CarbonAware

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Conceive

Problem Statement

Existing carbon footprint calculation tools are not tailored to the unique lifestyle and environmental considerations of residents in Singapore.

Most Singaporeans live in apartments, rely on public transportation, and have limited usage of heaters due to the tropical climate.

This leads to inaccuracies in carbon footprint assessments and hinders the ability to provide personalized recommendations for sustainable living in Singapore.

Background Information

Climate Change and Individual Contributions:

- Climate change is a global challenge driven by increasing greenhouse gas emissions.
- Individuals significantly contribute to these emissions through their daily activities.

Singapore's Unique Context:

- Singapore has a high population density, with most residents living in apartments and relying on public transportation.
- The tropical climate reduces the need for heaters and presents unique considerations for energy consumption.

Importance of Tailored Solutions:

- A specialized carbon footprint calculator and tracker are essential for addressing Singapore's specific challenges.
- By providing a customized solution, individuals can accurately measure, understand, and reduce their carbon footprints.

Research into existing solutions

Carbon Footprint Calculators:

- WWF Footprint Calculator: Measures carbon footprint based on lifestyle choices including energy consumption, transportation, diet, and waste.
- Carbon Footprint Ltd: Offers calculators for individuals, households, and businesses, considering factors such as energy use, travel, and waste generation.

Sustainable Lifestyle Apps:

- JouleBug: Gamifies sustainable living, encouraging users to take eco-friendly actions and reduce their carbon footprint through challenges, social sharing, and education.
- Oroeco: Tracks carbon footprints based on users' spending habits, connecting to financial accounts to estimate emissions associated with consumption.

Research into existing solutions

Country-Specific Tools

- Singapore Green Plan 2030: Government-led initiative with strategies and programs to achieve sustainability goals in Singapore, including tools for carbon footprint reduction, energy efficiency, and cleaner transportation.

Corporate Sustainability Platforms:

- Carbon Footprint Management Systems: Used by businesses and organizations to measure and track emissions, providing tools for data collection, analysis, and reporting to support sustainability efforts.

SP Group's Carbon Footprint Tracking Website:

- SP Group, Singapore's leading energy utilities company, offers a website to track personal carbon footprints. Visit their website for personalized carbon footprint information and insights. (Add the URL of SP Group's website here)

Solution

Develop a specialized app for residents in Singapore to calculate and track their carbon footprints accurately.
Customize the app to account for Singapore's unique lifestyle and environmental considerations, including apartment living, public transportation usage, and minimal heater usage.

What isCarbonAwareæabout?

Comprehensive Data Input:

Enable users to input data related to their daily activities, including transportation choices, meal preferences, and household items.

Incorporate relevant data points such as energy consumption, waste generation, and travel habits to provide comprehensive carbon footprint calculations.

Personalized Recommendations and Statistics:

Offer personalized recommendations for reducing carbon footprints based on users' specific data and patterns.

Provide relevant statistics and insights to empower users with knowledge and encourage sustainable lifestyle changes.

Tracking

Enable users to track their carbon footprints over time, allowing them to monitor progress

Pros and Cons of proposed solution

Pros:

