

Individual CO2 Footprint Reduction Challenge



Tracking Personal CO2 Impact and Adoption of Sustainable Practices



Contents

01
**Project
Overview**

03
**Testing,
Feedback &
Impact**

02
**Solution and
Dashboard
Features**

04
**Documentation
& Future
Roadmap**



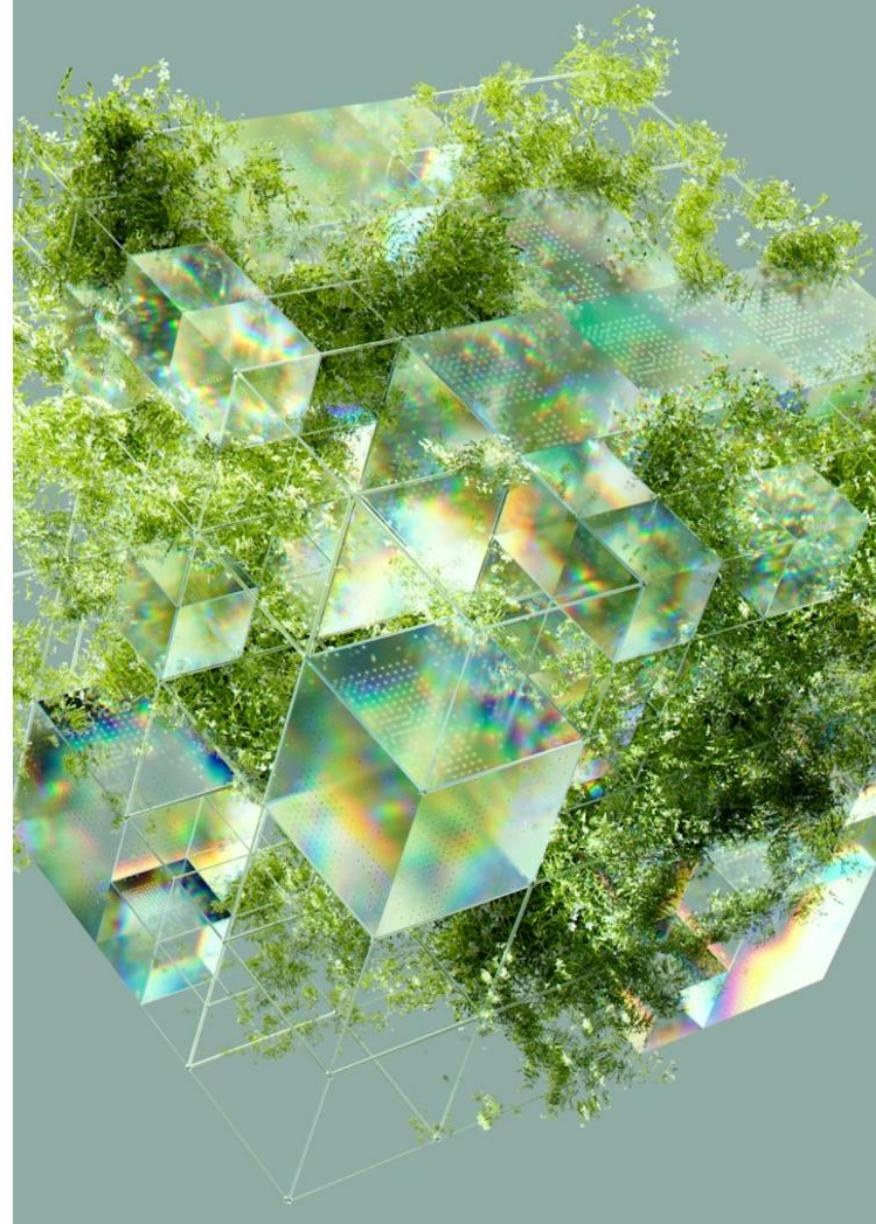
Contents

01
**Project
Overview**

03
**Testing,
Feedback &
Impact**

02
**Solution and
Dashboard
Features**

04
**Documentation
& Future
Roadmap**



Title & Context

Step1

Project Title and Team

The project titled *Individual CO₂ Footprint Reduction Challenge* was carried out by Omkar Rajesh Shinde and Vansh Hiralal Chaudhari, focusing on monitoring and enhancing individual carbon reduction efforts in the Week 4 progress update.

Step2

Internship CO₂ Reduction Target

The internship successfully achieved a 550 kg CO₂ reduction target in Week 4 through sustainable practices, efficient energy use, and positive behavioral changes, contributing to the overall environmental impact goals.

