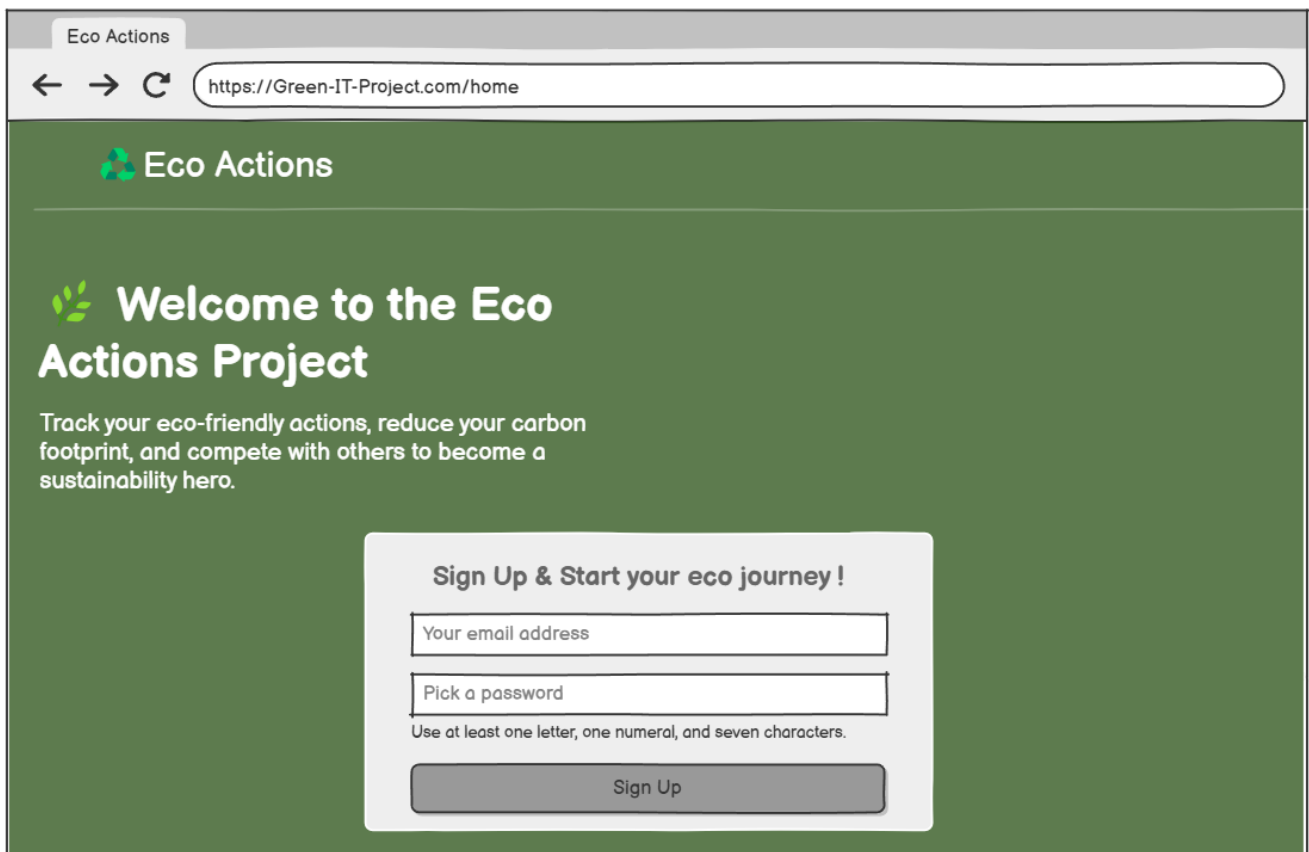Iness Bennai
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GREEN IT
Project

EcoHabits - Platform for Tracking Daily Eco-Friendly Actions

ING1 - INT2

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Introduction

In today's digital age, the environmental impact of technology is often overlooked. Yet, websites and online platforms contribute significantly to energy consumption and carbon emissions.
The EcoHabits project was created with a dual purpose: to encourage individuals to adopt more eco-friendly habits in their daily lives and to demonstrate that digital platforms can be designed responsibly with a minimal environmental footprint.
Through a simple and efficient interface, EcoHabits allows users to log their daily green actions, track their positive impact, and stay motivated to make sustainable choices.
This report presents the key features of the platform, the technical choices made to reduce its carbon footprint, and reflections on eco-responsible practices in web development.

1. Presentation of the Project

1.1 Website, Features, and Environmental Approach

EcoHabits is a simple and intuitive platform where users can:

- Create an account or log into their account

- Log their daily eco-friendly habits (for example : biking instead of driving, recycling, reducing water usage).

- Track their positive environmental impact over time through a leaderboard that ranks users based on the number of eco-points they accumulate.

🏆 Global Leaderboard

See how you rank among other users based on your eco-friendly actions!

RANK	USERNAME	TOTAL POINTS	CO2 SAVED (G)
1	Paul	10	150.00 g

Green IT Mini Project – 2024/2025 | Rights: SANCESARIO Tom, Max Chartier, Musquin Maxime, Iness Bennai, Paul Emile Lamotte Chappon

An admin panel is also available, allowing administrators to:

- Add new eco-friendly actions to the system.

