User tracking report on the Carbon countdown website

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1 Introduction

This is a report on the user tracking on a website called "Carbon Countdown". It is a website that seeks to alarm and inform people about our carbon emissions and climate change. It follows a three step program of reasoning. First people open the website and get shocked with the "big scary timer" (definition given by a test user) and scroll down to find a short text and video that puts the timer into context. Then, they go onto the second page where they can interact with graphs and data to better understand the situation. Finally, they get redirected at the bottom of that page to a page where they can look up how to help fix the situation. This page serves as a catalogue of organisations that have proven their worth and gives the opportunity to the user to pick the one they like the most. In this report we will then be discussing how the tracking helped with the improvement of this website, how it provided valuable information and how it taught me practical knowledge in the way.

2 Reasoning

After careful consideration I have made the choice to go with a custom made tracker. I decided to do this as it allowed me to make the tracking fully work on local hosting (Google Analytics only working on web hosting for example) as well as allowing me to choose exactly what I want to track and no more than that. Besides that I also thought it would be a good exercise and learning opportunity to dive deeper into Flask. I decided to track browsers and OS for compatibility purposes because if there happened to be bugs or issues I can know if my website happened to not be compatible with some browser or OS. Then, I decided to track the pages accessed and the time on it because this could help me prove/reject my "three step idea" by looking into people's behaviors. I also decided to track the IP address and amount of total users for demographics purposes. Finally I also made sure to track load times since I

had quite a few embedded files which I was afraid could make the website too slow.

3 Insights

After showing my website to friends and classmates and then looking over the data, I gained some valuable insights. This led me to modify certain aspects of the website to enhance user experience. For example, I noticed that load times were longer than expected, particularly on the data page which had multiple embedded files. To address this, I went with I frame instead of the local scripting using divs and anchor tags. I also found out it wouldn't work on opera originally because it had tracker blockers, so I had to adjust the tracking code accordially. Additionally, I found that users were spending less time on the second page, which suggested that the static graphs and data might not be engaging enough. To remedy this, I introduced more interactive graphs using plotly and clearer shorter texts which resulted in increased user engagement. I also think next time I should set it up in a way that I can turn off the tracking when I am debugging and adjusting as those helped fill the database way more than it should have.

4 Benefits and Implications

The tracking data provided several benefits and also raised some concerns and implications.

4.1 Benefits and Concerns

4.1.1 Benefits

- Enhanced user experience: By analyzing user behavior, we can tailor content and design to better meet user needs and preferences. Such as the example given in the insights
- Improved website performance: It helped me increase the speed of the website and compatibility by letting me see where the issues where.
- Informed decision-making: It helped me visualise if my website was being successfull or not and make a plan

4.1.2 Concerns

- Invasion of privacy: Users may feel uncomfortable knowing that their online activities are being tracked without their explicit consent. This could be fixed by making the code open source and an explicit warning about the data collection.

- Data security risks: Storing user data poses security vulnerabilities, increasing the risk of data breaches or unauthorized access. Since my database as it is, is not properly secure. While with an off the shell tracker i don't have to worry about it.
- Bugs and issues: By making the tracking by myself with my limited knowledge by mixing flask documentation, tutorials, AI, friends tips, etc... My code was probably not ideally optimized and could lead to problems in some scenarios I could not find out through testing.

4.2 Implications

4.2.1 Implications on Collections

By being a website owner or administrator, collecting user data entails a responsibility to prioritize user privacy and data protection. Transparent communication about data collection practices, obtaining user consent, and implementing robust security measures are essential to build trust and maintain compliance with data privacy regulations. So it remains very important to only collect what is truly deemed necessary and not go overboard as it can lead to data leaks and damage to personal lives

4.2.2 Implications on Using an Off-the-Shelf Tool

Using a third-party tool for user-tracking introduces additional considerations. While off-the-shelf solutions offer convenience and functionality, they also pose risks related to data ownership, security, and compliance. It's crucial to thoroughly evaluate the privacy policies and terms of service of third-party providers to ensure alignment with privacy principles and legal requirements. Because of the lack of transparency of those companies, having to share this data with third parties as well as everything I said earlier. I opted then to not use an off the shelf tracker