**Team Carbon Crusaders**

EcoRewards

Prashant Anand

Timea Kadas

Liz Kent

Prateek Madnani

Alankrita Singh

MGS 613

Professor Keaton

July 16, 2024

**GP 1: Project Definition and Scope**

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| **Team Carbon Crusaders** | |
| Mission Statement | Carbon Crusaders is focused on providing a product that can empower individuals to reduce their carbon footprint. We are dedicated to creating solutions that will make sustainable living accessible. |
| **Our Team** | |
| **Prashant Anand**  A person in a suit and tie  Description automatically generated | Prashant Anand is a graduate student in Management Information Systems at the University at Buffalo. Previously, Prashant worked as an analyst at various companies where he improved database frameworks, analyzed data with SQL and Excel, and developed strategies that optimized business operations. Prashant holds a Bachelor of Technology in Electrical and Electronics Engineering. He enjoys swimming, running, and traveling. |
| **Timea Kadas** | Timea Kadas is passionate about using data to drive innovation and efficiency, especially in projects aimed at reducing carbon emissions and promoting sustainability. Her educational background includes a Bachelor of Science in Business Administration with a concentration in Management Information Systems from the University at Buffalo. Timea is currently pursuing a Master of Science in Management Information Systems at the University at Buffalo and expects to graduate in June 2025. Timea’s educational background combined with her work experience, has equipped her with a strong foundation in data analysis and database management. |
| **Liz Kent** | Liz Kent is a Buffalo native with a professional background in process improvement and implementation, system administration, and defect management. She is currently working as a Commercial Banking Business Data Consultant for a large regional bank. Liz is a mother of 4 and an animal lover owning a small hobby farm with dogs, pigs, and chickens. In her free time Liz is an amateur photographer, Buffalo Bills fan, and a plant rescuer. Liz completed her undergraduate degree in Business Management in 2017 and is now pursuing her Master of Science in Management Information Systems at the University at Buffalo so that she can grow her career in the field of data management and data architecture. |
| **Prateek Madnani** | Prateek Madnani comes from India with a professional background in Software Engineering. Prateek completed his undergraduate degree in Information Science and Engineering in 2020 and has been working in the software domain since then. He has four years of experience in India on multiple technologies with the focus on backend development. Prateek is currently pursuing his Master of Science in Management Information Systems at the University at Buffalo. Prateek is passionate about technology, is an avid learner and explorer. Prateek intends to work in the field of technical product management after completing his graduate program, so that he can leverage his technical skills from his experience and grow into leadership positions. |
| **Alankrita Singh** | Before coming to the United States, Alankrita worked as an Application Engineer in India for the past 2 years. She intends to change her career path to data analytics and security as these topics interest her. She completed her BTech in Electrical & Electronics Engineering in 2022 and is now pursuing an MS in MIS to transition into the career track she has chosen. She has worked on various technologies including SQL, JavaScript, HTML/CSS, Java. She is passionate about learning new things, adaptable and driven to excel. |

