Title:

Campus Carbon Footprint Analyzer

SDG 13 - Climate Action

Team Name: CodeAvengers
Team Leader:Surya M
Email: kit26.ad59@gmail.com
Phone: +91 9344859103

Motivation Slide 1:

- Every campus today depends on electricity, transportation, canteens, and other services that quietly add up to a large amount of carbon emissions.
- The problem is most institutions don’t know exactly how much CO_2 they produce or where it comes from.
- Without proper data, it’s difficult to take effective steps toward becoming a sustainable or carbon-neutral campus.

Motivation Slide 2:

- Our main motivation was to build something that actually helps our college take measurable climate action.
- Students, staff, and administrators all play a role in energy use but until we track it, we can’t manage it.
- By building a system that converts daily campus activities into real emission numbers, we can clearly see our environmental impact and start taking steps to reduce it.

Proposed Solution:

- We created a web-based Carbon Footprint Analyzer for our campus.
- It collects data like electricity consumption, transport fuel use, canteen fuel, and waste generation, then automatically converts everything into CO_2-equivalent emissions.
- The system displays all this data on an interactive dashboard, where you can view total emissions, monthly trends, and category-wise breakdowns.
- It even provides practical suggestions on how to reduce emissions like using solar energy, carpooling, or switching to LEDs.
- This project directly supports SDG 13 – Climate Action, helping institutions monitor and act on climate goals in a measurable way.

Our Building Process & Workflow

- Our project is built using Python Flask for the backend and MySQL for the database.
- The dashboard is designed using HTML, CSS, and JavaScript, and the data is processed in Python to calculate emissions using scientific conversion factors.
- Here's how the process works:
    a. Admins enter data like monthly electricity use or fuel consumption.
    b. The system fetches the correct emission factor from the database.
    c. It calculates the total CO_2 generated.
    d. The dashboard shows all results visually with graphs and charts.

Impact & Future Scope

- This project can help any college or institution become environmentally conscious and data-driven.
- By knowing exactly where emissions come from, management can take direct action — whether it’s saving electricity, optimizing transport, or reducing waste.
- In the long run, this can support green campus certification, energy audits, and policy-level decisions for sustainability.
- For the future, we plan to:
    - Integrate machine learning to predict future emissions based on current trends.
    - Add mobile access so data can be viewed anytime.
    - Enable CSV upload for bulk data entry.
    - Connect to IoT energy meters for real-time updates

Team Details

Name	Department	Year	Contact
Surya M (Team Leader)	AI & DS	3rd Year	9344859103
Aboorvasri V.V	AI & DS	1st Year	8807172614
Kishor V	ECE	1st Year	9788092791
Nissan S	AI & DS	2nd Year	7358591550
Sreejith M.S	VLSI	1st Year	8838284600

Thank You

“Campus Carbon Footprint Analyzer — Measuring today for a cleaner tomorrow. 🌱”