

Plastic Radar

Description:

Plastic Radar is an innovative app designed to connect plastic waste collectors and disposers to enhance plastic waste management and support sustainability efforts. Developed using Android

Studio with Jetpack Compose for a modern and intuitive user interface, the app facilitates the seamless process of plastic disposal and collection.



By integrating Firebase for backend services, including real-time database management and user authentication, the app ensures secure and efficient handling of user data and interactions. Disposers can easily provide details of their plastic waste, while collectors can browse available disposal locations, streamlining the logistics of collection.

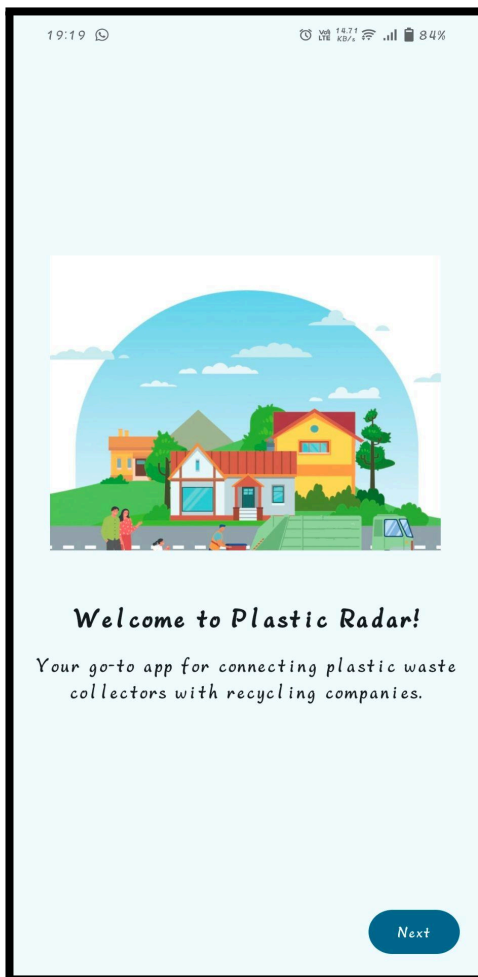
The app enables users to track their contribution to reducing plastic waste, fostering an environmentally responsible community. As more disposers use the platform to contribute their plastic waste, and collectors efficiently manage pickups, the overall amount of plastic waste in communities will significantly decrease.

Future improvements could include enhancing the user experience by refining UI elements, optimizing performance for faster load times, and expanding functionality to include additional features like notifications and waste categorization to further promote sustainable practices.

Features

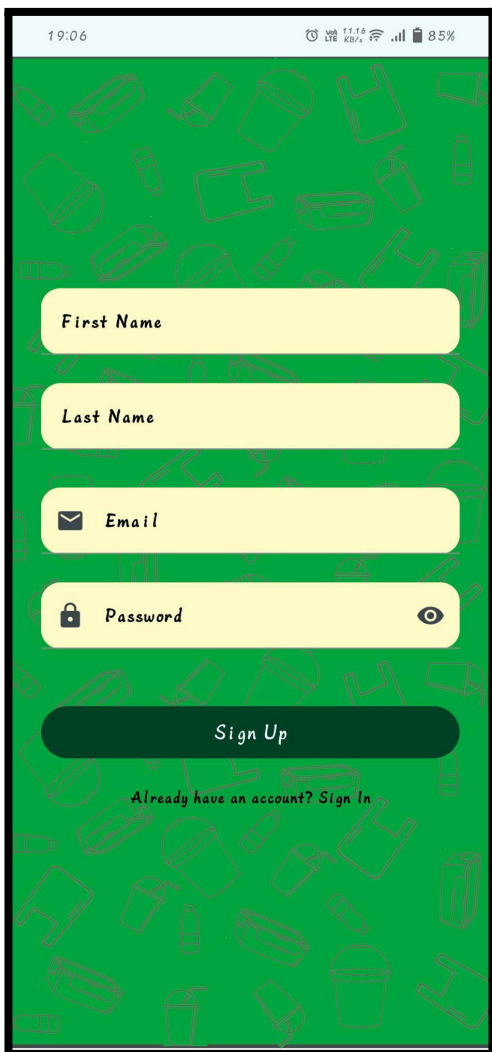
1. Onboarding Screens

- **Sustainability Focus:** As users open the app, they are greeted with onboarding screens that explain the app's mission and goals—promoting sustainability and reducing plastic waste.
- **Navigation:** After viewing the onboarding content, users navigate to the home screen by clicking “Next” on each screen and then click “Get Started” and board on to the signup page if they are first time users or login page to and then enter the home screen.



