GreenPulse

Feasibility Presentation

CS410

Team Bio

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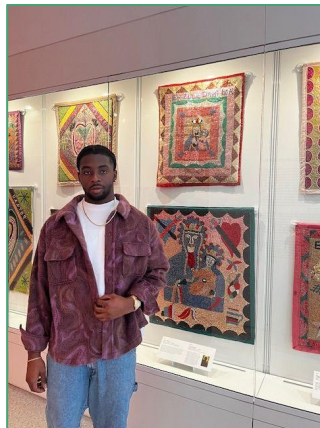
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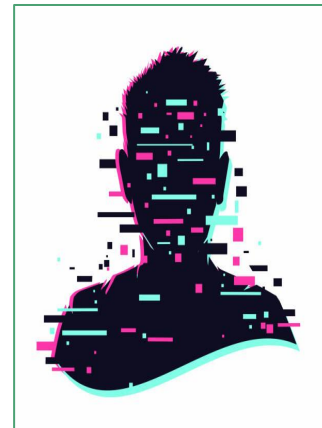
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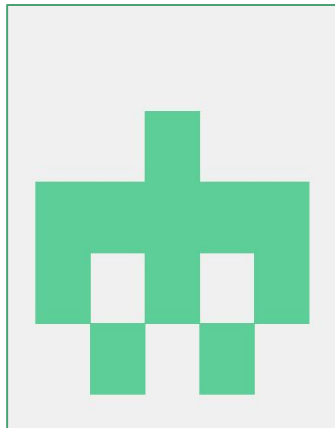Feasibility Presentation

Elevator Pitch

GreenPulse empowers you to live sustainably, effortlessly. Scan any product anywhere, and GreenPulse unlocks a wealth of up-to-date, reliable information on the product's environmental impact. Make informed choices, reduce your carbon footprint, and join the eco-conscious movement... all with GreenPulse in your pocket!

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The Societal Problem

With the climate's current terrible state, making active choices to lessen our effect on the environment is becoming more and more important each day. The lack of knowledge of which options are more eco-friendly to the general population is the issue.

A large amount of society wants to be more eco-conscious. Recent surveys have observed that over 85% of participants have made changes in the last 5 years to their purchase habits. (Global Sustainability Study 2021: Initial insights).

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2.3 Current Process Flow
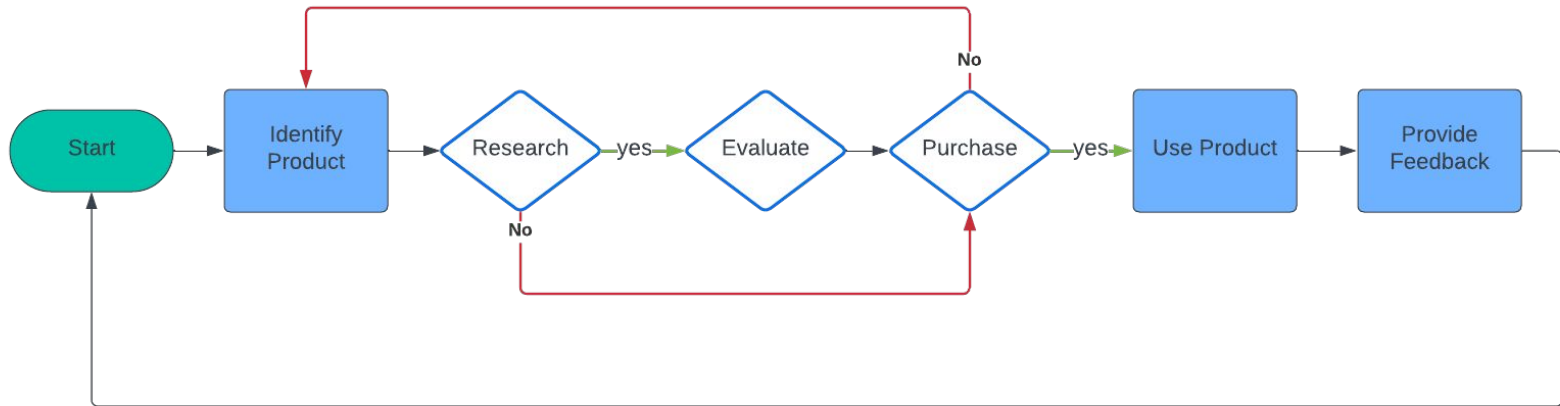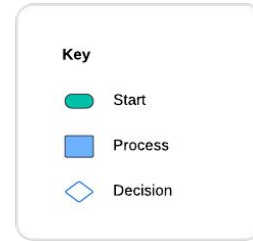
Solution

