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Development of a mobile application for job search and recruitment

6B06102 — Software Engineering

Diploma project report

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CONTENTS

INTRODUCTION

The job search and recruitment process is a fundamental aspect of the modern labor market, directly influencing economic growth and the career opportunities of individuals. Traditional job search methods often suffer from inefficiency, lack of accessibility, and time-consuming processes. The advent of mobile technologies has revolutionized these processes, making it easier and more convenient for job seekers to find employment opportunities and for recruiters to identify suitable candidates.

This diploma project aims to address these challenges by developing a modern, accessible, and user-friendly mobile application for job search and recruitment. The application is designed to simplify the employment process for both job seekers and employers, facilitating effective communication and faster job placements.

The frontend part of this project was critical in ensuring a seamless and intuitive user experience. As the first point of interaction for users, the frontend plays a pivotal role in shaping their perception of the application. The user interface was designed to be clean, responsive, and engaging, catering to the diverse needs of job seekers and recruiters.

This report provides a comprehensive overview of the frontend development work completed for this project. It details the design approach, technology stack, user interface design, state management, and testing processes that were used to create a reliable and high-quality user experience. By focusing on both technical implementation and user-centered design principles, the frontend successfully bridges the gap between the application's functionality and user expectations.

The significance of this work extends beyond the development of a single application. It highlights the importance of frontend development in modern software engineering, demonstrating how a well-designed and implemented user interface can improve overall usability, increase user satisfaction, and contribute to the broader goals of digital innovation and economic growth.

1 Frontend Design and Implementation

1.1 Requirements and Design Approach
The frontend was designed to meet the following key requirements:

- **User-friendly and modern UI**: Providing a seamless experience for both job seekers and recruiters.
- **Responsiveness**: Ensuring usability across different devices and screen sizes.
- **Efficient navigation**: Delivering an intuitive experience with minimal learning curve for users.
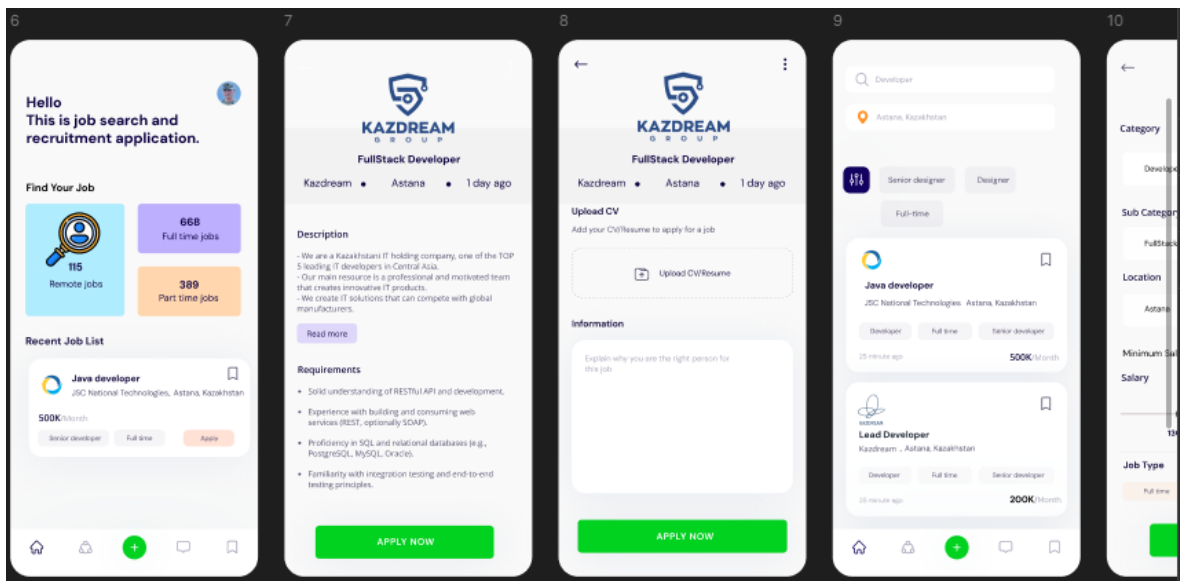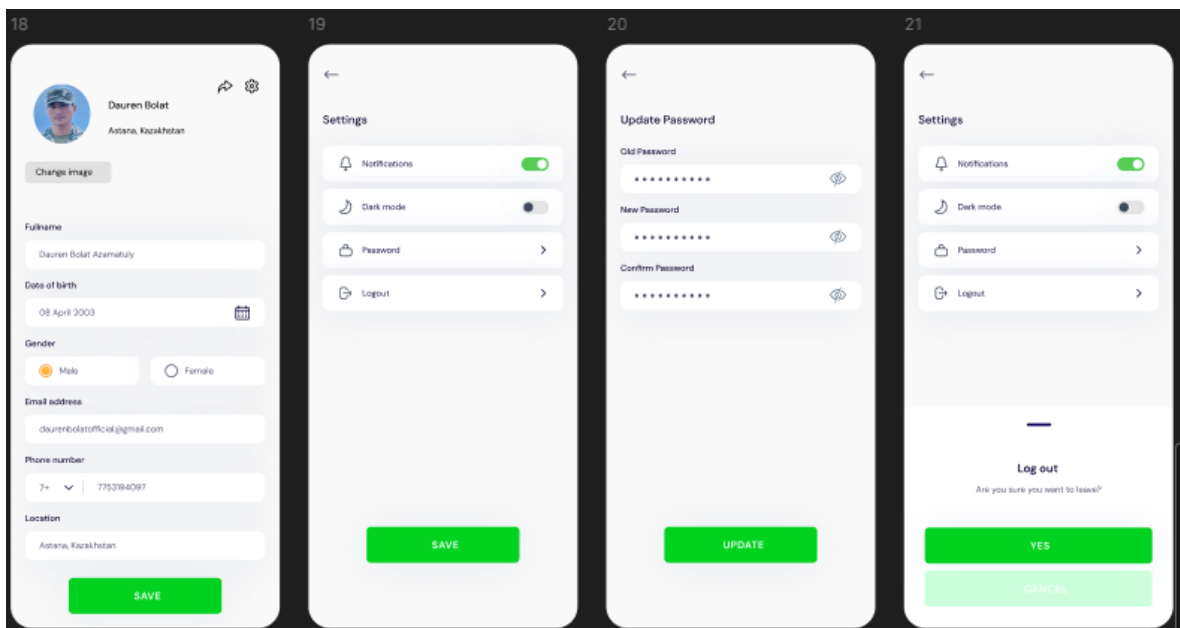

