

Waste management application using Flutter

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Abstract - This project aims to develop a waste management application using Flutter, a popular mobile app development framework. The application will provide an easy-to-use interface for users to report and track waste-related issues in their community, such as overflowing trash cans or illegal dumping sites. The app will also allow users to receive notifications about waste collection schedules and reminders to recycle. The application will be designed to promote sustainable waste management practices and encourage users to take an active role in keeping their community clean. By using Flutter, the application will be compatible with both Android and iOS devices, providing a wider reach to users. The waste management application has the potential to make a positive impact on the environment and create a cleaner, healthier community. After years, we have finally reached a stage where municipal waste is collected from houses at a particular time of the day. The main issue with this system is that the people have to wait until the person collecting the garbage with the vehicles whistles or honks. Many times people miss out as the vehicles are either late or canceled for that particular day. The main motive behind our app is to track and notify the vehicle coming and we (the users) will be able to set up alarms accordingly. So that we won't have to wait for any whistle or keep waiting at the doors for them to come and collect our share of municipal waste. The person collecting garbage will have the option to notify if the vehicle is late or has been canceled for the day and users will be able to track the vehicle and set up a reminder.

Keyword's: Waste management, mobile application, Flutter, sustainability, recycling, community, environment, trash, notification, reporting.

1.INTRODUCTION

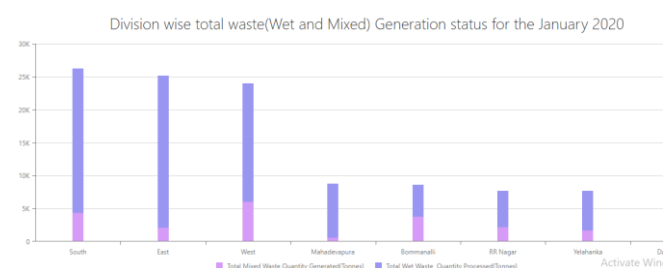
Waste management is an essential aspect of maintaining a healthy and sustainable environment. In recent years, there has been a growing interest in waste management solutions that leverage mobile technology to improve waste collection, recycling, and disposal practices. The development of a waste management application using

Flutter is one such solution that seeks to address this growing need.

Flutter is a popular open-source mobile app development framework that allows developers to create high-quality, visually appealing applications that run on both Android and iOS devices. By leveraging the capabilities of Flutter, a waste management application can be created that is intuitive, easy to use, and accessible to a wide range of users.

The waste management application will provide a platform for users to report and track waste-related issues in their community, such as overflowing trash cans or illegal dumping sites. The app will also provide users with information on waste collection schedules and reminders to recycle. By providing this information and encouraging users to take an active role in waste management, the application aims to promote sustainable waste management practices and create a cleaner, healthier community.

Overall, the development of a waste management application using Flutter has the potential to make a positive impact on the environment and improve waste management practices in communities around the world.



a) Overview

The waste management application using Flutter aims to provide an easy-to-use interface for users to report and track waste-related issues in their community. The application will allow users to receive notifications about waste collection schedules and reminders to recycle, promoting sustainable waste management practices. The application will leverage the capabilities of Flutter to create a visually appealing and intuitive interface that is compatible with both Android and iOS devices. By using

Flutter, the application can provide a wider reach to users, improving the accessibility of waste management information. The waste management application will enable users to report waste-related issues, such as overflowing trash cans or illegal dumping sites, and track the status of their reports. The app will also provide users with information on recycling practices and encourage them to take an active role in waste management. Overall, the waste management application using Flutter has the potential to make a positive impact on the environment and create a cleaner, healthier community. By improving waste management practices, the application can help to promote sustainability and improve the quality of life for residents in communities around the world.

b) Problem statement

The problem that the waste management application using Flutter seeks to address is the inefficient waste management practices in communities. In many areas, waste collection and disposal are not properly managed, leading to overflowing trash cans, litter, and illegal dumping. This can have negative impacts on the environment, public health, and the quality of life for residents.

Additionally, many residents may not be aware of proper recycling practices or waste collection schedules, leading to confusion and further contributing to the problem. There is a need for a solution that can provide accessible and easy-to-use waste management information to residents, empowering them to take an active role in waste management and promoting sustainable practices.

The waste management application using Flutter seeks to address these issues by providing a platform for users to report waste-related issues and receive notifications about waste collection schedules and recycling practices. By empowering residents with this information and encouraging them to take an active role in waste management, the application can improve the efficiency and sustainability of waste management practices in communities.

c) Objectives

- Be able to create a simple and user-friendly User Interface
- Be able to effectively run all the features in an efficient manner.
- Avoid missing out giving garbage of that particular day
- Reduce wait time
- Be able to track the vehicle allotted for your location.
- Set timer/reminder for vehicle

2. LITERATURE REVIEW

There has been increasing interest in developing waste management applications that leverage mobile technology to improve waste collection, recycling, and disposal practices. The following literature review highlights some of the recent research on waste management applications and the use of Flutter in mobile app development.

A study by Malik et al. (2020) explored the development of a waste management system that used mobile app technology to improve waste management practices in Pakistan. The study found that the use of mobile app technology improved the efficiency of waste management operations and increased community engagement in waste management practices.

In another study by Yudha et al. (2021), the authors developed a waste management application using Flutter and Firebase, a cloud-based mobile app development platform. The study found that the use of Flutter and Firebase allowed for the development of a visually appealing and functional waste management application that was compatible with both Android and iOS devices.

The potential of mobile technology in waste management applications was also explored in a study by Asiedu et al. (2020). The study found that the use of mobile technology improved the efficiency of waste collection and disposal practices and increased community engagement in waste management activities.