GreenPulse is a smartphone application designed to facilitate sustainable living effortlessly. By allowing users to scan products and access real-time trustworthy information on their environmental impact, the app empowers individuals to make informed choices, reduce their carbon footprint, and actively participate in the eco-conscious movement.

GreenPulse provides a convenient tool for promoting sustainability in everyday life.

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3.1 Solution Characteristics

GreenPulse provides users an instant access to information regarding how eco-friendly a product is and the impacts of said product.

This can be done in multiple different ways, such as searching for a product by name, or scanning in the product to obtain all of the available information that we have about it.

What Will It Do?

1. Product Scanning: Users can scan product barcodes or input product details to retrieve real-time information about the environmental impact of a specific item.

2. Environmental Data: The app provides detailed information on the environmental footprint of products

3. Trustworthy Information: Emphasizing real-time, trustworthy information indicates that GreenPulse relies on accurate and up-to-date data sources to provide users with reliable insights into the sustainability of products.

What Will It Do? Cont.

4. Informed Decision-Making: The primary goal seems to be empowering users to make informed choices by arming them with environmental data.

5. Convenience: The emphasis on "effortlessly" shows that the app aims to make sustainable living easy and convenient for users.

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What It Will Not Do

1. Limited Product Coverage: The app's effectiveness will depend on the availability and accuracy of data in its database. It may not cover all products, especially those from smaller or less-known brands, or newly released items.

2. Limited to Scanned Products: May not provide information on broader lifestyle choices or behaviors that contribute to sustainability. It will focus on individual product scans and may not cover aspects such as energy consumption, transportation choices, or overall lifestyle impacts.

3. Will Not Influence Personal Habits: While the app will provide information, it does not actively influence or change user behavior. The decision to make more sustainable choices will ultimately rest with the user, and the app may not address behavioral or motivational aspects.

What it will not do Cont.

4. Dependent on User Engagement: The app's success relies on users consistently scanning products and actively engaging with the information provided. It may not be effective if users do not regularly use the app or if there is low user engagement.

5. May Not Consider Local Context: Environmental impact can vary based on geographical location and local conditions. GreenPulse may not fully consider regional variations, making it less effective in certain locations or contexts.

