

Smart Trashcan Mobile App (React Native Expo)

The Smart Trashcan mobile app is a React Native Expo application designed to monitor and control a smart trashcan remotely. This app provides users with real-time insights into the trashcan's status, enabling seamless and hygienic waste management.

Key Features

1. Real-Time Updates

- Displays the trash level in percentage using real-time data fetched via Server-Sent Events (SSE).
- Alerts for when the trashcan is full or requires maintenance.

2. Voice Command Integration

- Allows users to perform actions like opening the lid or emptying the bin via voice commands.

3. Status Monitoring

- Displays the lid status (open/closed).
- Monitors the buzzer status (on/off).

4. Activity Logs

- Keeps track of past updates, providing insights into trash usage patterns.

5. User-Friendly Interface

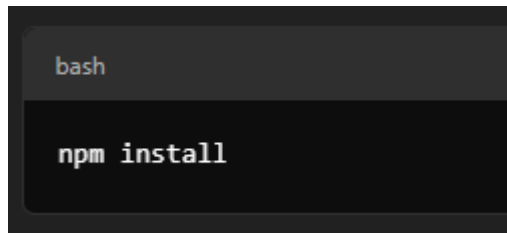
- A clean, intuitive design with clear status indicators.
 - Built with React Native Expo for a consistent cross-platform experience.
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Setup Instructions

1. Prerequisites


- Node.js installed on your machine.
- Expo CLI installed globally (`npm install -g expo-cli`).
- A smartphone with the Expo Go app installed.

Install Dependencies



```
bash
npm install
```

Start the Development Server



```
bash
expo start
```

This will generate a QR code for running the app on your device using the Expo Go app.

2. Connect to the Backend

- Ensure the backend server (built using Java on Glassfish) is running.
- Update the API endpoint in the app's configuration file to point to the backend server.

3. Run the App

- Scan the QR code from the Expo Go app to launch the Smart Trashcan app on your smartphone.

Technologies Used

- **React Native Expo:** For building the cross-platform mobile app.
 - **Server-Sent Events (SSE):** For real-time updates from the backend.
 - **Java Backend (Glassfish):** Handles data synchronization and API communication.
 - **Arduino IDE:** For programming the hardware components.
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Conclusion

This app complements the Smart Trashcan hardware by providing users with a seamless way to monitor and interact with the system remotely. It demonstrates the practical integration of IoT with mobile technology, offering a user-friendly solution for modern waste management.

Let me know if you'd like additional details or further improvements!