Problem Statement

Current Challenges for Students and Interns

Limited awareness, inconsistent participation, and the absence of structured guidance initially hindered interns from effectively reducing their personal CO₂ footprints.

Key Issues: Transport, Food & Electricity Emissions

High carbon emissions arose from frequent private transport use, meat-based diet choices, and inefficient electricity consumption during daily activities.

Lack of Tracking and Motivation Systems

The absence of accessible tools and dashboards previously prevented interns from monitoring their CO₂ reduction progress, while lack of engagement mechanisms reduced consistent participation in eco-friendly habits.

Need for a Centralized Sustainability Platform

Fragmented efforts made measurable CO₂ reduction difficult; therefore, a centralized digital platform was required to streamline habit tracking, provide real-time insights, foster accountability, and motivate interns toward achieving their 550 kg individual CO₂ reduction target.



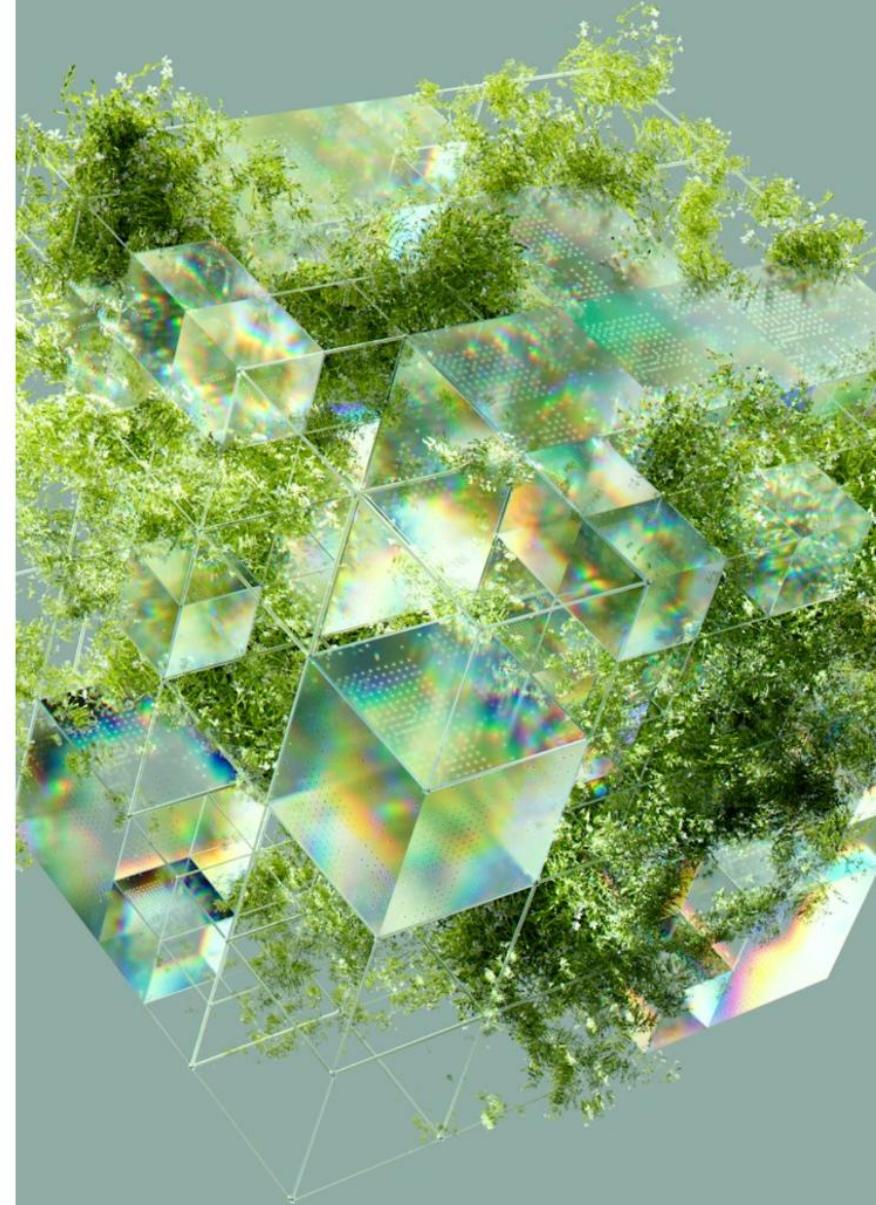
Contents

01
**Project
Overview**

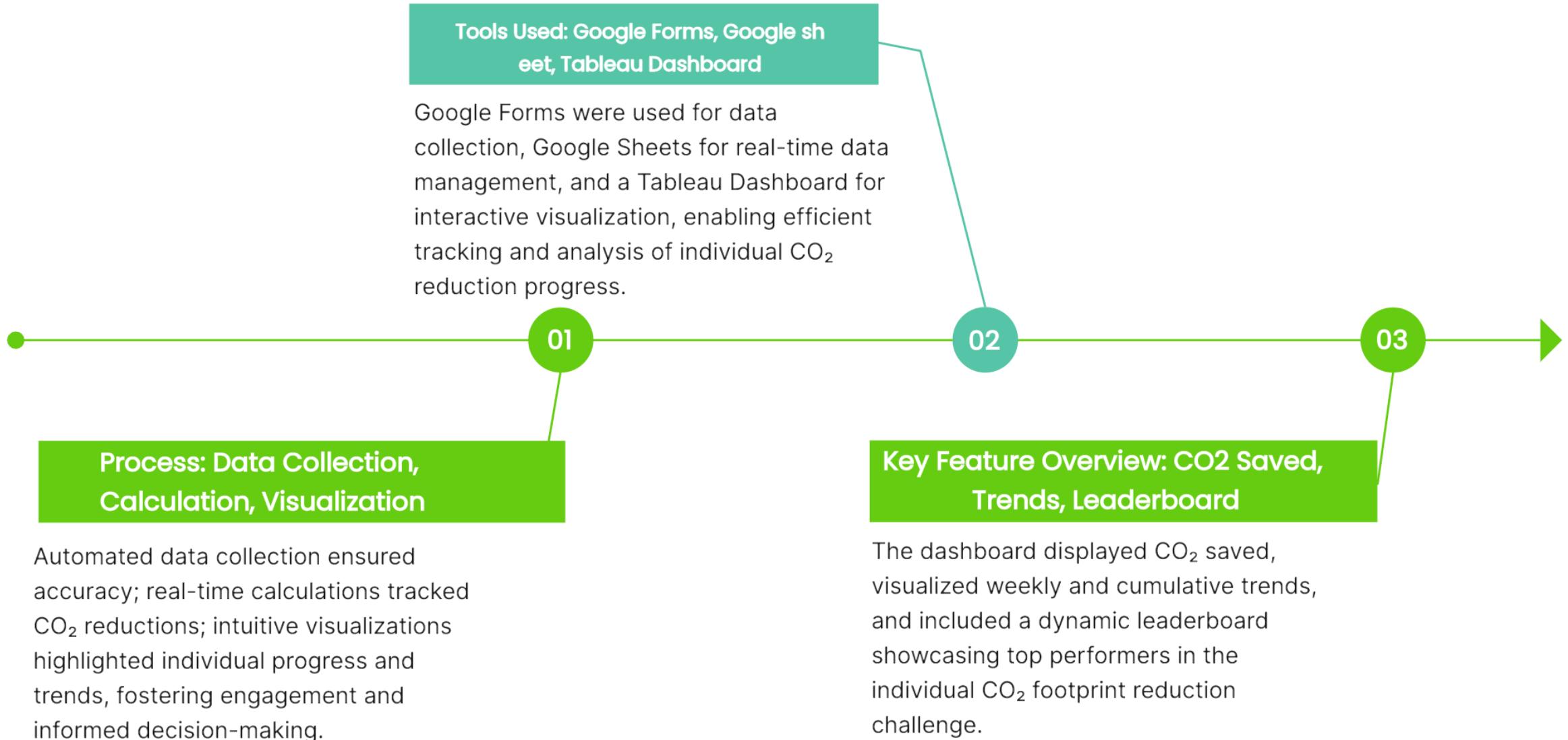
03
**Testing,
Feedback &
Impact**

02
**Solution and
Dashboard
Features**

04
**Documentation
& Future
Roadmap**



Digital Tracking Solution



Daily Sustainability Log-Data Collection

- Interns recorded their daily sustainable habits using a Google Form.
- Form captures: Date, Name, Habit, Quantity.
- Data gathered from interns is available at the following link:
<https://igit.me/google-spreadsheet>

