Assessment:** The initial investment in development and infrastructure is manageable and justified by the projected revenue streams. The market demand for job portals and career services is high, and the platform's unique features and value propositions ensure a competitive edge. The economic feasibility is positive, indicating a sustainable business model without requiring additional financial investment from users.

#### 3. Behavioral Feasibility

**User Behavior:**

* **Job Seekers:** Motivated to find job opportunities, build resumes, and receive notifications about relevant job postings.
* **Employers:** Interested in posting job vacancies, managing applications, and accessing a pool of potential candidates.
* **Administrators:** Responsible for managing the platform, ensuring security, and providing a seamless user experience.

**User Experience:**

* The application is designed to be user-friendly and intuitive, eliminating the need for additional training.
* All features and processes are simple enough for users to learn and use effectively without extensive guidance.

**Assessment:** The platform is designed to align with the behavior and expectations of its users. The user-friendly interface, along with features tailored to the needs of job seekers and employers, ensures high user engagement and satisfaction. Users will not require additional training, as the app is intuitive and easy to navigate. The behavioral feasibility is strong, indicating that the application will be well-received by its target audience.

# Future Enhancements

**1. Email Notifications:**

* **Description:** Implement an automated email notification system that sends an email to the employer whenever a job seeker applies for a job they have posted.
* **Benefits:**
  + Keeps employers informed in real-time about new applications.
  + Enhances communication and engagement between employers and job seekers.
  + Increases the responsiveness of the recruitment process.

**2. Chat Box for Easy Communication:**

* **Description:** Introduce a chat feature within the application to facilitate direct communication between job seekers and employers.
* **Benefits:**
  + Allows for immediate interaction and clarification of job details.
  + Streamlines the interview and hiring process.
  + Enhances the user experience by providing a convenient platform for communication.
  + Reduces the need for external communication channels, keeping all recruitment-related discussions within the app.

**3. Integration with Professional Networks:**

* **Description:** Expand integration capabilities with professional networking sites like LinkedIn to allow users to import their profiles and apply with a single click.
* **Benefits:**
  + Simplifies the application process for job seekers.
  + Provides employers with comprehensive candidate profiles.
  + Increases the app’s appeal by leveraging existing professional networks.

**4. Advanced Analytics and Reporting:**

* **Description:** Develop advanced analytics and reporting tools for both job seekers and employers to track application statuses, job performance, and user engagement.
* **Benefits:**
  + Offers valuable insights into the job market trends.
  + Helps employers refine their recruitment strategies.
  + Empowers job seekers with data to improve their job search tactics.

**5. Mobile App Enhancements:**

* **Description:** Continuously improve the mobile app's functionality, performance, and user interface based on user feedback and technological advancements.
* **Benefits:**
  + Ensures a seamless and enjoyable user experience.
  + Keeps the app competitive in the market.
  + Adapts to new user needs and industry standards.

These enhancements aim to not only improve the current functionalities of CareerHub but also to provide additional value to both job seekers and employers, ensuring a comprehensive and efficient recruitment platform.

# Conclusion

CareerHub represents a significant step forward in the realm of job recruitment and career development. By integrating key features such as user-friendly registration and profile creation, advanced job search and filtering capabilities, and comprehensive tools for resume building, the platform effectively bridges the gap between job seekers and employers.

**Key Achievements:**

* **User-Centric Design:** CareerHub offers an intuitive interface that simplifies the job search and application process for users of all skill levels, ensuring a seamless experience from start to finish.
* **Employer Support:** With robust tools for job posting and application management, employers can efficiently manage their recruitment processes, saving time and resources.
* **Enhanced Communication:** Features like real-time notifications and the planned future enhancements of email notifications and a chat box will further streamline communication between job seekers and employers.
* **Security and Privacy:** The platform prioritizes the protection of user data, ensuring a secure environment for both personal information and professional interactions.

**Benefits:**

* **Accessibility:** CareerHub can be accessed from any device with an internet connection, making it easy for users to engage with the platform from anywhere at any time.
* **Cost-Effective:** The platform is free to use, eliminating financial barriers for users while providing significant value through its comprehensive feature set.
* **Future-Proof:** Planned enhancements, such as email notifications and a chat feature, will keep CareerHub at the forefront of the recruitment industry, continuously improving to meet the evolving needs of users.

CareerHub stands as a powerful tool for modern job recruitment, bringing together job seekers and employers in a dynamic, efficient, and user-friendly environment. Its continuous development and commitment to user satisfaction ensure that it will remain a valuable resource in the ever-changing job market. The platform not only meets current needs but also anticipates future trends, making it a cornerstone in the careers of countless individuals and the operations of numerous organizations.

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# Source Code