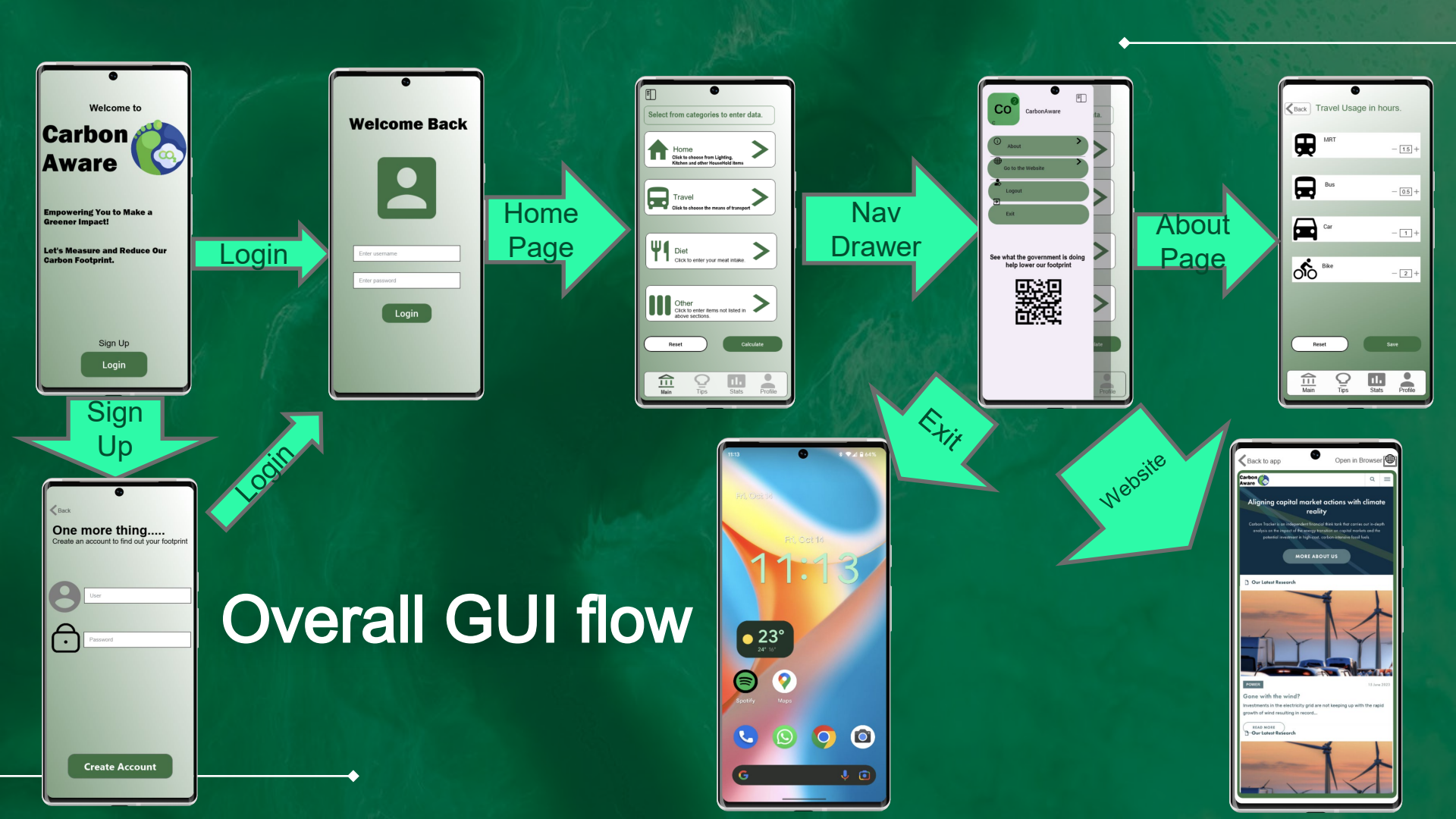
- Environmental Awareness: The app raises awareness about sustainable living and users' individual impact on the environment, fostering a sense of responsibility.
- Personalized Insights: By logging activities and calculating carbon footprints, users gain personalized insights into their environmental impact, enabling informed decision-making.

Cons:

- User Adoption: Encouraging users to download and use the app requires effective marketing strategies and user engagement techniques to attract and retain a significant user base.
- Data Accuracy: The accuracy of carbon footprint calculations depends on user input and available data, which can be influenced by variations in user behavior and inconsistent input.

Application Specification

Design


Welcome to
Carbon Aware
Empowering You to Make a Greener Impact!
Let's Measure and Reduce Our Carbon Footprint.
Sign Up
Login
Login
Welcome Back
Enter username
Enter password
Login
Home Page
Select from categories to enter data.
Home
Click to choose from Lighting, Kitchen and other Household items
Travel
Click to choose the means of transport
Diet
Click to enter your meat intake.
Other
Click to enter items not listed in above sections
Reset
Calculate
Main
Tips
Stats
Profile
Nav Drawer
CarbonAware
About
Go to the Website
Logout
Exit
See what the government is doing help lower our footprint
About Page
Back
Travel Usage in hours.
MRT
Bus
Car
Bike
Reset
Save
Sign Up
Back
One more thing.....
Create an account to find out your footprint
User
Password
Create Account
Login
Exit
Website
Back to app
Open in Browser
Aligning capital market actions with climate reality
MORE ABOUT US
Our Latest Research
Gone with the wind?
Overall GUI flow

Notes

By verifying the database, Login Page will alert users when their username or password is incorrect. By signing up, a new record will be added to the database.

