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Akshay Patra

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Abstract: *"Akshay Patra" is a pioneering Android application developed with Flutter, designed to tackle food insecurity by connecting food donors with homeless individuals in need.The app enables users to post real-time updates about the locations and number of needy individuals, including geographical coordinates, on a public timeline.This dual-purpose platform allows users to share information about available leftover food and those seeking meals, facilitating easy access through a map-based interface.*
To ensure efficient management and security, an admin panel built with Code Igniter will oversee user interactions and monitor posts.By leveraging technology, "Akshay Patra" aims to reduce food waste while providing a vital resource for those facing hunger, creating a community-driven approach to addressing food insecurity.

Keywords: Food insecurity, Homeless, Needy individuals, Food donation, Akshay patra, Flutter, Android application, Donors, Food wastage reduction, Technology for social good, Code Igniter, Real-Time updates, Admin panel, Food availability, Geographical coordinates, Latitude and longitude, User management, Location-based research

I. INTRODUCTION

The "Akshay Patra" project is an innovative response to the pressing issue of food insecurity, utilizing technology to forge real-time connections between food donors and those in need. Drawing inspiration from the mythical vessel that endlessly provides sustenance, this initiative aims to minimize food waste while simultaneously addressing hunger. By creating a streamlined platform through a mobile application, "Akshay Patra" enables restaurants, caterers, and individuals to donate surplus food directly to homeless individuals and families struggling to access nutritious meals.

At the heart of the project is its user-friendly mobile application, designed to facilitate the efficient distribution of excess food. The app employs geolocation services to pinpoint nearby food donations, allowing users to quickly find and access available resources. This immediacy not only enhances the likelihood that surplus food will be utilized before it spoils, but also fosters a sense of community as individuals come together to support one another. By promoting the sharing of excess food, "Akshay Patra" encourages a collaborative approach to tackling food waste and hunger.

Furthermore, the success of "Akshay Patra" relies on strong community engagement and participation. Local volunteers, non-governmental organizations (NGOs), and businesses play a vital role in ensuring the system operates smoothly. Their involvement not only helps to disseminate information about available food resources but also strengthens the social fabric by creating networks of support. Through outreach and education, the project aims to raise awareness about food waste and inspire collective action, ultimately leading to a more compassionate society.

In addition to addressing immediate food needs, "Akshay Patra" contributes to broader efforts aimed at building a sustainable food system. By redirecting surplus food to those in need, the initiative not only alleviates hunger but also mitigates the environmental impact of food waste. As communities increasingly recognize the importance of reducing waste and supporting one another, "Akshay Patra" stands as a model for leveraging technology to create meaningful change. Through its innovative approach, the project envisions a future where no one goes hungry and where food resources are utilized to their fullest potential.

Objectives

- **Enhance User Engagement:** Provide easy access to foundation initiatives and meal distribution information.
- **Streamline Donations:** Facilitate a user-friendly donation process with multiple payment options.

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- **Volunteer Management:** Allow users to sign up for volunteering opportunities and receive local notifications.
- **Educational Content:** Offer resources on nutrition and food security to raise awareness.
- **User Feedback:** Create a platform for users to share experiences and suggest improvements.
- **Real-Time Notifications:** Implement push notifications for important updates and campaigns.

Analysis and Feasibility

The **"Akshay Patra"** project is an innovative solution to food insecurity, leveraging technology to connect food donors with homeless individuals in real time. A thorough analysis of the system's feasibility is essential to evaluate its viability in terms of **technical, operational, economic, and legal** aspects.

Technical Feasibility

The application is being developed with Flutter for cross-platform mobile use and CodeIgniter for the admin panel, ensuring technical feasibility. Flutter enables rapid development with a single codebase for Android and iOS, while CodeIgniter offers a lightweight backend. Real-time updates on food availability will be managed using Firebase, PostgreSQL, or MySQL, with Google Maps API for geolocation and Firebase Cloud Messaging for user alerts. Scalability is supported through cloud services like AWS or Firebase. However, challenges include GPS accuracy, network dependency for real-time functionality, and data privacy concerns.

