



# SMART EXPIRY - FOOD EXPIRY DETECTION USING REACT AND NODE.JS

Mr. Pratharv Surve, Mr. Vedant Gupta, Mr. Utkarsh Mishra

Assistant Professor, Undergraduate Student, Undergraduate Student

Department of Information Technology

University of Mumbai, Mumbai, India

**Abstract :** This project is a smart food management system that helps users track their food items and receive notifications about their expiry dates. When a user buys food, the system logs it and sends timely reminders to prevent spoilage. It ensures that no food is forgotten or wasted in storage. Users get alerts before expiry, encouraging prompt usage. This promotes better food planning and reduces unnecessary waste. If the food quantity is large and cannot be consumed in time, the system offers a donation feature. Users can choose to contribute the extra food to registered NGOs. These NGOs then collect and distribute the food to those in need. This process supports social responsibility by connecting people with surplus food to communities facing hunger. It builds awareness about food waste and helps create a sustainable food-sharing network by combining technology with community service, the system reduces food loss and supports the underprivileged. It transforms extra food into a valuable resource rather than waste. The platform benefits users, NGOs, and society at large through thoughtful and efficient food management.

**Index Terms – Food Expiry Tracking**

## I. INTRODUCTION

Food wastage is a critical global issue driven by inefficient tracking in households and businesses, often resulting in the disposal of still-edible products. Simultaneously, many charitable organizations struggle to secure timely donations due to fragmented and manual processes. **FoodSave** addresses these gaps by providing a centralized platform for monitoring inventories and facilitating seamless communication between donors and NGOs. By leveraging Node.js and React.js, the system provides a scalable solution to combat food loss and support social welfare.

## II. PURPOSE

The primary purpose of Food Save is to minimize food wastage by simplifying expiry tracking and donation management. It encourages responsible consumption and fosters social responsibility by enabling users to easily contribute surplus food to a sustainable sharing network.

### III. SCOPE

The system's scope covers the entire lifecycle of food management:

- **Inventory Management:** Secure user registration and tracking of item names, quantities, and dates.
- **Notification System:** Automated scheduling and delivery of alerts via in-app messages or email.
- **NGO Integration:** A searchable database of registered NGOs ready to accept donations.
- **Donation Processing:** Streamlined request management and communication between donors and recipients.
- **Administrative Control:** Dashboards for NGOs to manage incoming offers and track fulfillment status.

### IV. SYSTEM ALGORITHMS & TECHNOLOGIES

Food Save utilizes a robust technology stack to ensure performance and security:

- **Backend (Node.js & Express.js):** Manages server-side logic, routing, and efficient communication between the frontend and database.
- **Frontend (React.js):** Provides a dynamic and responsive user experience for both desktop and mobile browsers.
- **Database (MongoDB):** A NoSQL solution for flexible storage of user profiles, inventories, and NGO records.
- **Authentication (JWT):** Implements stateless, secure sessions to protect protected routes like donation creation.
- **Expiry Algorithm:** Periodically checks stored expiry dates against the current date to trigger timely user alerts.
- **Donation Matching:** Validates food availability and matches donors with NGOs based on location and immediate need.

### V. FEATURE BREAKDOWN

1. **Centralized Dashboard:** A single interface for users to view items nearing expiry, active donations, and recent alerts.
2. **Automated Notifications:** Triggers reminders for upcoming expiries and donation acknowledgments.
3. **Color-Coded Indicators:** Visual aids that help users quickly assess food status (e.g., near expiry vs. available).
4. **Reporting Module:** Provides analytical insights into donated food volumes and expired items to monitor social impact.

### VI. CHALLENGES AND SOLUTIONS

- **Challenge:** Manual tracking leads to unintentional wastage.
  - **Solution:** Automated notification system alerts users to take action before spoilage.
- **Challenge:** Fragmented donation processes between donors and charities.
  - **Solution:** A unified platform connecting users with a searchable list of local, registered NGOs.
- **Challenge:** Data security and integrity.
  - **Solution:** Rigorous input validation, JWT authentication, and data encryption for all communications.
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## VII. PERFORMANCE EVALUATION

The system is evaluated through modular testing phases:

- **Functional Testing:** Verifying registration, food logging, and donation request flows.
- **Security Testing:** Ensuring unauthorized users cannot access private dashboards and that sessions expire after inactivity.
- **Usability Testing:** Confirming that the interface is intuitive and error messages are clear for users of varying technical skills.

## VIII. FUTURE SCOPE

Future enhancements for the Food Save platform include:

1. **AI Integration:** Utilizing machine learning for food usage prediction and waste analysis.
2. **Logistics Partnerships:** Integrating with local delivery partners to automate the food pickup process from donors to NGOs.
3. **Native Mobile Apps:** Expanding beyond web browsers to dedicated iOS and Android applications.

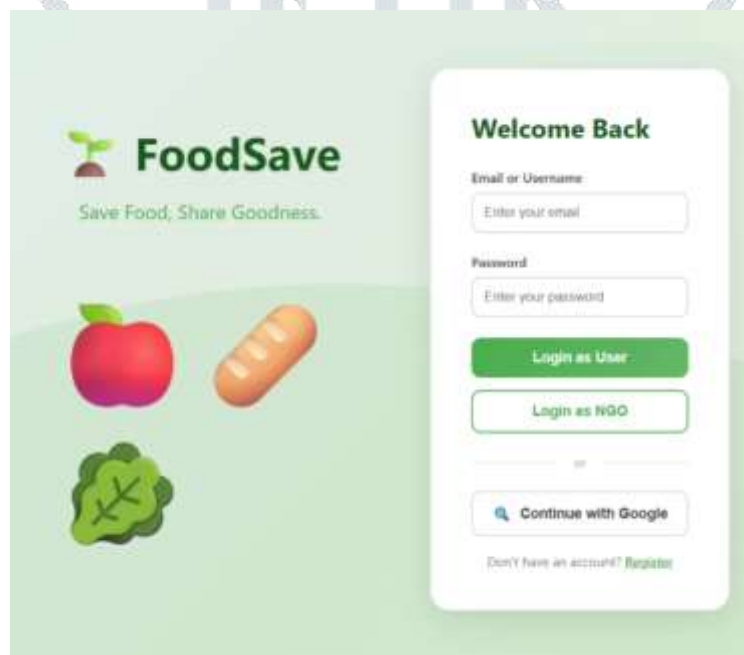


Figure 1.1



Figure 1.2

## IX. ACKNOWLEDGEMENT

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