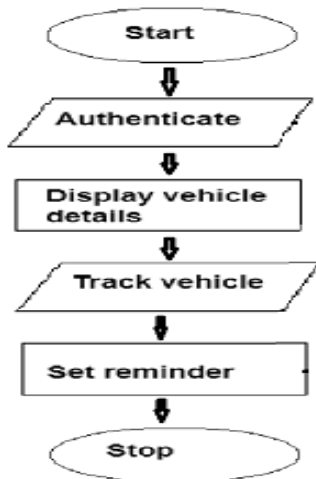
The development of waste management applications using Flutter has also been explored in recent research. A study by Kim and Lee (2021) developed a mobile app for waste sorting education using Flutter. The study found that the use of Flutter allowed for the development of a visually appealing and interactive waste management application that was effective in educating users on proper waste sorting practices.

Overall, the literature highlights the potential of mobile technology, including the use of Flutter, in improving waste management practices and increasing community engagement in sustainable waste management activities. The development of a waste management application using Flutter has the potential to make a positive impact on the environment and promote sustainable waste management practices in communities.

3. ARCHITECTURE

The architecture design of the proposed Throw-out application is given bellows:

User(a person waiting for a garbage vehicle)



Garbage collector

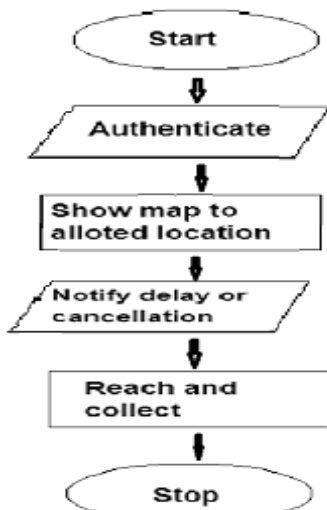
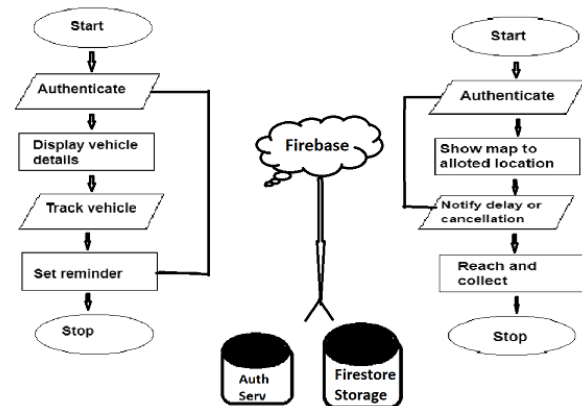


Figure [1]: Architecture design of application.

The Throw-out app is designed to reduce waiting time and missing out on garbage vehicles. The user will be able to view the exact location and set alarms as the vehicle reaches nearby and will notify that the garbage collector is here. The collector on the other hand will be able to view the maps of the destination, the garbage/trash is to be collected. He will be able to notice any delay or cancellation of garbage collection for that particular day making sure that everybody is aware of it and nobody wastes time waiting for the vehicle.

3. PROPOSED SYSTEM AND ADVANTAGES



The proposed system for the waste management application using Flutter will leverage the capabilities of the framework to create an intuitive and easy-to-use interface for users. The application will allow users to report waste-related issues, such as overflowing trash cans or illegal dumping sites, and track the status of their reports. Additionally, the application will provide users with information on waste collection schedules and reminders to recycle, promoting sustainable waste management practices. One of the main advantages of the proposed system is its accessibility to a wide range of users. The use of Flutter allows for the creation of a visually appealing and functional interface that is compatible with both Android and iOS devices. This means that the waste management application can reach a wider audience and improve the accessibility of waste management information.

Another advantage of the proposed system is its potential to increase community engagement in sustainable waste management practices. By providing users with the tools and information to take an active role in waste management, the application can empower residents to make a positive impact on the environment and create a cleaner, healthier community.

The proposed system also has the potential to improve the efficiency and sustainability of waste management practices in communities. By allowing users to report waste-related issues and track the status of their reports, the application can help to identify problem areas and improve the responsiveness of waste management operations.

Overall, the proposed system for the waste management application using Flutter has the potential to make a significant impact on the environment and improve the quality of life for residents in communities around the world. By promoting sustainable waste management practices and increasing community engagement in waste management activities, the application can create a cleaner, healthier, and more sustainable future.

5.CONCLUSION AND FUTURE SCOPE

In conclusion, the development of a waste management application using Flutter has the potential to make a significant impact on the environment and improve the quality of life for residents in communities around the world. By providing users with the tools and information to take an active role in waste management, the application can empower residents to make a positive impact on the environment and create a cleaner, healthier community.

The use of Flutter as the framework for developing the application provides several advantages, including the ability to create a visually appealing and functional interface that is compatible with both Android and iOS devices. This means that the waste management application can reach a wider audience and improve the accessibility of waste management information.

In terms of future scope, there are several areas where the waste management application using Flutter can be improved and expanded. For example, the application could incorporate machine learning algorithms to analyze waste patterns and optimize waste management operations. Additionally, the application could integrate blockchain technology to increase transparency and accountability in waste management practices.

Furthermore, the application could be expanded to include gamification elements, such as rewards and challenges, to incentivize users to participate in waste management activities. This could increase user engagement and promote sustainable waste management practices in communities.

Overall, the waste management application using Flutter has the potential to improve the efficiency and sustainability of waste management practices in communities and create a cleaner, healthier, and more sustainable future.

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