Figure 1: Home screen

Figure 2: Profile screen

1.2 Technology Stack and Tools
For the frontend development, the following technologies and tools were used:

- **Flutter**: For cross-platform mobile application development, supporting both iOS and Android devices.
- **Dart**: The programming language used in Flutter for implementing application logic and UI design.
- **Firebase Realtime Database / Firestore**: For managing and storing application data in the cloud.
- **Flutter Widgets**: For building reusable, modular, and visually appealing UI components.

These technologies were selected for their flexibility, extensive community support, and ability to deliver high-quality, scalable mobile applications.

1.3 UI/UX Design and Component Structure
The user interface was developed with a modular and component-based approach. Reusable components such as job listings, profile cards, and application forms were created to ensure consistency and maintainability.

- **Component hierarchy**: Screens (e.g., Home, Profile, Job Search) → Layout components → Reusable UI widgets (e.g., buttons, cards).
- **Design elements**: Consistent color schemes, clear typography, and accessible design principles to create an appealing and inclusive user experience.

1.4 Navigation and State Management
The application's navigation was structured to provide a clear and intuitive user journey:

- **Flutter Navigation**: Utilizing built-in Flutter navigation (e.g., Navigator and routes) to handle transitions between different screens.
- **State Management**: Using Flutter's built-in Provider package or stateful widgets for maintaining and updating UI state, ensuring data consistency and smooth interactions.

Figure 3: Class Diagram for Employee Recruitment

CONCLUSION

The frontend development work for this diploma project represents a significant contribution to creating a modern and accessible mobile application for job search and recruitment. The work has focused on developing a user-friendly, visually appealing, and functionally robust user interface that caters to the needs of both job seekers and recruiters.

A core aspect of the frontend development was to create an intuitive and efficient experience for users. By leveraging Flutter and Dart, the frontend achieved a high level of responsiveness and consistency across different devices. The use of modular components and a clear hierarchy ensured that the application is both scalable and maintainable, allowing for future enhancements and adaptations.

Testing and debugging were integral to this process, ensuring that the final product met high standards of reliability and performance. The integration of Flutter's powerful tools and thorough testing approaches resulted in a polished and user-friendly frontend that supports the core goals of the application.

This work underscores the vital role of frontend development in modern software engineering. It demonstrates how user-focused design and technical rigor can transform complex functionality into an engaging and accessible experience for users. By bridging the gap between backend processes and the needs of job seekers and recruiters, this frontend development effort contributes to the broader aim of supporting economic growth and digital transformation.

In conclusion, the frontend component of the job search and recruitment application stands as a testament to the power of modern software practices to address real-world challenges. It serves as a foundation for future innovations in the field of digital recruitment and provides a reliable, intuitive platform for connecting talent with opportunity.