Solution Process Flow
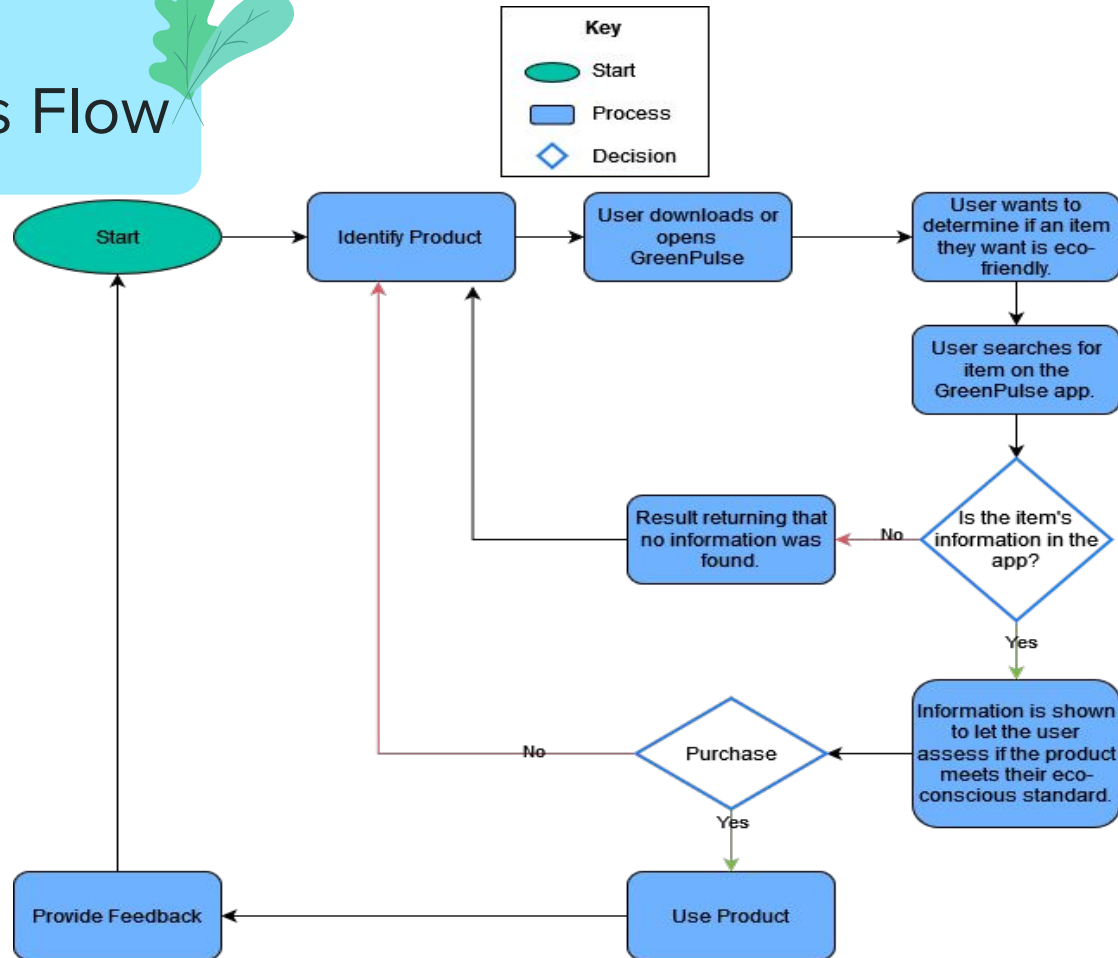
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3.5 Competition Matrix

Feature	GreenPulse	GoodGuide	Buycott
Focus	(Environmental impact of products)	(Product sustainability ratings)	(Consumer activism & boycotts)
Barcode Scanning	✔	✔	✔
Searchable Items	✔	✔	✔
Usable on Smartphones	✔	✔	✔

Competition Matrix
Full Green Breakdown:-

Feature	GreenPulse	GoodGuide	Buycott
Ingredients Information	✔	✔	
Manufacturing Information	✔		
Packaging Information	✔		
Social Impact	✔	✔	
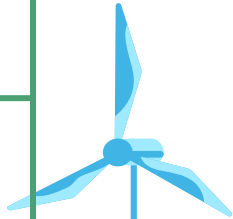
Competition Matrix
Reduce Carbon Footprint:-
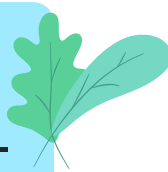
Feature	GreenPulse	GoodGuide	Buycott
Direct Calculation (estimates footprints per product)	✔		
Products Comparison (side-by-side)	✔		
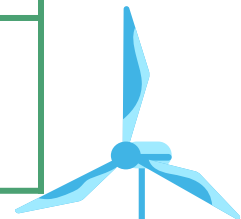
Development Tools

IDE - VSCode

Version Control - Git (GitHub)

Continuous Integration and Continuous Deployment - GitHub Actions and Workflows

Selected Language

- **Frontend -** JavaScript (ReactJS or React Native)
- **Backend -** JavaScript (Node.js)

Testing Framework(s) - Jest

Documentation - JSDoc

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Major Functional Components

Our tech stack:

App Deployment - Docker

Development Framework - ReactJS or React Native

Backend server - Node.js

Database Management System - PostgreSQL

Server side language - JavaScript
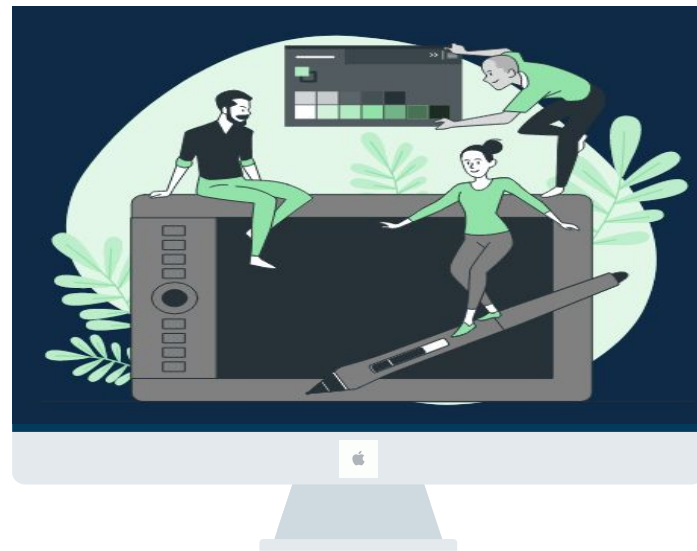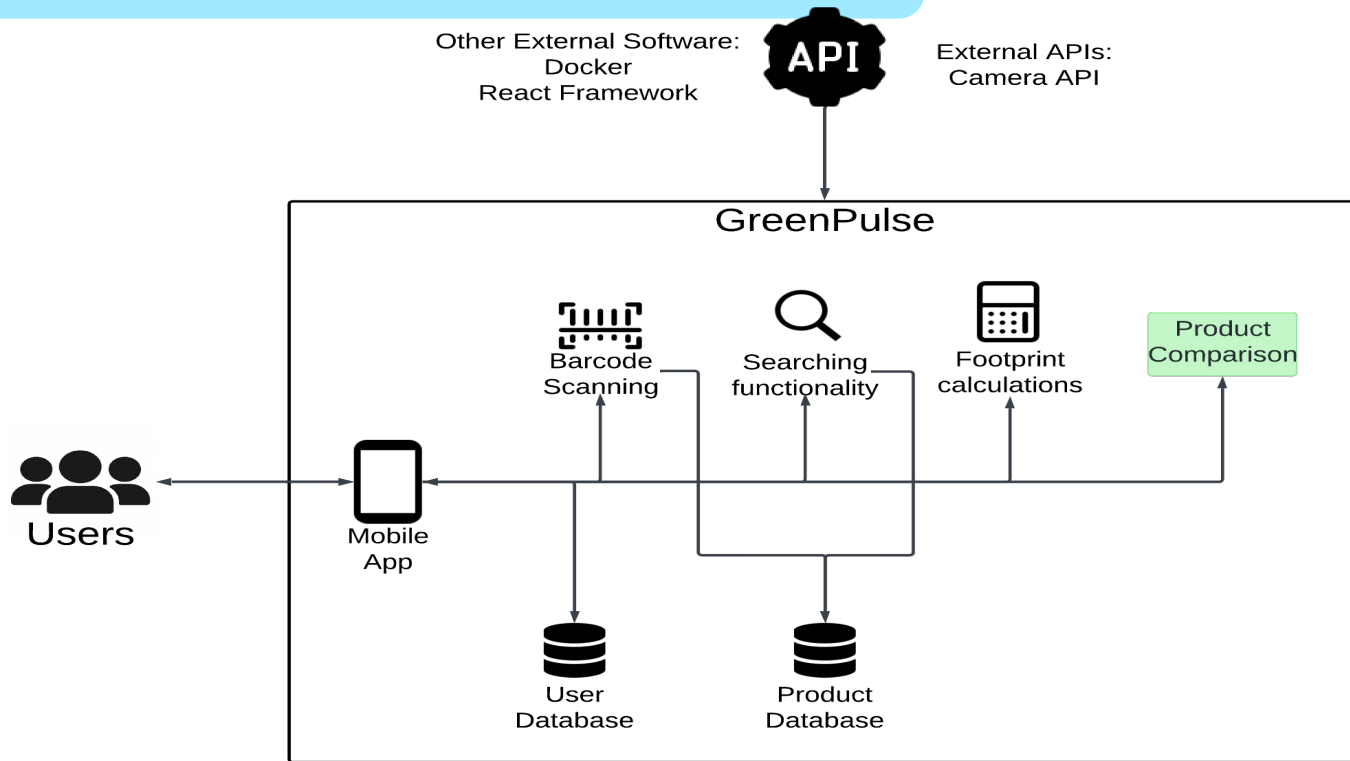
Barcode Scanner Integration - ZXing (Zebra Crossing) library

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Major Functional Components Diagram

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Risks - Customer & End User

Risk: Technical users find the app search parameters and information too limiting.
Probability: 3
Impact: 4

Mitigation: Allow the access for custom boolean search parameters and have user reviews to provide additionally needed information.