1	Habits	Unit	CO2 Per Unit Kg
2	Use bicycle instead of private vehicle	per kilometer (km)	0.19
3	Use public transportation instead of private vehicle	per kilometer (km)	0.12
4	Carpool/shared ride instead of solo commute	per kilometer (km)	0.09
5	Walking instead of motorized transport	per kilometer (km)	0.21
6	Consume plant-based meal instead of meat-based meal	per meal	2.5
7	Choose local/seasonal produce instead of imported produce	per meal	0.5
8	Avoid food waste (proper portioning/leftover utilization)	per meal	0.3
9	Switch off electrical appliances (fans/lights) when not in use	per hour	0.06
10	Disconnect idle chargers/devices to prevent phantom load	per hour	0.02
11	Air-dry laundry instead of using an electric dryer	per laundry load	1.5
12	Use reusable water bottle instead of single-use PET bottle	per day	0.05
13	Use cloth/jute bag instead of plastic carry bag	per item	0.01
14	Avoid disposable cutlery (plastic spoons, forks, straws)	per item	0.02
15	Reuse/refill notebooks or paper instead of new purchase	per notebook	0.2
16	Planting of tree/sapling (annual carbon sequestration potential)	per tree planted	20
17			

Daily Sustainability Log

Please log your sustainable habits each day. Enter habit, quantity, and notes.

vanshchaudhari9370@gmail.com [Switch accounts](#) 

Not shared

* Indicates required question

Date *

Date dd-mm-yyyy 

Name *

Your answer

Habit *

Choose 

Quantity *

Your answer

Notes

Your answer

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Goole Forms

Dashboard Prototype Highlights

01

KPI Cards and Habit Impact Visualizations

KPI Cards tracked individual CO₂ reduction metrics in real time, while Habit Impact Visualizations showed progress and behavior changes, motivating users with clear, actionable insights.

02

Popular Habits & Daily CO₂ Savings Trends

Top habits included reduced car usage and increased recycling; daily CO₂ savings showed an upward trend, reflecting growing engagement and effective behavior changes during Week 4.

03

Leaderboard and Interactive Filtering Capabilities

The dashboard included a dynamic leaderboard and interactive filters, allowing users to customize views by time, habit type, and individual progress for targeted insights.

04

Progress Monitoring Towards 550kg Target

Real-time tracking of individual CO₂ reductions highlighted progress toward the 550 kg target, with visual indicators and trend analysis to motivate sustained efforts and identify areas for improvement.