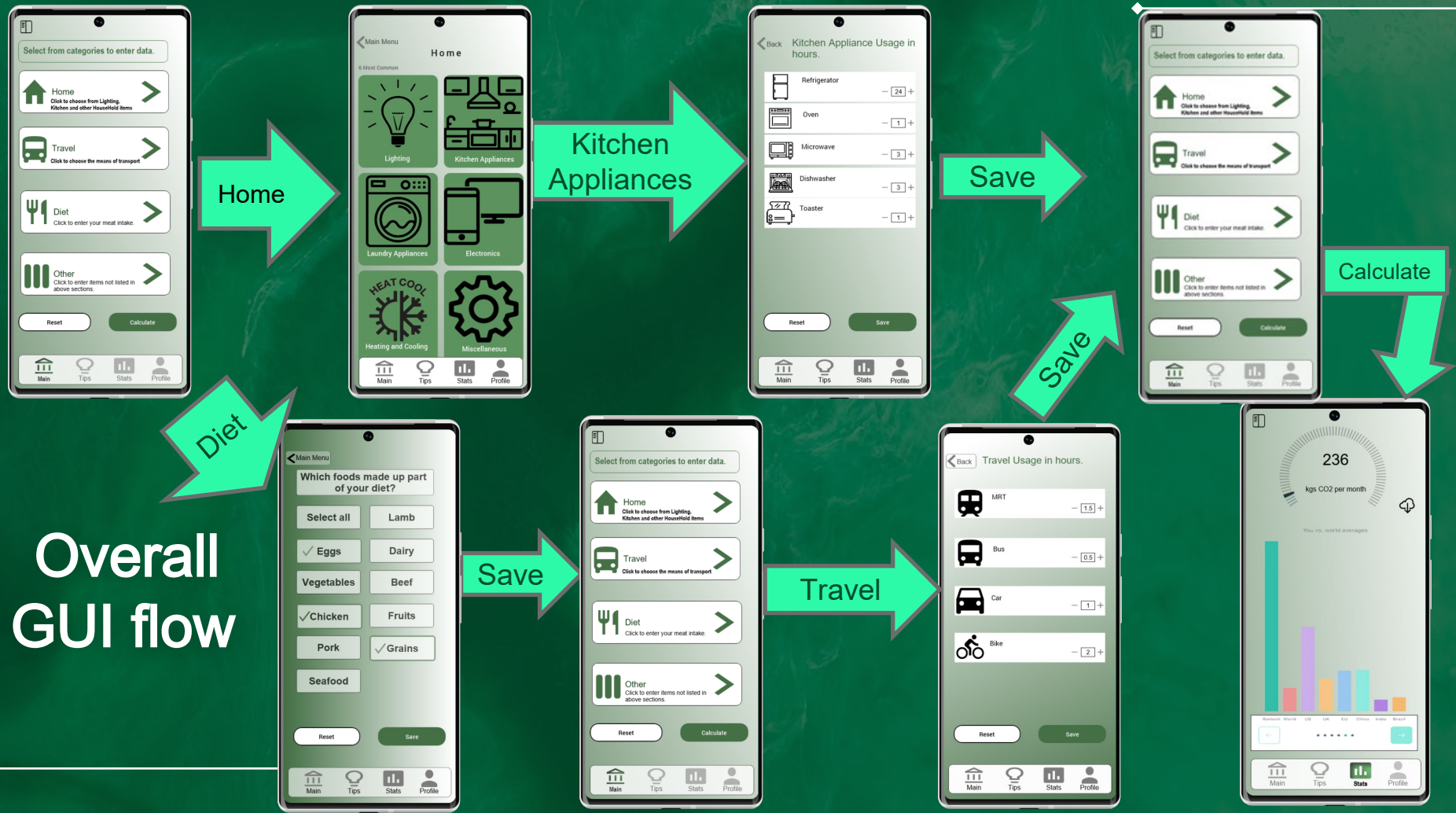
The Navigation Drawer in CarbonAware enables easy access to different app sections and features, enhancing user navigation and interaction.

The QR code scanner will give quick access to Singapore's carbon emission reduction efforts.

The About Page in CarbonAware provides key details about the app, including its purpose, app logo, and version number.

These sections provide users with valuable information, guidance, and tools to track, manage, and improve their carbon footprint and overall sustainability efforts

Overall GUI flow



Notes

Travel: Log hours spent on different transportation modes to monitor and understand your carbon footprint. Tap "Save" to go back to home page.

Home Utility: Track hours of electricity, gas, or water usage to identify areas for improvement. Tap "Save" to go back to home page.

