**PROJECT SYNOPSIS REPORT**

**ON**

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

**SUBMITTED**

**TO**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**FOR**

**Back End Engineering(22CS026)**

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**Problem Statement**

Today’s consumers face a growing challenge: how to make environmentally friendly shopping decisions in a world focused on convenience and variety. Several key issues make it difficult for people to shop sustainably:

* **Lack of Clear Information**: Most online shopping platforms do not provide enough details about the environmental impact of the products they sell, making it hard for consumers to know if they are buying eco-friendly items.
* **Negative Environmental Effects**: The unchecked production and consumption of goods contribute to pollution, excessive waste, and climate change, worsening the global environmental crisis.
* **Limited Focus on Sustainability**: Most online platforms emphasize convenience and price, giving less attention to sustainability in their product recommendations.
* **Difficulty Finding Alternatives**: Without proper guidance, consumers struggle to discover eco-friendly alternatives, even when they want to make greener choices.

Eco-Conscious tackles these challenges by:

* **Providing Clear Information**: Offering easy-to-understand details about the environmental impact of products so that consumers can make informed choices.
* **Recommending Eco-Friendly Alternatives**: Suggesting better, more sustainable products based on their environmental impact, helping consumers switch to greener options.
* **Supporting Responsible Shopping**: Creating a platform that empowers eco-conscious consumers by focusing on products that match their ethical and environmental values.

**Title of Project**

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

**Project Overview:**

Eco-Conscious offers an innovative solution to the challenge of unsustainable shopping by developing a platform that prioritizes transparency and environmentally responsible consumption. Unlike traditional e-commerce websites, Eco-Conscious provides users with detailed insights into the sustainability of products, including environmental impact scores to guide their decisions.

**Key Features:**

* Transparency: Users can access clear and detailed information about the environmental impact of each product.
* Eco-Friendly Recommendations: The platform suggests greener alternatives, helping consumers choose sustainable options.
* Intuitive Interface: Designed with simplicity and education in mind, the platform makes sustainable shopping both accessible and convenient.

**Objectives & Key Learnings**

**Objective:**

The main objective of the Eco-Conscious project is to develop an eco-friendly e-commerce platform that promotes sustainable and responsible shopping practices. By providing users with transparency on product sustainability and suggesting alternative products based on their environmental impact, the platform aims to:

* Educate consumers on the importance of eco-conscious shopping.
* Reduce consumers’ ecological footprint.
* Encourage more mindful and sustainable consumption.
* Make sustainability an easy and integrated part of everyday purchasing decisions.

**Key Learnings:**

* **Understanding Sustainable Commerce:**Learn how to incorporate sustainability into the e-commerce model, focusing on reducing environmental harm and encouraging eco-friendly business practices
* **Consumer Behaviour and Education:**Explore how consumer shopping habits can be influenced through transparency in product sustainability, encouraging more responsible and mindful purchases.
* **Technology for Positive Change:**Understand how modern technologies, such as recommendation systems, can be leveraged to promote eco-conscious behaviour by suggesting alternatives based on environmental
* **User Experience Design:**Gain experience in designing an intuitive, user-friendly platform that seamlessly balances convenience with educating users about sustainability.
* **E-Commerce Functionality:**Develop skills in building key e-commerce features such as product browsing, filtering, and recommendations, all while embedding eco-conscious principles.
* **Environmental Impact Assessment:**Learn how to assess the environmental impact of products and utilize this data to guide better decisions for both consumers and businesses, promoting a greener marketplace.

**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:**

* **Cloud-Based Solutions (e.g., AWS, Google Cloud, or Heroku)**: Cloud platforms offer scalability, reliability, and flexibility, ensuring smooth operation as the platform grows.

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

**Advantages:**

1. **Promotes Sustainable Shopping**: Encourages users to make environmentally responsible choices by offering eco-friendly product alternatives.
2. **Empowers Consumers**: Provides transparency by displaying the sustainability scores of products, allowing users to make informed decisions that align with their values.
3. **Fosters Mindful Consumption**: Encourages users to think about the long-term environmental impact of their purchases, leading to more thoughtful and mindful shopping habits.
4. **Contributes to Environmental Protection**: By promoting eco-friendly alternatives, the platform helps reduce the overall demand for harmful products, leading to a positive environmental impact.

**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.

**References**

Below are the references to the documentation used in the development of the Eco-Conscious project:

* **reactjs:** <https://reactjs.org/docs/getting-started.html>
* **nodejs:** <https://nodejs.org/en/docs/>
* **expressjs:** <https://expressjs.com/en/starter/installing.html>
* **mongodb :** <https://www.mongodb.com/docs/>
* **mongoosejs:** <https://mongoosejs.com/docs/>
* **heroku:** <https://devcenter.heroku.com/categories/reference>