EcoTrace

Full-Stack-Hack
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Contents

1 What is EcoTrace?

EcoTrace is an application to visualise the environmental impact that a product has by calculating the air miles of how far the product has travelled. You are able to get the country of origin by reading the barcode that is on the packaging of a product. It will then calculate the distance by using your current location and output the impacts (Carbon Dioxide emissions, etc...). It will also use the data it collects and compare it with other brands, recommending more environmentally-considerate products for the user to purchase instead.

2 What Challenges we entered

Google Cloud,
Github,
BCS,
InvestTec,
Code Wizards.

3 Origin

Our goal is to reduce the amount of pollution caused by transporting products. We found that 90% of the products are transported by cargo ships and 15 cargo ships release the same amount of Carbon Dioxide as all the cars in the world (750 million). We wish to make a difference by educating the rest of the world on the negative impact their products make on our atmosphere. We are hoping this project will make a difference and improve the lives of others.

Our plans are to then compare the 'food miles' with other brands products and find which brand is the most eco-friendly. This not only advertises the brands with better carbon footprints but also increasing their business. This would persuade them to partner up with us forcing the industry to move in a more eco-friendly direction to keep up with the free market, which would decrease the overall Carbon Dioxide emissions as a whole.

4 Implementation

We would be using a web application to display the 'food miles' each product produces.

The backend was made with:

- Node.js - Server-side scripting
- Express - Api calls

The frontend was made with:

- Bulma css libary - Style
- Quagga - barcode recognition
- React - for mobile application

On the web application, you would have the option to type or scan the barcode using your web cam, or camera if on mobile. The application will read the barcode using the Quagga JS library and be able to determine the country of origin through reading the first 3 digits and comparing it to the list of country codes. It would then utilize the Google maps api to map the distance between the country of origin and their current location giving the distance and converting it to the amount of 'food miles' and CO2 emissions. This would then be outputted to the bottom of the screen and underneath there would be similar products that are recommended which have lower CO2 emissions.

5 Business Plan

Our revenue would be generated by recommending a more eco-friendly alternative product for the customer. We would then take a cut of a flat 15% which we found is the same as Ebay, Amazon and most other retailers. The costs of maintaining our website would be £5.50 per month and for the Google api, 50p per 1000 map loads and £10 per year for our domain (ecotrace.net).

Assuming the average customer spends £7.50 per product and we get a average of 100,000 sales a year, this would mean a revenue of £11,250. The cost of Heroku hosting our website for one year would be £66 (£5.50*12), the map loads are £50 per year and the domain being £10. This would come up to a total of £126 making our gross profit £11,124 per annum.

6 Problems we ran into

Fortunately as we are all close friends, we didn't run into any communication issues and worked very well together. We did however run into some technical issues with the JS library and changing our presentation software mid-way through. The team size was also an issue as we had less people then most other teams giving us more work per person.

7 What we Accomplished

We fully implemented a front and back end web application that positively effects the environment within the given time frame.

8 Ambition

Our Ambitions are to increase our market to further reduce the Carbon emissions, Include nutritional value and allergic information, reduce the green house effect and improve the well being of everything on this planet due to global warming effecting more then just humans. Plants and Animals are greatly effected with ice caps melting or plants being unable to adapt to the new and hotter environment.

9 Authors

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