Operational Feasibility

An examination of operational feasibility determines if the system functions as intended within the conditions set out for the system. This is done by evaluating if the users, food donors and the administrator can interact effectively. A fully working mobile application is important for all users, including the non-tech savvy. Community participation of volunteers from NGOs and local businesses is key to success. A strong admin panel will help solve user management problems, give better help desk support, and other administrative functionalities, whereas logistics need timely messages and tracking of users' locations. The main difficulties are the level of user participation, waiting time, and preventing abuse. Successful user participation monitoring and tracking excessive participation misuse, along with community engagement initiative, ensures the operational feasibility of the project.

Resource Feasibility

Resource feasibility analyzes the availability of key resources required for the project to be a success, including competent developers and personnel for community outreach. This entails checking on technological infrastructure, cloud services, and development tools for support in real-time operations. Financial resources are budgeted for development, maintenance, and marketing, while possible funding sources should be identified. It can enhance the effectiveness of the project through realistic timelines in development and involving local volunteers, NGOs, and businesses. The bottom line is that careful planning of these resources is critical to successful implementation.

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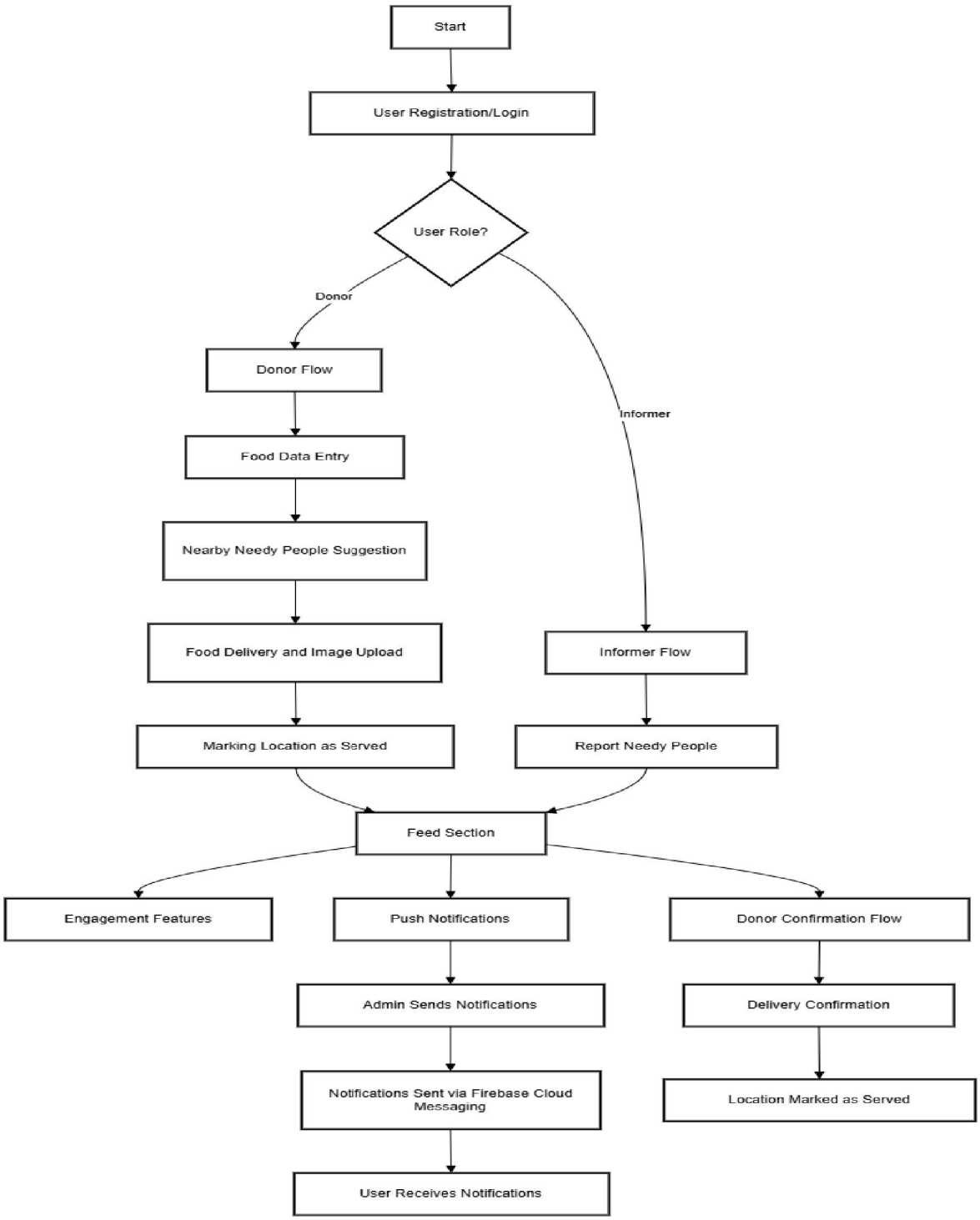
Flowchart:



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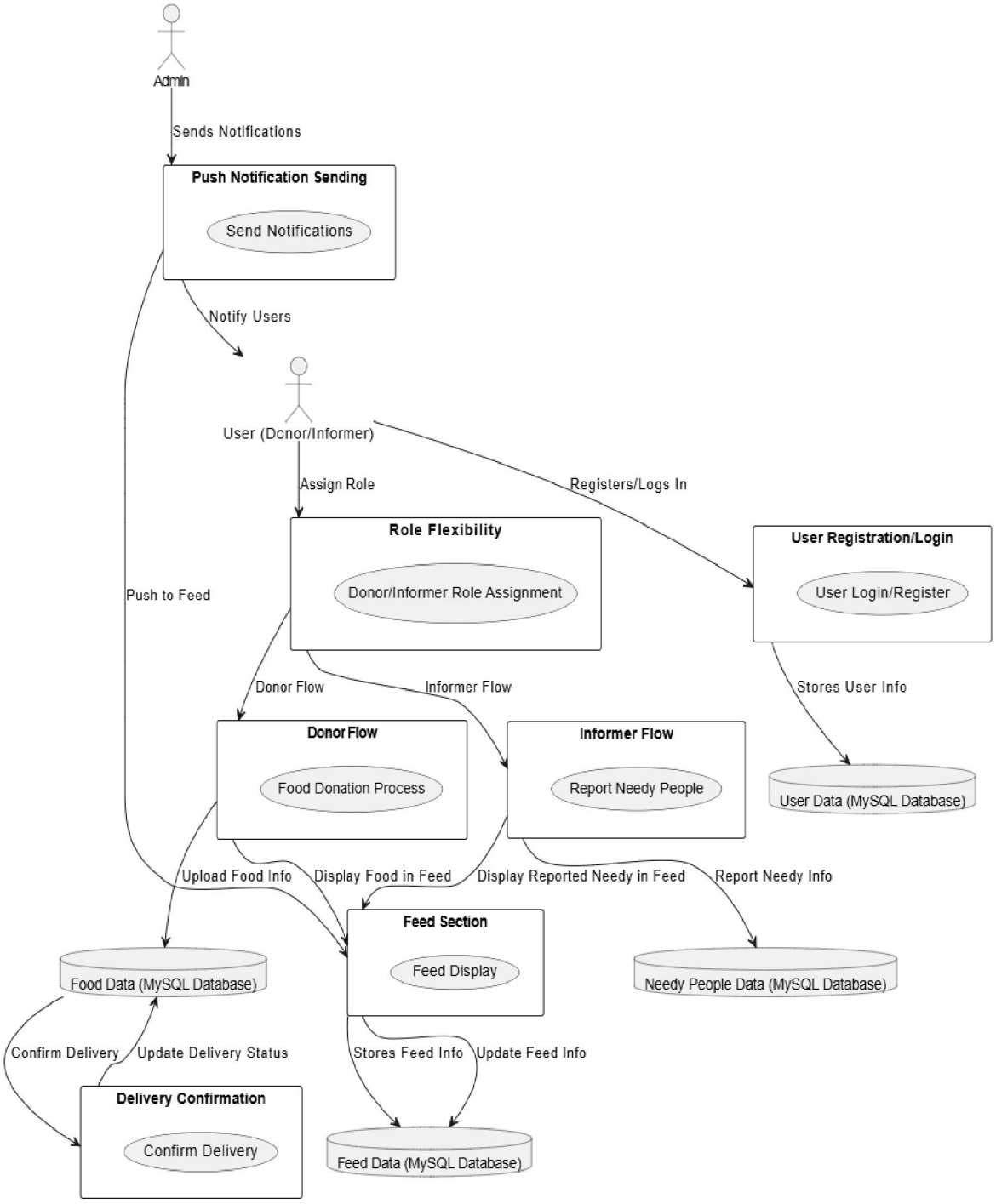
DFD DIAGRAM:



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Advantages of the proposed application

- Geo-location service: There is use of GPS to enable users quickly find donations around with needy people.
- Volunteering roles: There are volunteering roles for community participation through volunteering roles enrollment.
- Push notifications: Informs the users of new donations and important events in real time.4. Diverse Donation Channels: Food can be donated through several channels.
- Insights Based on Data: Gathering information on the food requirements and donations increases the effectiveness of services with time.
- Local Business Support: Encourages restaurants and caterers, forming partnerships that benefit the community.

Applications

- Encourage users to connect for smooth food sharing and community awareness.
- Set up notifications to alert users of food offerings in their proximity.
- Allow engagement with event dates and volunteer users to support local initiatives.
- Give guides and recipes as resources to increase healthy eating and reduce waste.
- Rapidly provide food donation and other resources at the site of a disaster or emergency.

Future scope of the project

- **Food sourcing and donations**: The digital platform will help streamline the donor and Akshay Patra network to make the collection and distribution of food real-time.
- **Demand prediction**: Using predictive analytics will optimize food sourcing and reduce waste as the actual demand is foreseen with data.
- **Partnership with the government and NGOs:** This can improve resource sharing, broaden the impact of the project, and make a comprehensive approach to solving hunger.
- **Quality Tracking:** Developing a quality assurance system ensures that beneficiaries receive safe and nutritious food, which is crucial for maintaining trust and effectiveness.
- **Beneficiary Access**: Creating mobile apps or web portals for beneficiaries promotes transparency, accountability, and responsiveness, allowing for better community engagement and feedback.

II. CONCLUSION

In conclusion, the "Akshay Patra" project is a very transformative approach towards addressing food insecurity among the homeless population. This project utilizes technology to connect food donors with people in need while promoting real-time communication and community involvement, and effectively reducing food waste. User-friendly mobile applications will enhance the efficiency of food delivery and engagement of users with the project, leading to measurable improvements in the quality of life for homeless individuals. The "Akshay Patra" initiative stands to make a meaningful difference in the fight against food insecurity through its innovative strategies, thereby building stronger, more resilient communities.

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We required your criticism greatly in designing our application better so that people with this interface become easy-going as well as productive.

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Finally, our heartfelt thanks go to our families for their unwavering support, patience, and motivation, which inspired us to stay focused and committed throughout this journey. This project would not have been possible with all their contributions and belief in us, and we are deeply grateful for the help we received in many ways. Together, these collective efforts enable us to create a system that would focus on the safety and well-being of girls in the hostels. We can't wait to see the impact it's going to bring into the community. Thank you one more time for your support!

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