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| **Project Plan** | |
| Project Name | EcoRewards |
| Problem Statement | Every day, many people live their lives ignorant of the impact their activities and lifestyle have on increasing greenhouse gases. The rising levels of greenhouse gases have far-reaching effects on climate change, global economies, agriculture, and human health. Our team’s goal is to raise awareness about the carbon emissions crisis on a personal level and empower individuals to make a difference.  We believe that all our individual actions can have an impact on the future of the planet, so we are driven to fundamentally change the steps people take in making their daily decisions, especially related to running errands. If people develop new habits that will collectively improve the state of our world, we can all create a ripple effect that extends beyond the small decisions we make every day. Preserving our natural resources and building a community of individuals who are dedicated and thoughtful about the environment is our goal. Mitigating the effects of climate change and creating safer, healthier environments for all of us and future generations to enjoy is at the heart of what we do. |
| Project Overview | Our project, EcoRewards, will inspire individuals to track the amount of carbon they are emitting by taking a look at their lifestyle and choice of activities. When our users become aware of the amount of carbon they are producing, they will be incentivized to use less by receiving rewards such as gift cards to various retailers. The overall goal is to improve the environment and create a greener planet. While people initially may be motivated by earning money, in the end they will feel a deeper connection to the cause of contributing to a less polluted planet.  People will be able to use our advanced technology to track and monitor various aspects of their daily lives, such as eating habits, transportation choices, clothing preferences, device usage, and other activities that impact the environment. Our system will evaluate the user’s choices and assign eco-points for making decisions that are environmentally conscientious. For example, choosing to walk, ride a bike, or take public transportation will be rewarded over driving a personal vehicle. Users have the option to connect their data from other apps they use throughout their day for an even more seamless and carefree experience that fits their lifestyle. We prioritize the privacy and data security of our users, so their information will only be shared to the extent that they agree upon. By making suitable decisions that encourage sustainability, users will receive positive reinforcement through the distribution of tangible rewards, which will include options such as donating to a charity, obtaining gift cards, or other goods. |
| Project Objectives | The goal of this project is to provide users with an easy-to-use application that will:  1) Calculate user’s average carbon emissions based on their activities  2) Suggest alternative activities and lifestyle modifications aimed at reducing their carbon footprint  3) Incentivize users to make smarter choices via a rewards-based point system redeemable for gift cards  The database will contain the following tables:  **UserInfo**   * This table records personal information about each user, including their first name, last name, age, gender, and BMI.   **DailyTracker**   * This table logs daily activities for each user including the date, user ID, activity ID, daily carbon emission, points earned, and score ID.   **Activity**   * This table contains details of various activities performed by users, including their carbon emissions, fitness habit ID, eating habit ID, and transportation mode ID.   **ActivityDate**   * This table links activities to specific dates, including the activity ID and daily tracker date.   **EatingHabitTable**   * This table details eating habits and their carbon emissions, including the eating habit description and emission amount.   **FitnessHabitTable**   * This table details fitness habits and their carbon emissions, including the fitness habit description and emission amount.   **Recommendation**   * This table provides personalized recommendations to users based on their activities and carbon emissions, including suggested activity changes, expected environmental impact, and user ID.   **Score**   * This table defines emission ranges and their corresponding point values for scoring user activities, including the emissions range and total points awarded.   **Transaction**   * This table logs transactions related to points earned and redeemed by users, including the transaction date, redemption mode, status, and user ID.   **TransportationMode**   * This table details different modes of transportation and their corresponding carbon emissions, including the transportation mode description and emission amount.   **Redemption**   * This table records details of point redemptions by users for various rewards including the number of points redeemed, redemption date, user ID, and gift card option ID.   **RedemptionTransaction**   * This table links redemptions to transactions, including the daily tracker date and transaction ID.   **GiftCardOption**   * This table provides details of various gift card options available for redemption, including the retailer and monetary value of the gift card.   **DailyTrackerTransaction**   * This table records the relationship between daily tracker entries and transactions, including the daily tracker date and transaction ID. |
| Project Deliverables and Milestones | Project description and Scope - 07/16/2024  Detailed business rules and completed ER diagram - 07/23/2024  Database Schema and Physical Design - 07/30/2024  Populated Data and Query Output - 08/06/2024  Report and Analysis Output and Presentation - 08/15/2024 |
| Project Constraints | Completion date of August 15, 2024  There will be no user interface created  Data availability |
| Assumptions | All team members will participate  Project Plan will be approved  Technical resource availability  Applicable Data is sourceable |

**GP 2: Detailed Business Rules & Logical Diagram**

**Top of Form**

1. Each DailyTracker entry must be linked to exactly one user (UserInfo) and must include a specific date (DailyTrackerDate).
2. Each Activity must be linked to one and only one FitnessHabit, EatingHabit, or TransportationMode but can involve multiple emissions.
3. Each Activity must have an ActivityDate linked to a DailyTrackerDate.
4. Each Redemption must be associated with one Transaction and one GiftCardOption.
5. Each Recommendation is associated with exactly one user (UserInfo). Each user can receive multiple recommendations, but each recommendation must be unique to the user's activities and preferences.
6. Each GiftCardOption can be used in multiple Redemption records. Each redemption must specify the PointsRedeemed and the RedemptionDate.
7. Each DailyTracker entry must be associated with one Score which helps in calculating the points earned.