2. Sign-Up and Authentication

- **Create an Account:** Users can easily create an account by entering their name, email, and password on the sign-up page. This process is powered by Firebase Authentication to ensure secure and reliable account creation.
- **Login:** Users can securely log in with their credentials on the sign-in page if they already have an account. Firebase handles authentication to maintain user data privacy and security.



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First Name

Last Name

Email

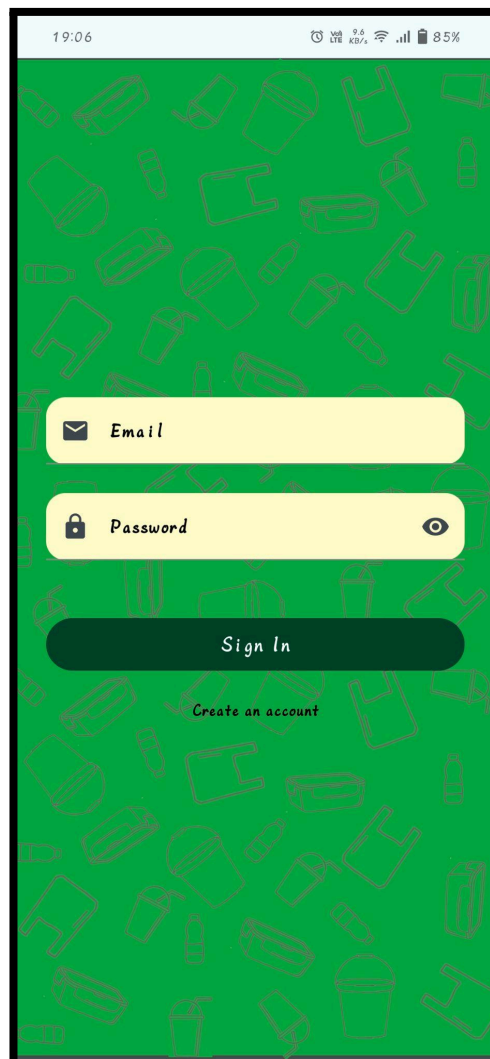
Password

Sign Up

Already have an account? Sign In

The Sign Up page features a green background with a pattern of white line-art icons representing various electronic devices. It includes four yellow input fields for 'First Name', 'Last Name', 'Email' (with an envelope icon), and 'Password' (with a lock icon and a toggle eye icon). A dark green 'Sign Up' button is positioned below the fields, and a link 'Already have an account? Sign In' is at the bottom.

Sign Up Page



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Email

Password

Sign In

Create an account

The Sign In page has a similar green background with white line-art icons. It contains two yellow input fields for 'Email' (with an envelope icon) and 'Password' (with a lock icon and a toggle eye icon). A dark green 'Sign In' button is centered below the fields, and a link 'Create an account' is at the bottom.

Sign In Page

3. Live Display of Plastic Prices

- The home screen displays the current market rates for different types of plastic, allowing disposers and collectors to access up-to-date pricing information. It also includes a location option to change states, ensuring accurate rates based on the user's region.
- An auto-slider on the home screen highlights key information about the app, educating users on plastic waste reduction and promoting the app's benefits.



Home Screen in White Theme



Home Screen in Black Theme

4. Navigation Icons

- The home screen includes four primary icons:
 - **Dispose:** Navigate to the disposal function.
 - **Collect:** Access collection functionalities.
 - **Profile:** Manage user profile details.
 - **Home:** Navigate back to the home screen.
- Users can also select their state or region using the location option at the top right of the screen. They can select the state displayed by a image

5. Disposal Process

- When disposers want to dispose of plastic waste, they click the “Dispose” icon and are directed to dispose page where they fill in details such as:
 - Name
 - Address
 - Phone number
 - Date
 - City
 - Type of plastic (6 plastic types options)
 - Quantity (small or bulk)
- If any item is not entered, the app shows a respective error.
- When users click on the calendar to select a date, it displays as shown in the provided picture.

