

ECHOThread: A SMART APPROACH TO CLOTHING REUSE AND DONATION

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Keywords:

Cloth Donation, Sustainability, Flutter App, Firebase, Textile Waste, NGO Platform.

Introduction:

1. In modern society, clothing waste has become a major environmental issue due to fast fashion trends. Many usable clothes are discarded while a large population still lacks access to basic clothing.
2. To address this issue, EchoThread is developed as a mobile application using Flutter and Firebase. The application provides a platform where users can donate unused clothes and connect with individuals or organizations in need. The system ensures ease of access, real-time updates, and efficient communication between donors and receivers.
3. This solution promotes sustainability and supports social welfare using modern mobile technology.

Objectives:

1. To develop a mobile application for seamless cloth donation
2. To connect donors, NGOs, and volunteers on a unified platform
3. To reduce textile waste and promote sustainable practices
4. To implement role-based dashboards for efficient management
5. To enable tracking of donations and pickup processes
6. To provide environmental impact insights such as waste reduction

Methodology:

The project is implemented using Flutter (frontend) and Firebase (backend services).

System Architecture:

- **Frontend:** Flutter (Dart) for Android & iOS
- **Backend:** Firebase
 - Firebase Authentication (user login/signup)
 - Cloud Fire store / Realtime Database (data storage)
 - Firebase Storage (image upload for clothes)
 - Firebase Cloud Messaging (notifications)

Working Process:

1. User registers/login using Firebase Authentication
2. Donor uploads clothing details (images, size, condition)
3. Data is stored in Firebase database
4. Receivers browse and request items
5. Notifications are sent for updates
6. Donation status is tracked in real-time

Result and Conclusion:

1. The developed system provides an efficient and user-friendly platform for cloth donation. It simplifies the donation process and improves coordination between donors, NGOs, and volunteers.
2. The application successfully demonstrates how technology can be used to address environmental and social challenges. By digitizing the donation process, the system reduces textile waste and encourages sustainable practices.
3. In conclusion, EchoThread serves as a practical solution for promoting reuse, reducing waste, and supporting community welfare.

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Future Scope:

The future scope of this project includes:

1. Integration with Firebase for real-time database and authentication
2. Implementation of GPS-based live tracking for pickups
3. Push notifications for updates and reminders
4. AI-based cloth classification and recommendation system
5. Multi-language support for wider accessibility
6. Reward system to encourage donations
7. Expansion into a global donation and recycling platform