Green IT Project Report

1. Presentation of the Project

1) Overview

The Green IT Project aims to demonstrate a minimalistic and environmentally responsible approach to web development. Our project is called " EcoBazaar " and it's an eco-responsible e-commerce platform that offers second hand, recycled and eco-designed products. The website focuses on essential features, avoiding unnecessary complexity to minimize energy consumption and carbon emissions. It offers a simple, fast, and accessible user experience while being mindful of its ecological footprint.

2) Presentation of the features

Our platform allows users to perform several actions :

- Create an account(sign up/login)
- Add their own eco-friendly products
- Manage, view, delete, update their products from their personal account
- Research products through the catalog
- Admin users can remove customers' sell order
- Manage their cart, remove items and checkout

3) Approach taken to minimize the environmental impact

To create this website, we mainly focused on a simple technology stack to reduce as much as possible the website's carbon footprint.

- Lightweight front-end such as HTML, CSS and Vanilla JavaScript without any heavy frameworks to optimize the loading time and reduce energy consumption.

- Lightweight back-end such as Node.js with Express.js, using minimal dependencies to optimize performance and reduce server energy usage.

- Use of a NoSQL database (SQLight) hosted on efficient cloud services to avoid heavy relational queries and minimize resource consumption.

- Deployment on cloud platforms known for better energy management and green certifications (e.g., AWS, GCP, or others if specified).

We aimed to limit the number of HTTP requests, reduce image sizes, and avoid loading unnecessary libraries or scripts.

By using the website “websitecarbon.com”, we achieved a carbon rating of A+ which is cleaner than 100% of all web pages globally. It also appears that the website is running on a sustainable energy.

Additional Features

- Carbon footprint tracking: Calculate and display the carbon footprint for each product sold.

- Eco-friendly products: Highlight items with eco-friendly labels (e.g., "recycled," "low energy").

- Energy-efficient code: Minimize server requests, compress images, and optimize front-end resources.

- Eco mode for UI: Add a dark theme to save energy on OLED screens.

- Product filter: Allow users to filter eco-friendly or refurbished products.