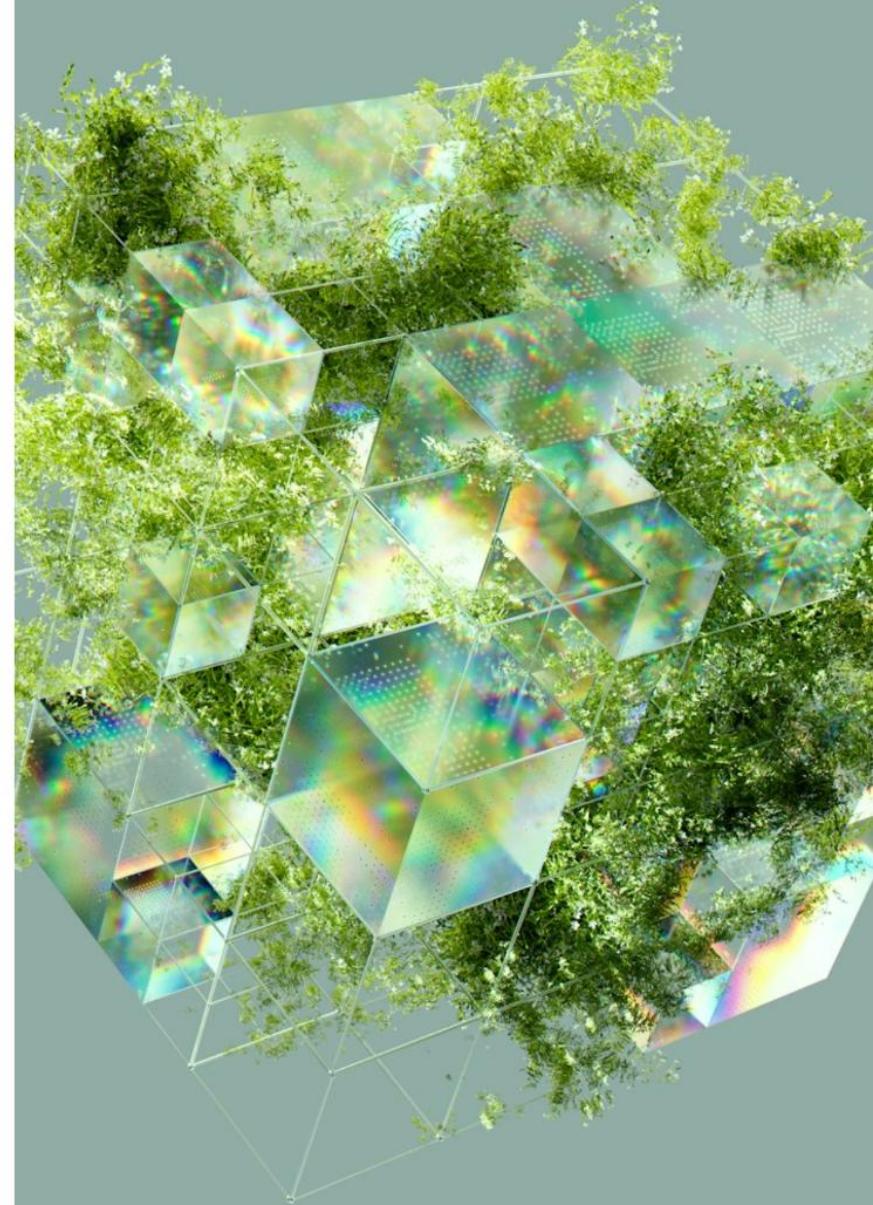
Contents

01
**Project
Overview**

03
**Testing,
Feedback &
Impact**

02
**Solution and
Dashboard
Features**

04
**Documentation
& Future
Roadmap**



Implementation and Testing Process



Sharing Dashboard with Stakeholders

Sharing the dashboard with stakeholders enabled real-time feedback, enhancing transparency and engagement. Insights informed iterative improvements, boosting user adoption and accuracy in impact measurement.



Real-time Data Collection and Interactive Testing

Real-time data collection provided immediate insights into user behavior, while interactive testing identified effective strategies and areas for improvement, enhancing engagement and impact measurement.



Feedback Mechanisms and Improvements

Feedback was collected via surveys and digital tracking; insights improved app usability and personalized guidance, boosting participant engagement and accelerating CO₂ footprint reduction.

Week 4 Measured Impact

- **CO2 Savings by Most Impactful Habits**

Significant CO₂ savings in Week 4 resulted from reduced car usage, lower meat consumption, and improved home energy efficiency, contributing over 70% of total emission reductions.

- **Most Frequently Adopted Sustainable Habits**

The most adopted Week 4 sustainable habits—reducing single-use plastics, using public transport, conserving home energy, and choosing plant-based meals—collectively lowered CO₂ emissions.

- **Data Visualization: Daily Trends Analysis**

Daily CO₂ emissions showed a consistent downward trend, with peak reductions in the evenings. Higher participant engagement correlated with lower weekly carbon footprints.