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← Select Address

Name

Phone Number

Address Name (Home, Work)

Select City

Select Schedule Date

Select Type of Plastic

Nylon Hard-Plastic

Soft-Plastic PVC

PET Acrylic

Select Quantity of Plastic

Bulk Quantity Small Quantity

SAVE ADDRESS

Dispose Screen

19:09 12.15 KB/s 85%

← Select Address

Name

Name cannot be empty

Phone Number

Phone number must be 10 digits

Address Name (Home, Work)

Address name cannot be empty

Select City

City must be selected

Select Schedule Date

Schedule date cannot be empty

Select Type of Plastic

At least one plastic type must be selected

Nylon Hard-Plastic

Soft-Plastic PVC

PET Acrylic

Select Quantity of Plastic

Select exactly one quantity

Bulk Quantity Small Quantity

SAVE ADDRESS

*Showing Errors for
respective item*

19:09 10.79 KB/s 85%

← Select Address

Name

Name cannot be empty

Phone Number

Phone number must be 10 digits

Address Name (Home, Work)

Address name cannot be empty

Select City

City must be selected

Select Schedule Date

Schedule date cannot be empty

Select Type of Plastic

At least one plastic type must be selected

Nylon Hard-Plastic

Soft-Plastic PVC

PET Acrylic

Select Quantity of Plastic

Select exactly one quantity

Bulk Quantity Small Quantity

SAVE ADDRESS

2024

Fri, Aug 23

< August 2024 >

S M T W T F S

1 2 3

4 5 6 7 8 9 10

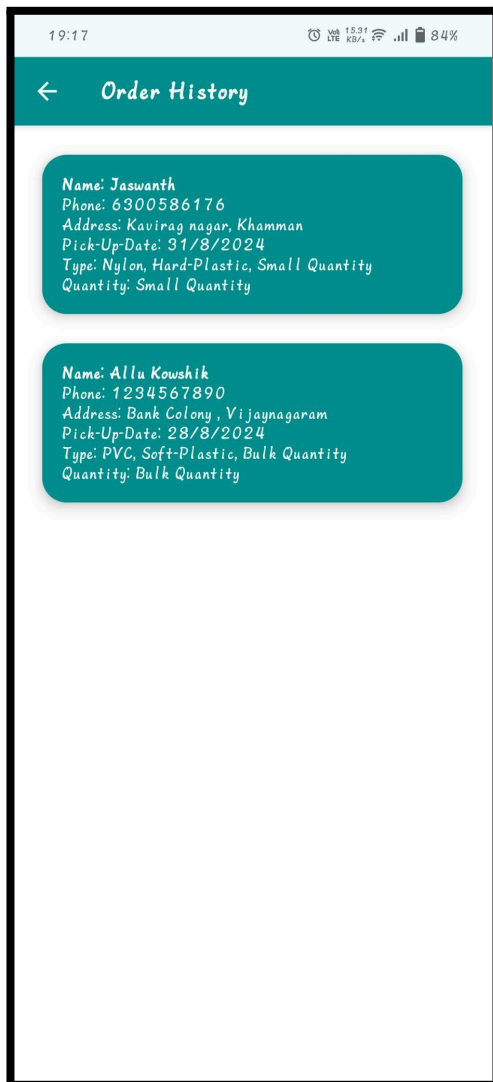
11 12 13 14 15 16 17

18 19 20 21 22 23 24

25 26 27 28 29 30 31

CANCEL OK

*Calendar for choosing the date
