

**PROJECT SYNOPSIS REPORT**

**ON**

**ECO-CONSCIOUS – Eco-Friendly Website for Shopping**

**SUBMITTED**

**TO**

**Sana Bharti**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**FOR**

**Back End Engineering(22CS026)**

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## Problem Statement

In today's fast-paced, convenience-driven world, consumers are increasingly facing a significant dilemma: how to make environmentally responsible shopping choices while being surrounded by a vast array of products that prioritize price, variety, and ease of access. Although more people are becoming conscious of their environmental impact, several challenges prevent them from making sustainable decisions when shopping online. These obstacles include:

- **Lack of Transparent and Comprehensive Information:** Most online shopping platforms provide minimal, if any, information regarding the environmental impact of the products they sell. Consumers are often left unaware of the ecological footprint associated with manufacturing, packaging, shipping, and disposal, which makes it difficult for them to determine whether they are purchasing eco-friendly products or contributing to environmental harm.
- **Environmental Consequences of Conventional Shopping:** The continued production, consumption, and disposal of products without considering sustainability contributes to a range of environmental issues such as pollution, deforestation, excessive waste generation, and the acceleration of climate change.
- **Lack of Emphasis on Sustainability by Online Platforms:** The majority of online shopping platforms prioritize convenience, low prices, and a wide product selection over sustainability. Eco-conscious consumers are often left without the tools or guidance to make informed, environmentally responsible choices, as product recommendations rarely consider sustainability or environmental impact in their algorithms.
- **Difficulty in Discovering Eco-Friendly Alternatives:** Even when consumers are motivated to make greener choices, they are often faced with the challenge of finding eco-friendly alternatives. Without clear guidance or easily accessible information, people struggle to identify sustainable products that align with their values, leaving them to revert to purchasing conventional, less sustainable options.

## Solution: Eco-Conscious

- **Providing Clear and Accessible Information:** Eco-Conscious offers consumers straightforward, detailed information about the environmental impact of products. This includes data on sustainability, carbon footprint, recyclability, and ethical production practices. By presenting this information in a user-friendly format, Eco-Conscious enables consumers to make informed decisions and choose products that align with their environmental goals.
- **Recommending Eco-Friendly Alternatives:** The platform suggests sustainable alternatives to conventional products, offering users a range of greener options. Through intelligent algorithms that analyse product impact, Eco-Conscious guides consumers toward better choices that minimize environmental harm while still meeting their shopping needs.
- **Promoting Responsible and Ethical Shopping:** Eco-Conscious creates a dedicated space for eco-conscious consumers by prioritizing products that adhere to strict environmental standards. The platform emphasizes ethical sourcing, reduced carbon emissions, minimal packaging waste, and sustainable materials, providing consumers with the tools to make purchases that reflect their ethical and environmental values.

## **Title of Project**

### **Eco-Conscious – Eco-Friendly Website for Shopping**

#### **Project Overview:**

**Eco-Conscious** is a forward-thinking platform aimed at transforming the way consumers shop by placing sustainability at the forefront. In response to the growing environmental concerns surrounding modern shopping habits, this platform offers a new approach that emphasizes transparency, eco-conscious decision-making, and ease of use. Unlike conventional e-commerce platforms that focus primarily on convenience and price, Eco-Conscious equips users with the information they need to make environmentally responsible purchases. Through the use of environmental impact scores and detailed sustainability insights, the platform helps users make informed decisions while shopping.

#### **Key Features:**

- **Transparency:** Eco-Conscious provides users with comprehensive information about the environmental impact of products. This includes detailed metrics such as carbon footprint, recyclability, and ethical sourcing, allowing users to fully understand the consequences of their purchases.
- **Eco-Friendly Recommendations:** The platform actively suggests greener alternatives to conventional products, helping users find sustainable options effortlessly. These recommendations are tailored based on the environmental impact of the products, making it easy for consumers to switch to more eco-friendly choices.
- **Intuitive Interface:** The platform is designed with user accessibility in mind. Its clean, simple interface makes it easy for shoppers to navigate, learn, and shop sustainably. Educational features are embedded to inform consumers about sustainability in a way that's engaging and user-friendly, ensuring that responsible shopping is convenient for all.

## Options Available to Execute the Project

To successfully execute the Eco-Conscious e-commerce platform, several options are available in terms of technology, development approach, and implementation strategies. Below are the key options:

### 1. Technology Stack:

- **Frontend Development (User Interface):**
  - **React.js:** A popular JavaScript library for building dynamic and responsive user interfaces.
- **Backend Development:**
  - **Node.js with Express:** A widely-used option for building scalable and fast server-side applications.
- **Database:**
  - **MongoDB:** A NoSQL database ideal for handling flexible data structures, such as product listings and user preferences.
- **Environmental Impact Data Integration:**
  - **Custom Database:** Build a custom dataset that stores sustainability information and allows for easy updates.

### 2. Development Methodology:

- **Agile Development:** A flexible, iterative approach to development where features are built, tested, and refined over short sprints. This method allows for continuous feedback and improvements.
- **Waterfall Development:** A more traditional approach, where all phases (planning, design, development, testing, and deployment) are completed sequentially. This may be useful if the project has fixed requirements.

### 3. Hosting & Deployment:

For the deployment of the Eco-Conscious platform, we will utilize Vercel for the front-end React application and Render for the back-end Node.js/Express server.

- **Vercel** offers seamless integration with GitHub, enabling automatic deployments and optimized performance for static sites and React applications.
- **Render** supports effortless deployment of full-stack applications, providing a reliable and scalable environment for the back-end.

## **Advantages / Disadvantages of the Eco-Conscious Project**

### **Advantages:**

1. **Promotes Sustainable Shopping:** The platform actively encourages users to make environmentally responsible choices by showcasing eco-friendly product alternatives. This helps to cultivate a culture of sustainability among consumers.
2. **Empowers Consumers:** By providing transparency through sustainability scores and detailed product information, users can make informed decisions that align with their values. This empowerment fosters a sense of responsibility and engagement in their shopping habits.
3. **Fosters Mindful Consumption:** Eco-Conscious encourages users to think critically about the long-term environmental impact of their purchases. This shift in mindset leads to more thoughtful shopping habits, reducing impulsive buys and promoting quality over quantity.
4. **Contributes to Environmental Protection:** By promoting eco-friendly alternatives, the platform helps decrease the overall demand for harmful products. This can lead to a significant positive impact on the environment, contributing to pollution reduction and conservation efforts.
5. **Educational Resource:** Eco-Conscious can serve as an educational tool for consumers, providing insights into sustainability issues and the importance of eco-friendly products. This knowledge can lead to more responsible consumer behavior and a broader understanding of environmental impacts.
6. **Community Building:** The platform has the potential to foster a community of eco-conscious consumers who share tips, reviews, and experiences. This can create a supportive environment where users feel encouraged to make sustainable choices together.

### **Disadvantages**

1. **Challenges in Data Collection:** Gathering accurate and up-to-date sustainability data for a wide range of products can be challenging and time-consuming.
2. **Limited Market Adoption:** Eco-conscious shopping, while growing in popularity, may still be a niche market compared to traditional e-commerce platforms.
3. **Competition with Established Retailers:** Eco-Conscious may face stiff competition from established e-commerce giants that are beginning to incorporate sustainability initiatives into their offerings.