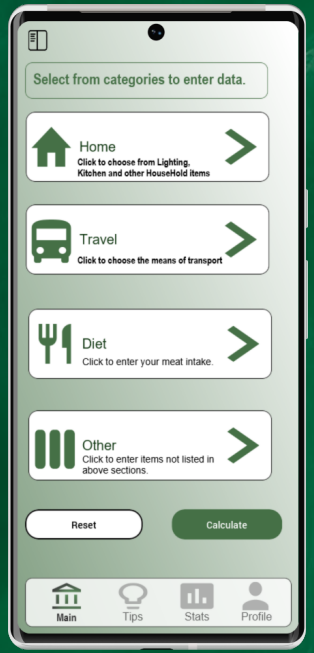
Diet: Record time spent on different dietary choices to understand your environmental impact. Tap "Save" to go back to home page.

Others: Log hours spent on various activities to gain insights into your carbon footprint. Tap "Save" to go back to home page.

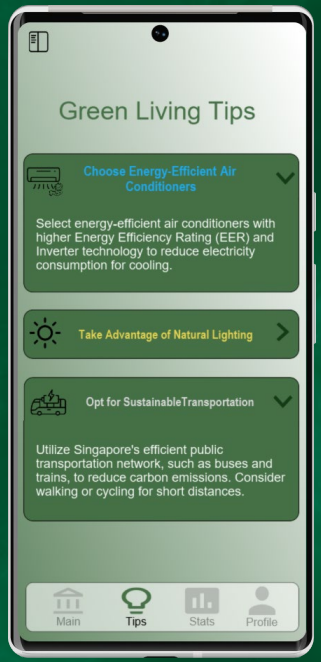
The “Calculate" button allows users to calculate their carbon footprint based on the logged hours, enabling them to make informed decisions and take steps towards reducing their environmental impact.

Overall GUI flow

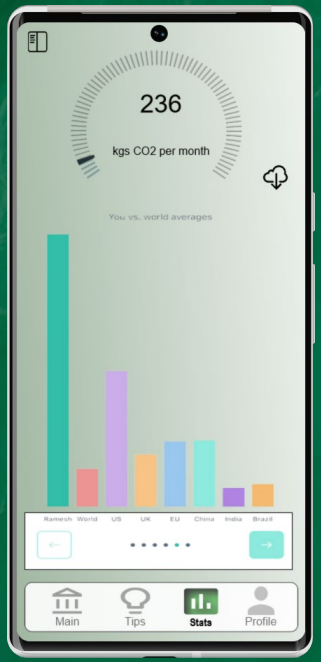
Home Page



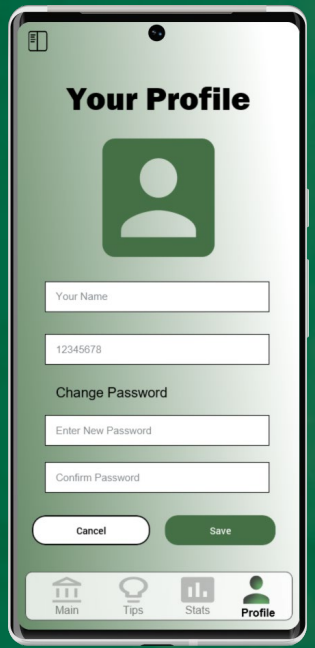
Tips Pages



Stats Page



Profile Page



Notes

The home page, with its bottom navigation bar, serves as the main dashboard of the CarbonAware app, offering easy access to essential features and information. Its purposes are:

Tips: Personalized recommendations and actionable tips for reducing carbon footprint.

Home: Choices to choose from when entering data for each category

Stats: Detailed insights and visualizations of carbon footprint data over time.

Profile: Manage personal information, settings, preferences, sustainability goals, and achievements.

Contribution

Dinesh:

- Welcome screen(UI)
- Login functionality(Database and UI)
- Home utility section(UI)
- User profile(Database and UI)
- Travel page(Database and UI)
- About page(UI)
- Bottom Navigation Bar(UI)

Ramesh:

- Home page(UI)
- Diet page(Database and UI)
- Tips page(UI)
- Stats page(Database and UI)
- Navigation drawer(UI)
- Website view (UI)
- Kitchen Appliances page(Database and UI)

Features used:

Basic Features:
- Use of CardView
- Use of Bottom Navigation Bar
- Using Splash Screen with music or with Text-to-Speech

Advanced Features:
- Using Web View to view web pages within app.
- Cloud Database (e.g., Firebase) for User Login/Authentication:
- Use of Navigation Drawer
- Integration with other module mini-project
- Use of RecyclerView with Item Selection

Self-Direct Learning Features:
- NoSQL Cassandra (AstraDB) Database for User Input and Data Storage:

Thanks!

CREDITS: This presentation template was created by **Slidesgo**, and includes icons by **Flaticon**, and infographics & images by **Freepik**

Resources:

UI Designer : Justinmind