for disposal*



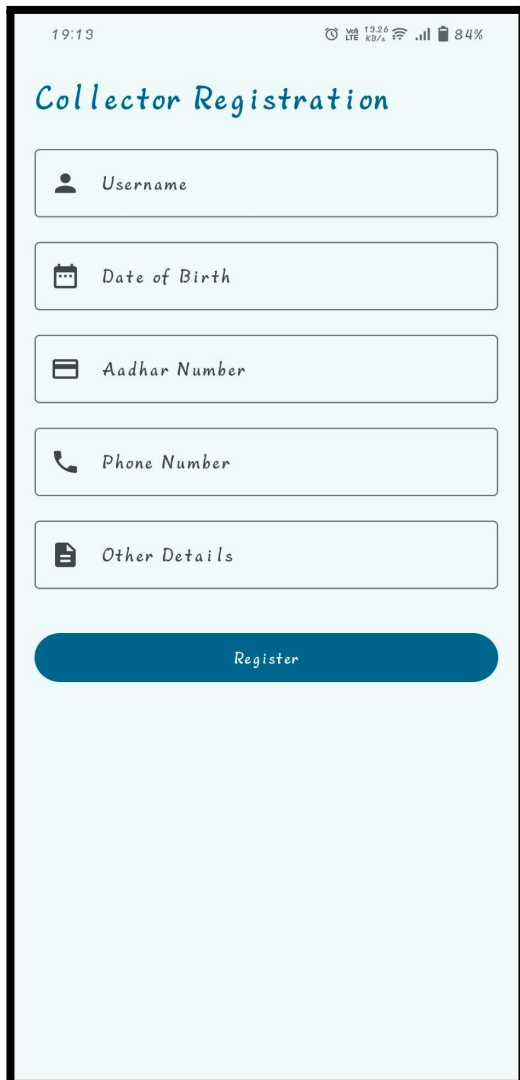
After clicking “Save address”, the information is stored in Firebase, and the disposal request is available for collectors to view and directed to Order History and then they can go back to Home Page

Order History Screen

6 . Collection Process

When Collectors want to collect plastic , they click the “Collect” icon and are directed to collect screen where there is a search bar

Collectors have to Compulsorily register and give details before they start identifying locations for Collection.



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Collector Registration

Username

Date of Birth

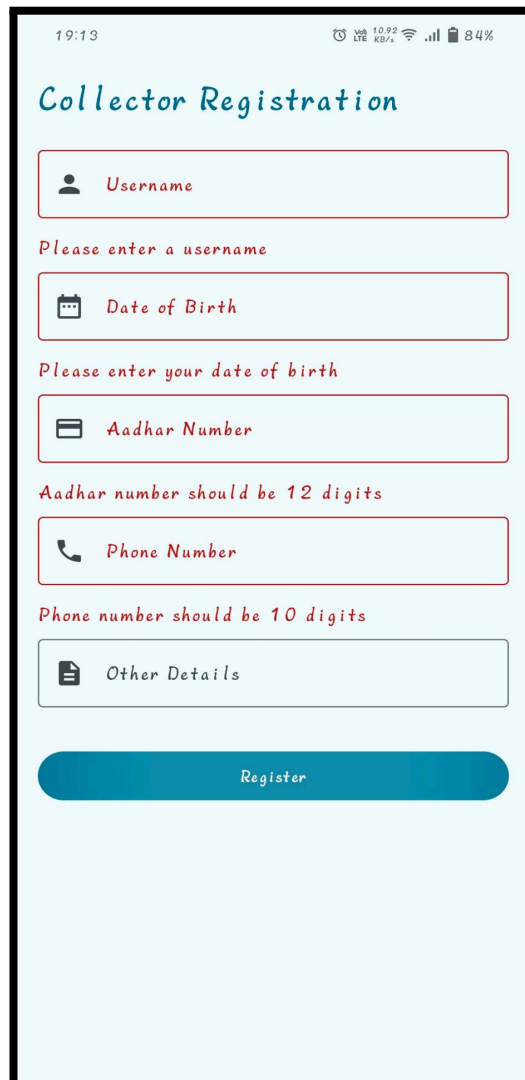
Aadhar Number

Phone Number

Other Details

Register

Collector Screen



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Collector Registration

Username

Please enter a username

Date of Birth

Please enter your date of birth

Aadhar Number

Aadhar number should be 12 digits

Phone Number

Phone number should be 10 digits

Other Details

Register

***Showing Errors For
Respective Item***

- Collectors can use the search bar for available disposals by entering the city in the search bar.
- The app displays all available addresses for collection based on the selected city, scheduled date and other information about the waste saved in the disposal screen retrieved from Firebase.
- Collectors can contact disposers directly or approach them to finalize collection details and make deals with Disposer.