Updated Probability: 1
Updated Impact: 3

Risk: Non-technical users do not find the app easy enough to pick up and use.
Probability: 3
Impact: 5

Mitigation: Ensure that the app has an easily navigable interface that shows where information is and how to access it. Another element could be to add a video tutorial example of searching for a specific item in each possible way.

Updated Probability: 1
Updated Impact: 4

Risks - Technical

Risk: Information is not up-to-date.
Probability: 3
Impact: 4

Mitigation: List a timestamp of when the information is provided. When 2 weeks pass, or a major event affecting the information occurs, check and research to see if new information is available via evaluated sources, then add that information. Also allow user responses to flag when information needs to be updated.

Updated Probability: 1
Updated Impact: 4

Risk: Information provided is inaccurate.
Probability: 3
Impact: 5

Mitigation: Complete routine validation checks (provided by evaluating how a company sources a product) every 2 weeks on the information and allow user responses to flag when something is inaccurate.

Updated Probability: 1
Updated Impact: 5

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Risks - Security

Risk: Information being maliciously manipulated.

Probability: 3

Impact: 5

Mitigation: Ensure routine vulnerability checks and implement up-to-date security protocols. Encrypt the database. Do not allow data to be updated by a single user and require it to have more of the team's input.

Updated Probability: 2

Updated Impact: 3

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Risks - Legal

Risk: Incorrect information is provided for a company and legal action is threatened. As an example: inaccurate information could give the perception that a company is not eco-friendly.

Probability: 3
Impact: 5

Mitigation: As similar to the technical risks, complete routine validation checks (provided by evaluating how a company sources a product) on the information and allow user responses to flag when something is inaccurate.

Updated Probability: 1
Updated Impact: 5

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Conclusion

With the climate's rapidly declining state being a present constant pressure on nearly everyone's mind, GreenPulse's main objective is to allow any user to commit to and maintain making eco-conscious choices in their daily purchasing lives.

We all have to and can make an impact together!

By seeing the eco-friendly rating and information of a company, any user will be able to make the best environmental choice!

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Appendix

Feasibility Deliverable

References

Berg, Achim, et al. "Fashion on Climate." *McKinsey & Company*, McKinsey & Company, 26 Aug. 2020, www.mckinsey.com/industries/retail/our-insights/fashion-on-climate.

"Buycott.Com." *Wikipedia*, Wikimedia Foundation, 28 Sept. 2023, en.wikipedia.org/wiki/Buycott.com.

Global Sustainability Study 2021: Initial Insights, www.simon-kucher.com/sites/default/files/studies/Simon-Kucher_Global_Sustainability_Study_2021.pdf. Accessed 24 Jan. 2024.

Hodgkins, Kelly. "Daily App: Goodguide Helps You Find Green, Healthy and Socially Responsible Products." *Engadget*, Engadget, 22 Apr. 2014, www.engadget.com/2014-04-22-daily-app-goodguide-helps-you-find-green-healthy-and-socially.html.

Studio, Quest Impact Design. "Sustainable Apparel Coalition." Improving Environmental and Social Performance in the Apparel and Footwear Industry", www.apparelcoalition.org/. Accessed 12 Feb. 2024.

"World Resources Institute: Making Big Ideas Happen." *World Resources Institute | Making Big Ideas Happen*, 2 Feb. 2024, www.wri.org/.

ne2pi. "Anonymous Vector Icon. Incognito Sign. Gamer Profile Avatar. Privacy..." iStock, www.istockphoto.com/vector/anonymous-vector-icon-incognito-sign-privacy-concept-human-head-with-glitch-face-gm128469 3553-381750893. Accessed 17 Feb. 2024.