Total CO₂ Saved

585.2 kg

Sept-2025

Number Of Participants

18

Sept-2025

Average order value

32.5

Sept-2025

INDIVIDUAL CARBON FOOTPRINT REDUCING CHALLENGE

OVERALL CO2 REDUCTION

Total CO2 Saved
585.2 kg

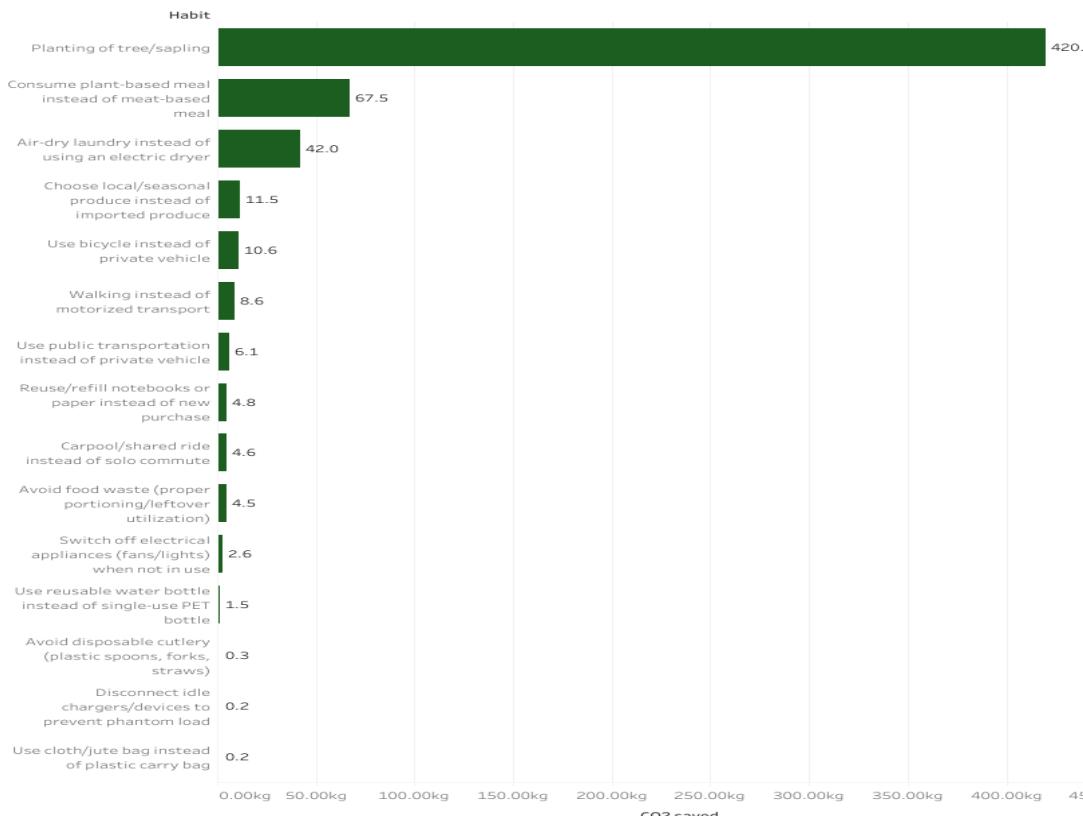
NUMBER OF PARTICIPANTS

Participants
18

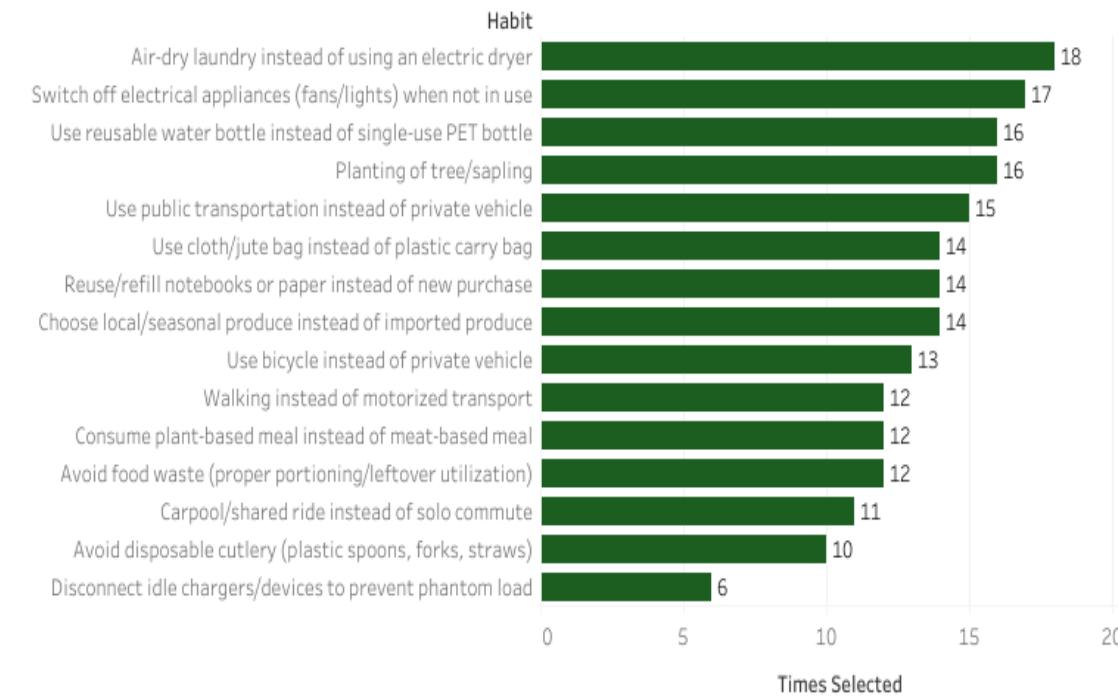
INDIVIDUAL AVERAGE

Average Per Person
32.5

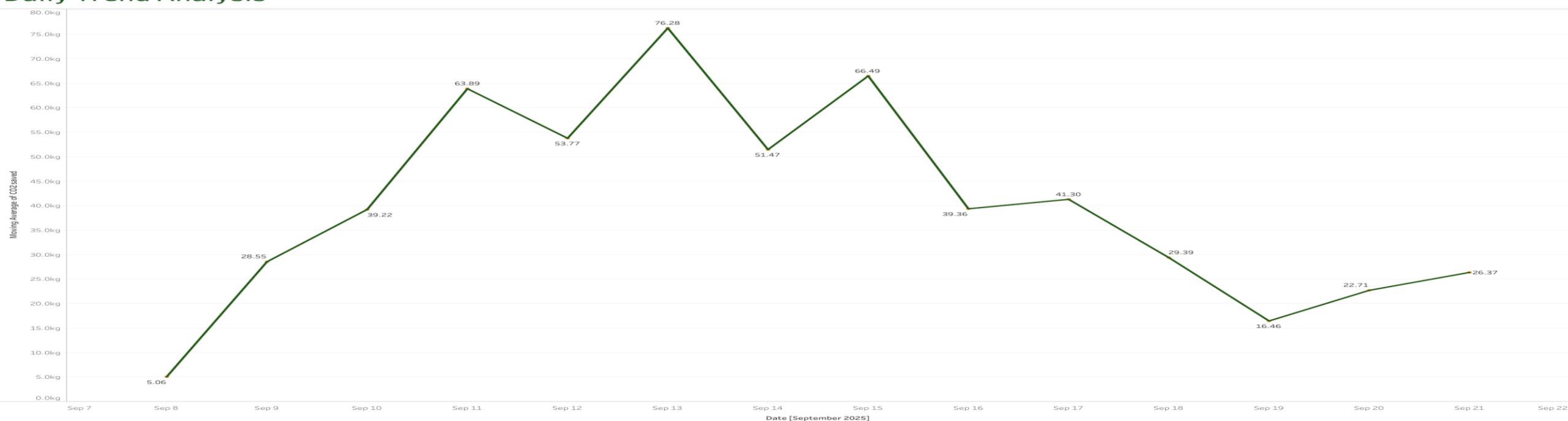
Most Impactful Habit



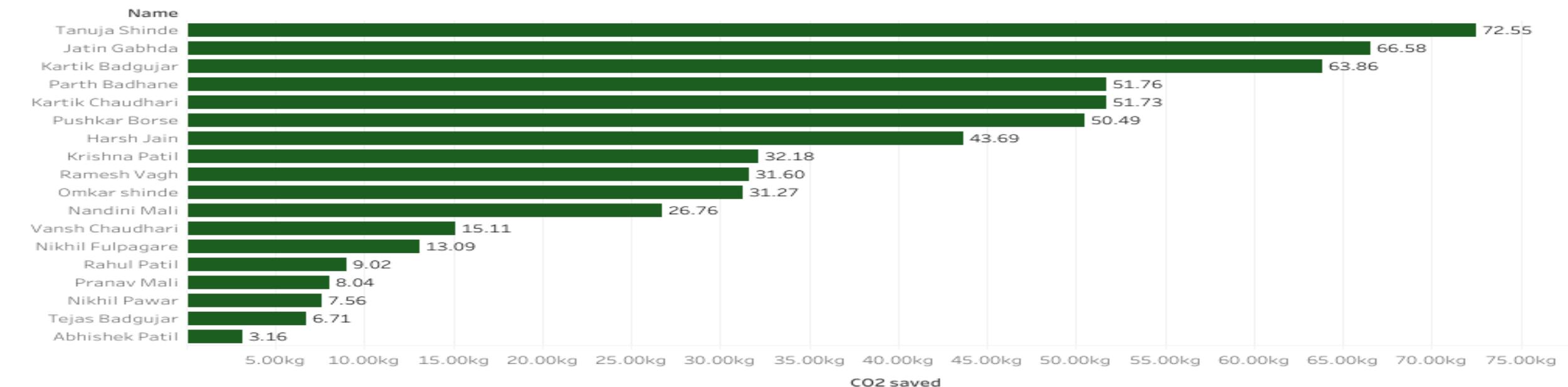
Most Popular Habit



Daily Trend Analysis



Intern's Leaderboard



Stakeholder Feedback Summary

Participant Testimonials

Participants had reported greater awareness of how daily habits impacted CO₂ emissions and **had expressed** motivation to maintain sustainable practices, highlighting the challenge's positive effect on personal lifestyle changes.

Faculty Input and Suggested Enhancements

Faculty had boosting user engagement with interactive tools and clearer visualizations, suggesting real-time feedback and personalized tips to enhance motivation and CO₂ reduction effectiveness.

Benefits Highlighted: Motivation & Visualization

Stakeholders had highlighted that clear visualizations of progress increased motivation, helping participants track reductions effectively and maintain commitment to their individual CO₂ footprint goals.



