CS CAPSTONE PROBLEM STATEMENT

OCTOBER 11, 2018

SUSTAINABILITY AND CARBON FOOTPRINT CORVALLIS APP

PREPARED FOR

OREGON STATE UNIVERTITY SCHOOL OF AGRICULTURAL AND LIFE SCIENCE

ANN SCHREERER

PREPARED BY

GROUP 77

DOMINIC WASKO
ROHAN BARVE
SATHYA RAMANATHAN

Abstract

Depending on individual behavior and choices, each person has a different level of impact on the planet. The impact is usually measured by how much carbon dioxide and other carbon compounds that an individual produces. This is commonly referred to as a carbon footprint. Products created by others contribute to the carbon footprint of an individual if they purchase and/or use them since the act of consumption contributes to the overall demand for these products and services. Individuals can roughly calculate their carbon footprint by measuring different activities. Common figures that can help calculate an individual's carbon footprint include the area where they live, the size of their house, the temperature that they keep their house at, the amount of electricity they use, and the number of cars they drive, to name a few examples. The goal of this project is to increase the public's awareness of their carbon footprints and hopefully encourage them to take measures to begin reducing their carbon footprint. Creating tools for individuals to use to become more informed about their impact on the environment, and providing information about the ways that each individual can reduce their own carbon footprint will increase public awareness, and help individuals who may have been unaware about the size of their impact, or the steps they should take to reduce their impact.

Contents

1 Problem Description

There are many potential solutions to environmental problems, and working on reducing the impact that humans have on the planet; however, many of them require large amounts of money or technology that is not widely available. Many of these projects focus on cleaning up messes that humans have already made or reverting damage that has already been done. This is a very inefficient way of solving our ecological problems since it will always be more expensive and time consuming to focus on repairing the damage that has already been done. The best way to solve this problem is to take steps to reduce the negative impact on the planet before it happens. Without the creation of new laws, it is not realistic to talk about forcibly modifying human behavior to reduce carbon production. The only solution is to increase public awareness about these issues and educate the public about how to take these steps on their own to each contribute to limiting their individual carbon consumption.

2 Proposed Solution

As briefly mentioned above, the solution to the problem requires willing individual action. We cannot force people to make changes to their lives, nor would it be ethical to force the public to do something that they do not want to do. The proposed solution is to create a mobile application that would allow and encourage people to learn more about their own carbon footprint, as well as learn about ways that they can reduce their carbon footprint. The application serves two purposes. First, it should allow users to roughly calculate their own carbon emissions. Numbers and statistics about carbon emissions may seem confusing to individuals, and comparing their individual emissions to emissions of an entire country may minimize the feeling of individual significance or personal satisfaction. To get around this, the application will generate ”scores” for each user based on information that they provide on their living habits, and use that information to let people know how they compare to the average person. Second, the application will need to educate users on ways that they can cut back on their consumption so that they know what steps to take to improve their ”score.” One example could be advising a particular user ways that they can save water if they indicate that they use more water than the average person.

3 Performance Metrics

Considering the nature of the application and the desired effects, it would be difficult to estimate the change in carbon emission before and after the release of the application. Even if we had access to data that accurate and precise, we would need to establish correlation between the change, and prove that the change was directly caused by our application. For evaluating our work, we can use test users to test usability and understanding of the interfaces of the application, and the information that is presented within the application. We can guage the overall usability of the application this way; however it is ultimately our responsibility to work closely with our client to ensure that specific milestones for application features are set. Working closely with the client and getting feedback on features before they are implemented as well as acceptance testing to ensure that said features meet or exceed client expectations is part of this process. An example would be conducting a conference with the client to list features in order of importance, how feasable they are to implement, setting completion dates for these features, and reporting our progress back to the client for feedback and advice. One aditional way to measure the performance of this application would be statistics on user reviews and downlaods after deployment.