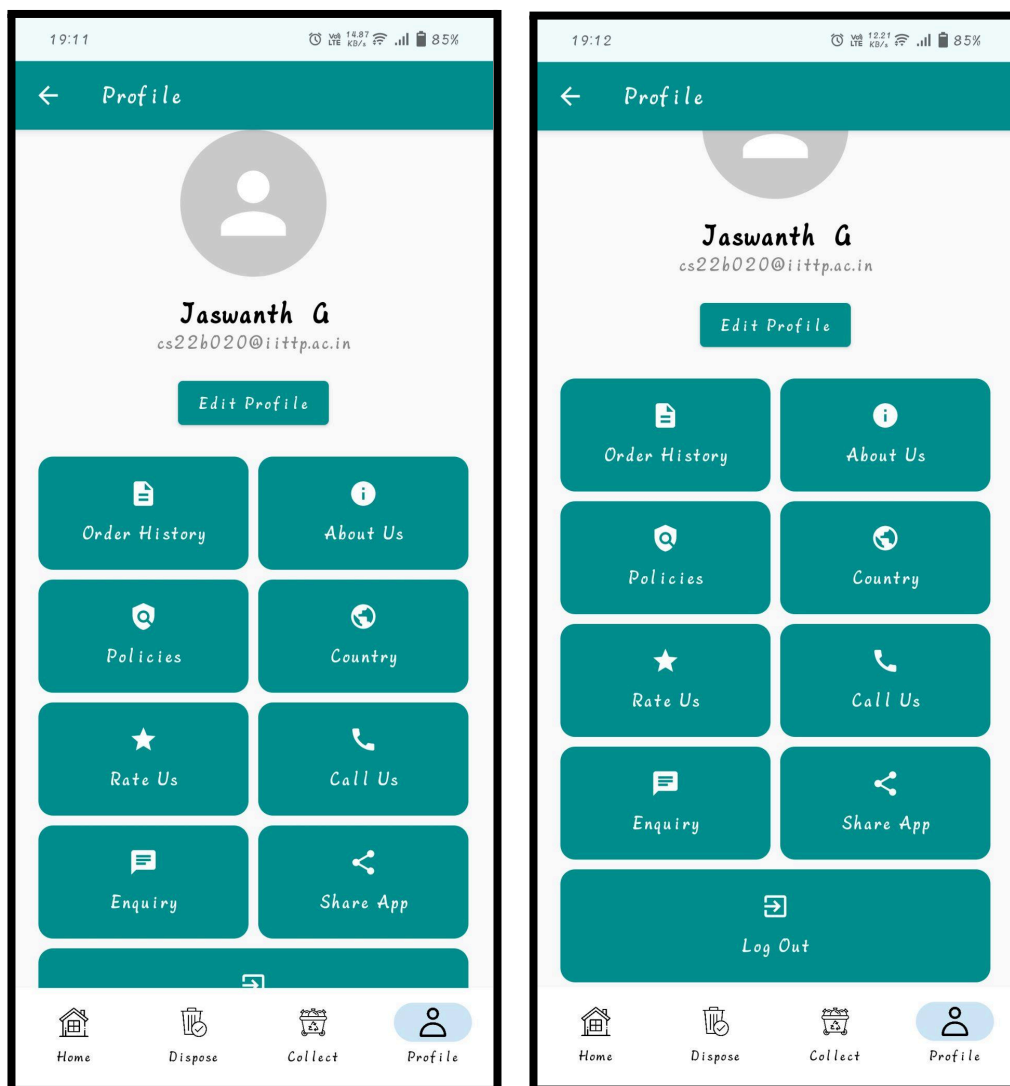


List of Orders, Where Collectors Can Sort them based on City

7. History and profile details

Users can check or update their profile by clicking on the profile icon. They can see multiple options like "About Us," "Contact the App Administrators," "Policies," and "Logout," and they can also edit their profile details

Additionally, users can view their history of disposals and collections and update their details when necessary. They can also click on "About Us" and "Policies" for more information.



Profile Screen With Various options.