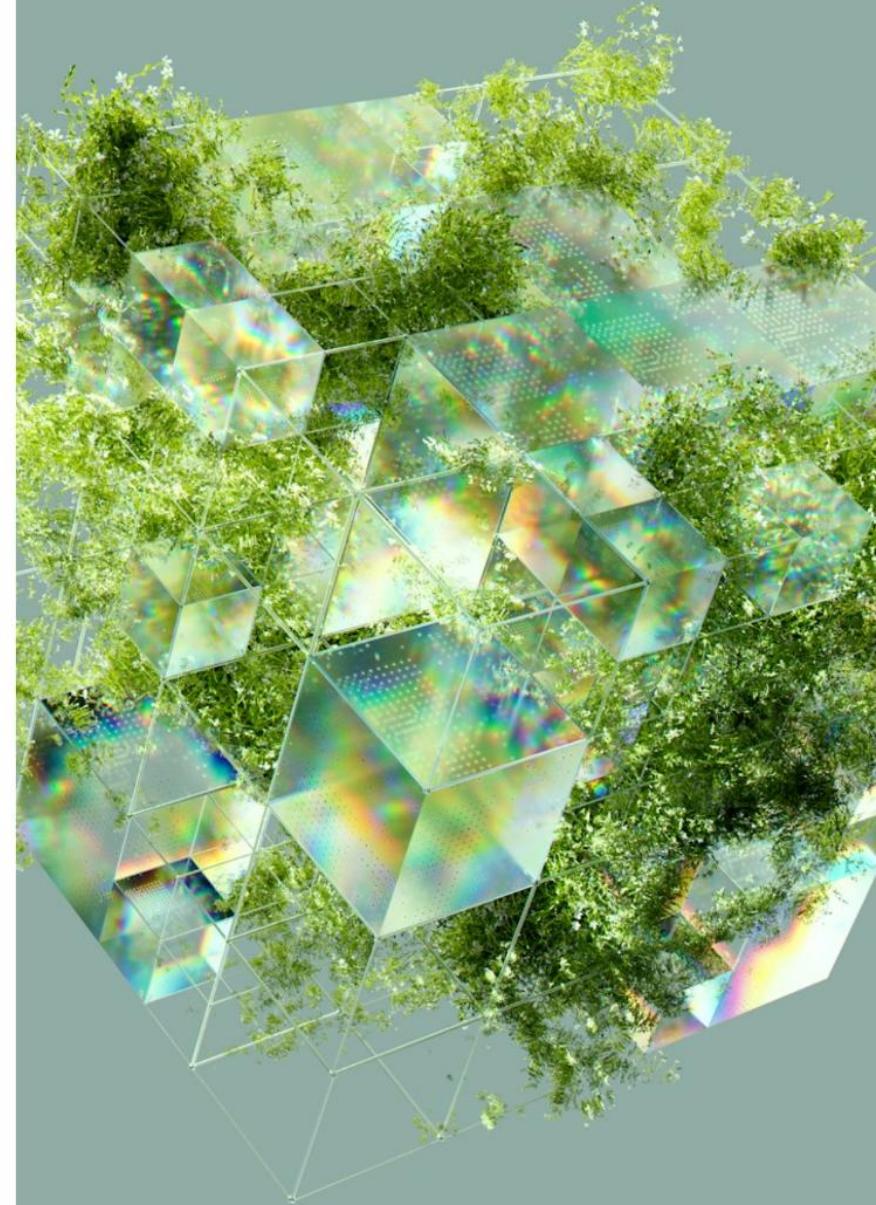
Contents

01
**Project
Overview**

03
**Testing,
Feedback &
Impact**

02
**Solution and
Dashboard
Features**

04
**Documentation
& Future
Roadmap**



System Documentation Evidence

Data Collection and Processing

Methodologies

Data collection had combined automated sensors and user inputs, while processing had included normalization and anomaly detection to ensure accurate, reliable tracking of individual CO₂ reductions over time.



Tableau Dashboard Development and Features

An interactive Tableau dashboard had been developed displaying individual CO₂ reduction metrics, trend analysis, and comparison features, enhancing progress visualization and guiding future improvements.

Evidence: Screenshots and Interaction Phases

Screenshots had captured key interaction phases, demonstrating system usability and user engagement, and had provided clear evidence of progress, functionality, and interface improvements during Week 4.



Next Steps and Project Roadmap

01

Immediate Actions: Data Collection & Dashboard Refinement

Focus had been on improving data accuracy via real-time collection and integrating user feedback to refine the dashboard for enhanced visualization and actionable insights.

02

Future Enhancements: Gamification & Mobile Integration

Gamification had been incorporated to boost engagement and motivation, and a mobile app had been developed for real-time tracking, personalized feedback, and a seamless user experience to enhance participation and long-term impact.



03

Long-term Goals: Expansion & Final Deliverables

Scalable expansion strategies had been established for diverse demographics, a comprehensive CO₂ reduction toolkit had been finalized, data-driven insights had been integrated for continuous improvement, and preparations had been made for the official project launch and stakeholder engagement.

Thanks



With sincere gratitude and appreciation
to all participants, mentors, and
stakeholders who contributed to the
success of this project.