Admin Panel

Add New Action

Name:

Description:
Points:

Carbon Saved (g):

Add Action

Delete User

- Delete a user if necessary

Delete User

User Email:

Delete User

4

- Delete an action

The website was designed with a strong focus on minimizing its environmental footprint by:

- Keeping the interface lightweight and minimalistic.

- No use of animation or media to lower energy consumption.

- Prioritizing fast loading times and reduced energy consumption.

- Encouraging sustainable habits beyond the digital world.

1.2 Technical Choices to Reduce Carbon Footprint

Several technical decisions were made to ensure the platform remains eco-responsible:
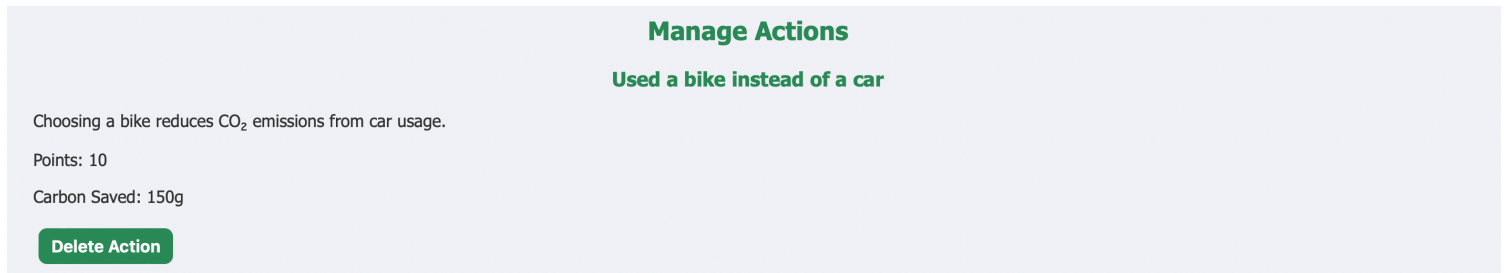
- **Optimized code**: Lightweight HTML, CSS, and JavaScript were used to ensure fast loading and reduced server demand.

- **Efficient hosting**: Hosting the website on GitHub, a platform known for its efficiency and minimal server resource usage, which helps to limit environmental impact.

- **Text-based content**: The platform contains only text, without any images or animations, in order to minimize data transfer, reduce loading times, and lower energy consumption.

- **Database efficiency**: Simple and optimized SQL queries reduce the server load and energy consumption.

1.3 Architecture of the Database and Code

- **Frontend**: HTML/CSS/JavaScript with a responsive design to work on all devices.

- **Backend**: A lightweight server handles user authentication and data recording.

- **Database**:

1. Users Table
- **id** (INT, Primary Key, Auto-increment): Unique identifier for each user.

- **name** (VARCHAR(100)): User's name.
- **email** (VARCHAR(100), Unique): User's email address.
- **password** (VARCHAR(100)): User's encrypted password.
- **role** (ENUM 'user', 'admin', default 'user'): Defines whether the account is a regular user or an administrator.

2. Actions Table
- **id** (INT, Primary Key, Auto-increment): Unique identifier for each eco-friendly action.
- **name** (VARCHAR(100)): Name of the action.
- **description** (TEXT): Description of the eco-friendly action.
- **points** (INT): Number of eco-points awarded for completing the action.
- **carbon_saved** (FLOAT): Estimated amount of CO_2 saved (in grams) by completing the action.

3. User Actions Table
- **id** (INT, Primary Key, Auto-increment): Unique identifier for each logged action by a user.
- **user_id** (INT, Foreign Key): References the user who performed the action.
- **action_id** (INT, Foreign Key): References the action performed.
- **timestamp** (DATETIME, default CURRENT_TIMESTAMP): The date and time when the action was recorded.

This modular database structure helps ensure quick access and scalability with minimal energy usage.

2. ==Discussion==

2.1 Reflection on eco-responsible practices in web development

Eco-responsibility in web development is about reducing resource consumption at every step, from writing clean code to choosing eco-friendly hosting. It's not just about the website's content but also about how it is delivered and maintained over time.

Building EcoHabits was an opportunity to apply these principles concretely, ensuring that users' efforts to be more eco-friendly are mirrored by the technology supporting them.

2.2 Challenges faced in balancing site functionality and carbon footprint reduction

- **Keeping the website simple** without making it too boring or unattractive was a real challenge.

- **Balancing tracking features** without adding too many server calls or heavy libraries like big JavaScript charting tools.

- **Ensuring accessibility** while remaining lightweight (some accessibility improvements can require extra resources).

It was a constant negotiation between features users expect and our goal of minimal impact.

2.3 Ideas for future improvement and integration of ecological principles

- Implement a "dark mode" by default to save energy on OLED screens.

- Add a progressive web app (PWA) version to reduce repeated loading from the server.

- Allow offline mode for users to log actions without needing an internet connection.

- Develop an API that can integrate with smart home devices to automatically log certain eco-friendly actions.

- Open-source the project and encourage contributions focused on eco-responsibility.

Conclusion

The EcoHabits platform demonstrates that technology and sustainability can go hand in hand. By making thoughtful technical choices and prioritizing simplicity, it is possible to create digital tools that support both user needs and environmental responsibility.

Throughout the development of this project, we balanced functionality and eco-design principles, proving that even small steps in web development can contribute to a larger ecological impact.

Looking forward, integrating even more eco-responsible practices and features will be essential. EcoHabits is just the beginning — a small initiative encouraging users and developers alike to take action for a greener future.