ANKARA UNIVERSITY
COMPUTER ENGINEERING

Smart-Shopping

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January 2024

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1. INTRODUCTION

1.1. Problem Description

The Changing Landscape of Shopping and Tourism

In a constantly evolving world, the shopping and tourism industry is experiencing rapid changes. New trends and technologies are reshaping the way businesses engage with consumers and deliver experiences.

1. INTRODUCTION Cont.

1.2. Project Subject

Cross-platform application is built with the Flutter framework and seamlessly integrates with Firebase and NodeJS as its backend powerhouse.

The project's goal is to provide a simpler way of operating, flawlessly integrating store management, engaging users, and providing real-time exploration of potential offers.

2. LITERATURE

- The primary goal of our project is to enhance the efficiency of businesses, particularly those in the retail sector.
- Another goal is to make a user-friendly mobile application that simplifies the entire shopping experience for both the shop owners and consumers.
- Also, the project is not just about making shopping easier now but also preparing for future improvements.

3. MATERIAL and METHOD

3.1. Material

- Flutter:

1 Fast Development

Flutter enables rapid development with a hot reload feature, allowing for quick updates and modifications during the development process.

2 Beautiful UI

With its rich set of customizable widgets, Flutter allows the creation of stunning user interfaces that enhance the overall user experience.

3 Single Codebase

Developers can write a single codebase for both iOS and Android platforms, streamlining the development and maintenance process.

4 Community Support

Flutter has a vibrant and active developer community, ensuring access to a wealth of resources, libraries, and tools for app development.

3. MATERIAL and METHOD Cont.

- Firebase:

1 Real-Time Database

Firebase offers a real-time NoSQL database, ensuring instant storage and retrieval of user-generated content.

2 User Authentication

Integrate Firebase's user authentication services for secure and hassle-free user registration and login processes.

3 Hosting & Storage

Leverage Firebase's hosting and storage for deploying the application and managing media and static files.

3. MATERIAL and METHOD Cont.

- NodeJS:

1 Scalability

NodeJS, known for its event-driven architecture, enables the backend to handle a large number of concurrent connections and scale seamlessly.

2 Rich Ecosystem

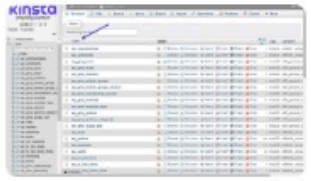
NodeJS has a vast ecosystem of libraries and modules, facilitating the development of sophisticated backend features and functionality.

3. MATERIAL and METHOD Cont.

- Data Storage:
- MYSQL:

MYSQL Database

Our backend relies on the powerful MYSQL database for secure and efficient data storage. MYSQL provides reliability, scalability, and extensive support for handling complex data operations.



Optimized Performance

With MYSQL, we ensure fast and responsive data retrieval and manipulation, enabling smooth user experiences and efficient backend operations.

Data Security

MYSQL offers robust security features and encryption mechanisms, ensuring the confidentiality and integrity of your valuable data.

Prisma ORM

Prisma is used as an Object-Relational Mapping (ORM) tool to provide a type-safe and scalable database access layer. It simplifies database operations and enhances the efficiency of data handling.

3. MATERIAL and METHOD Cont.

- **3.2. Method**

1

Figma Design

Create a visually appealing and user-friendly design using Figma, a powerful design tool.

2

Create NodeJS APIs

Develop robust and scalable backend APIs using NodeJS, which powers efficient data processing and management.

3

Build Flutter App

Utilize the Flutter framework to build a cross-platform mobile application with a native-like user interface and smooth performance.

3. MATERIAL and METHOD Cont.

- **Authentication**

- The authentication process in the app was constructed by Firebase. The procedure starts on the app's first page where the users encounter a login interface featuring a text-field for their phone number, a button to initiate login, and an option to sign up.

- With Firebase OTP, users enter their phone number to initiate login. Firebase Authentication then sends a One-Time Password (OTP) via SMS, adding an extra layer of security. Users input the received code on the OTP entry page, and upon verification, they gain access to the application.