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← Edit Profile

First Name
Jaswanth

Last Name
A


Email
cs22b020@iittp.ac.in

Password

Save

19:15 12.26 KB/s 84%

← Edit Profile Image



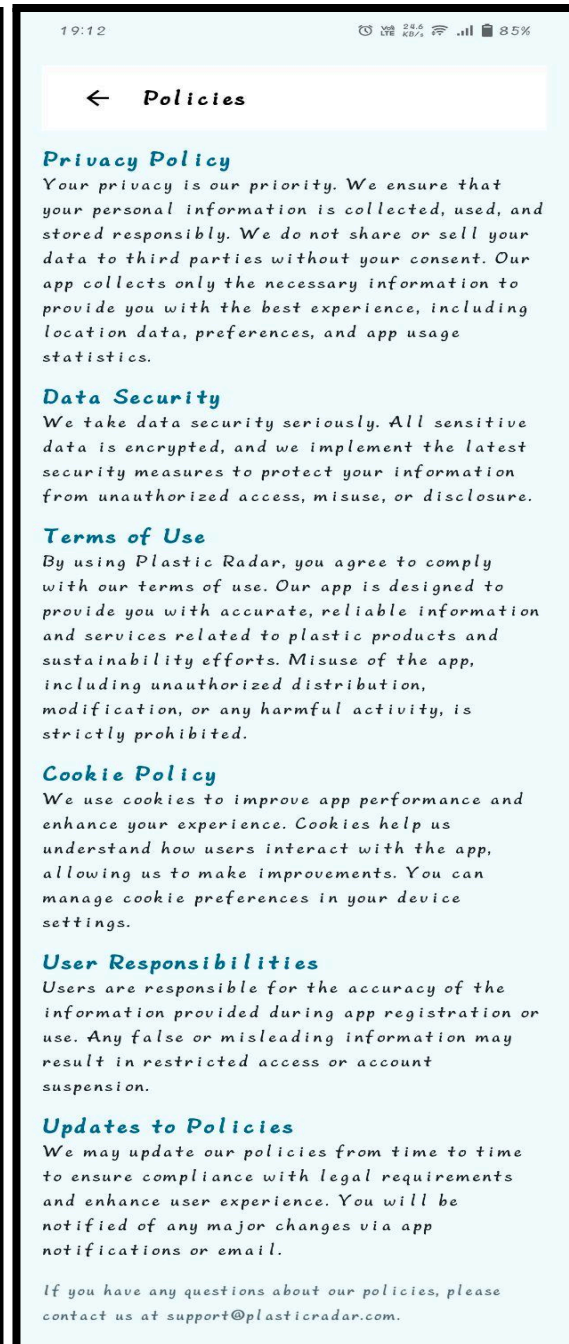
Select Image

Upload Image

Option To Edit The User Details And Profile Pic



About Our Project



Policies We kept For our User Experience

Contributions

Jaswanth (CS22B020) :

I was responsible for designing and implementing the complete home screen UI/UX, ensuring a user-friendly experience. I integrated Firebase to store and manage collector details efficiently. Additionally, I contributed to refining the Collect Screen Section and resolved several critical bugs, including preventing the creation of multiple screens, which improved the overall app stability.

Nishchith (CS22B021) :

Contributed to the project by developing the complete Dispose Screen, integrating features such as the calendar for date selection, and implementing Firebase Firestore for storing dispose-related data. Additionally, contributed to the design and development of the signup and sign-in pages, enhancing the overall user experience.

Rohith (CS22B022) :

Contributed to the design and development of the entire Profile Page for the Plastic Radar project, including sections like 'About Us,' 'Policies,' and a logout option. I also implemented the Profile Edit feature, allowing users to update their information and upload a profile image. Additionally, I played a key role in shaping the project idea to ensure its successful implementation.

Rashmitha (CS22B050) :

I contributed to my project by designing and implementing the signup and sign-in pages, integrating Firebase to store user details, and ensuring they reflect on the ProfileScreen. Additionally, I managed project meetings and provided key ideas that guided our progress.

Raghuveer (CS22B0019) :

Contributed to the project by designing the Splash screen and implementing the Collector screen, which includes a search bar that is integrated with the backend. Additionally, I was responsible for designing the overall theme of the app, ensuring a cohesive and visually appealing user interface throughout.

Kowshik (CS22B004) :

Lead the team in ideating product concepts and defining key features. Create user stories and user journeys while planning the MVP. Prioritize tasks and outline jobs to be done. Write the code for the onboarding screen and redesign the collector's screen. Prepare presentation and documentation.