3. MATERIAL and METHOD Cont.

- **Shops Page**

1

Shop Management Overview

Provides an overview of all the shops managed from the business owner's account

2

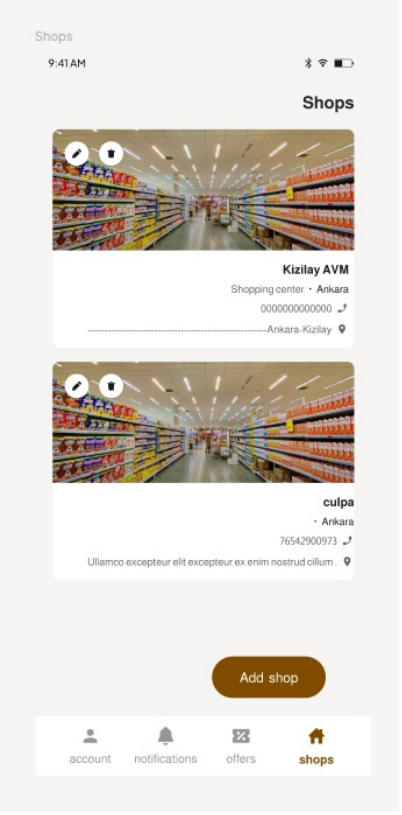
Add New Shop

The business owner can easily add a new shop by pressing the "Add New Shop" button.

3

Edit and Delete Shops

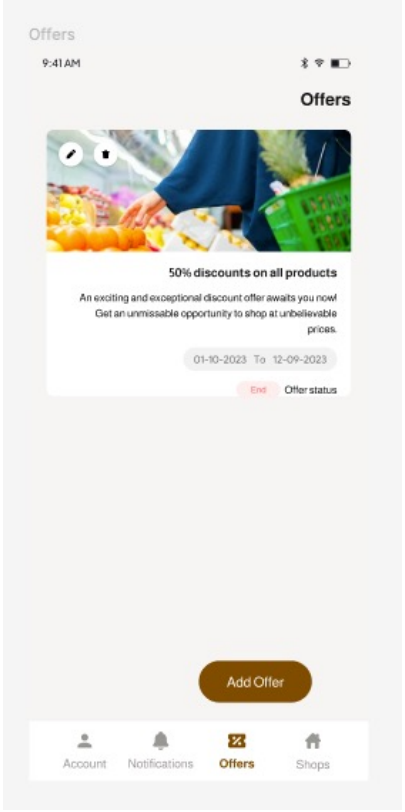
For existing shops, the business owner can initiate edits to update information or make corrections.



3. MATERIAL and METHOD Cont.

- **Offers Page**

1. **Create and Manage Offers**
   Control center for creating and managing promotions and offers.
2. **Offer Details**
   Provides specific offer details, including its description and relevant dates.



3. MATERIAL and METHOD Cont.

- **Notifications Page**

1

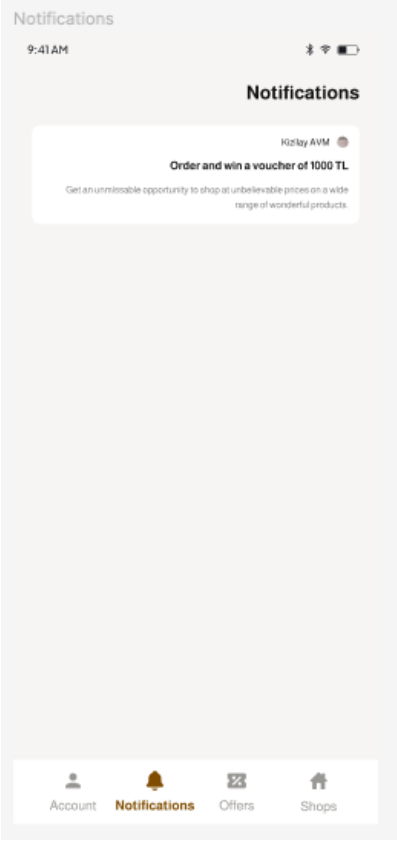
Notifications Overview

Keeps a history of notifications sent by the business owner to customers.

2

Sending Notifications

Compose and send notifications.



3. MATERIAL and METHOD Cont.

- **Account Page**

1

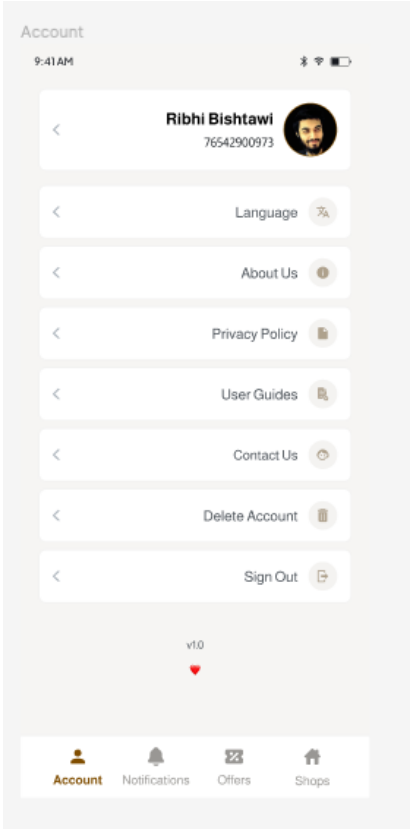
Account Management

Enables the business owner to manage many settings, such as personal details.

2

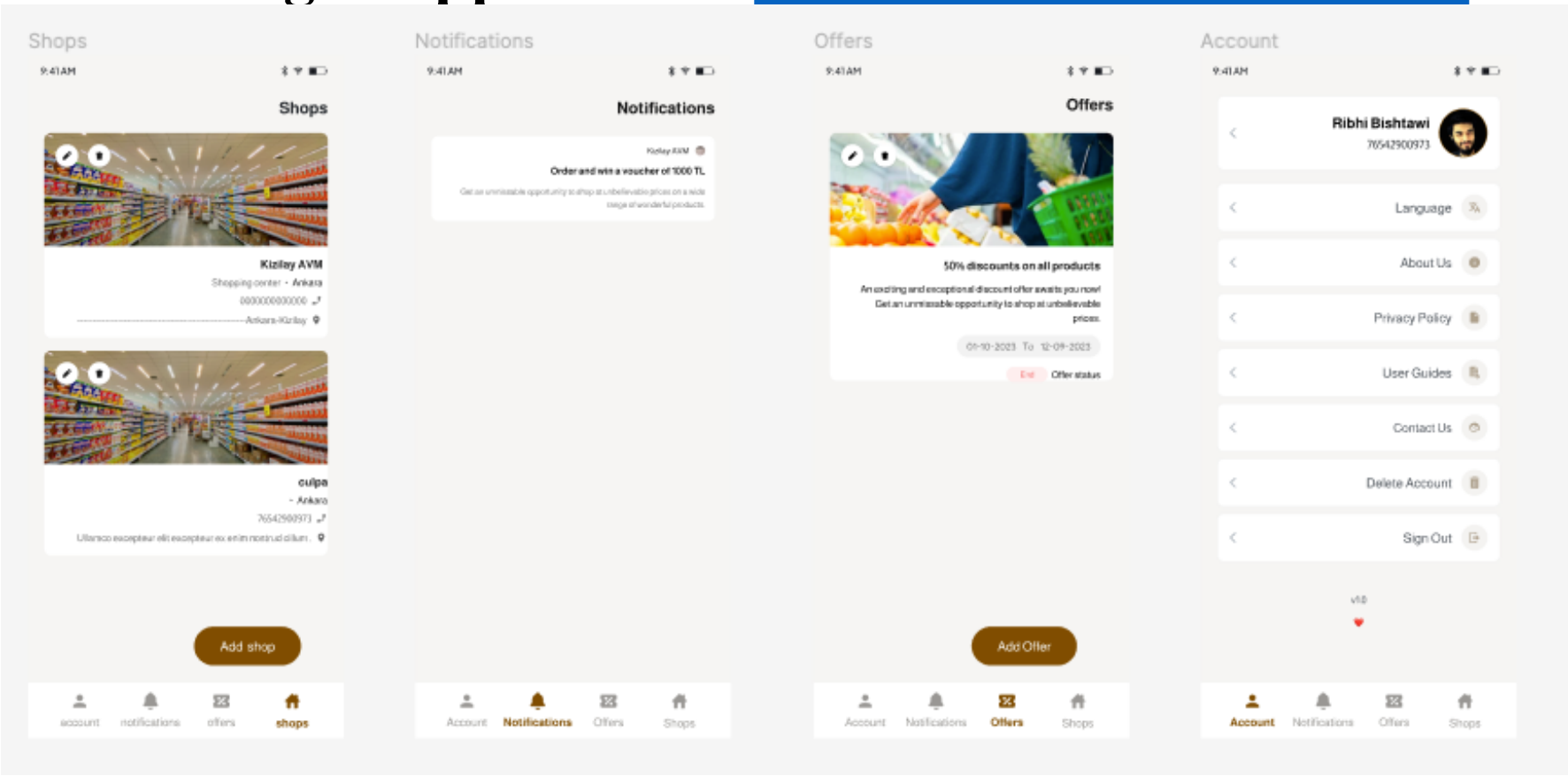
Application Settings

Customize application settings, such as language preferences.



4. APPLICATION

- **Manager Application: https://github.com/ribhy-**



5. CONCLUSION

Cross-Platform	Efficient Development	Scalable Backend
Enhanced User Reach	Shopping Experience	Future Improvements

RESOURCES

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