Eco-Neighbours

Join the Green Challenge: Compete, Connect, Conserve!

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Eco-Neighbours

Eco-Neighbors is a community-focused app that makes sustainability engaging and interactive. It combines eco-friendly challenges, goal setting, and progress tracking to help users save energy and reduce their environmental impact. With features like personalized goals, energy consumption comparisons, and a competitive point system, the app fosters collaboration and friendly competition, turning sustainable living into a fun and rewarding experience.

Main takeaways

Through user research, carried out in phase 1, through questionnaires, we identified the main insights:

- Energy awareness varies, influenced by life stage and responsibilities.
- Users are motivated by gamified experiences, especially challenges and rewards.
- Solutions that support transitions like financial independence and home setup are highly valued.
- Clear data and the ability to compare energy usage within the community are important.
- Cost savings and environmental impact are strong motivators.
- Preferences for technology range from simple, straightforward tools to more interactive platforms.

These insights shaped personas that clarified user goals and behaviors, guiding design decisions. A heuristic evaluation of prototypes helped refine our approach, leading to the development of Eco-Neighbors, a platform designed to meet user needs effectively.

Prototype's Wireflow
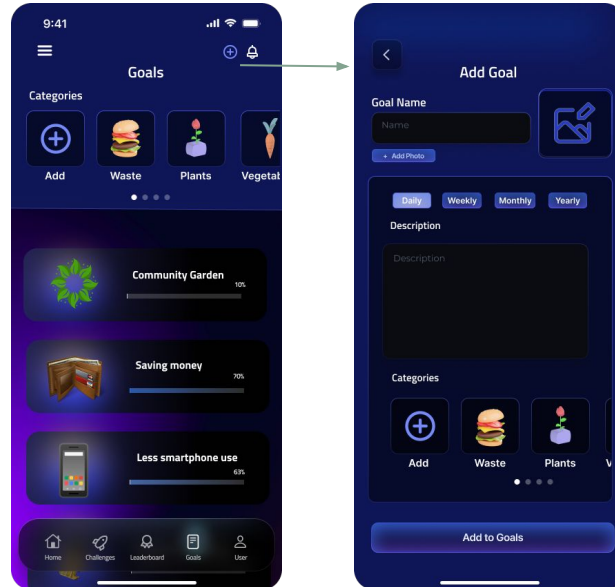
Set and track personalized energy-saving goals

Users can choose from a list of energy-saving goals recommended by the app, tailored to their consumption patterns and preferences. These personalized suggestions are designed to be both practical and effective, offering clear and achievable steps to help reduce energy usage.
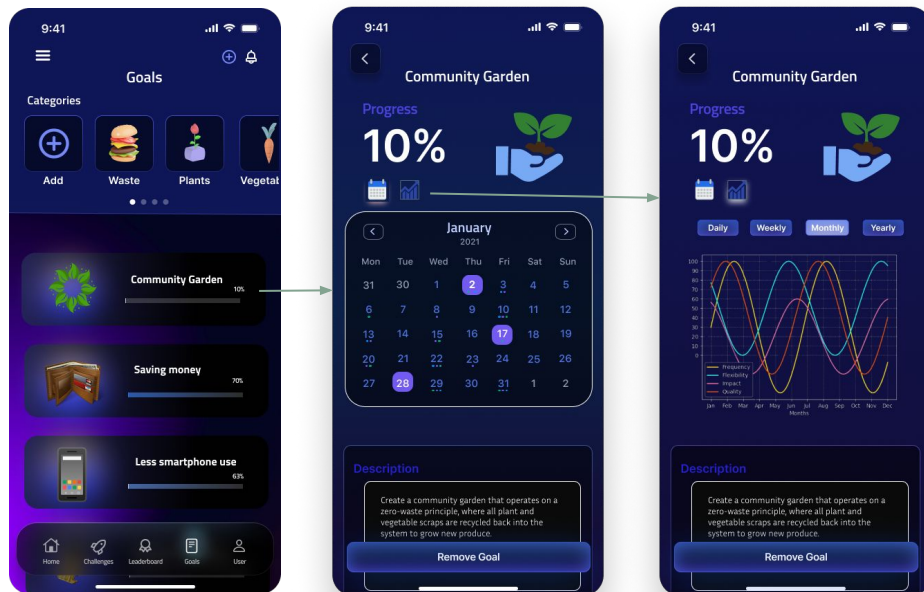
Prototype's Wireflow

Set and track personalized energy-saving goals

Users can manually enter their own personalized energy-saving goals, offering greater flexibility and customization. This feature is perfect for those with unique objectives that may not match the app's pre-defined recommendations.

Prototype's Wireflow

Set and track personalized energy-saving goals

Users can add categories to organize their goals and easily scroll through the app to track their progress. This feature enhances goal management, offering a clear overview of achievements and areas for improvement.
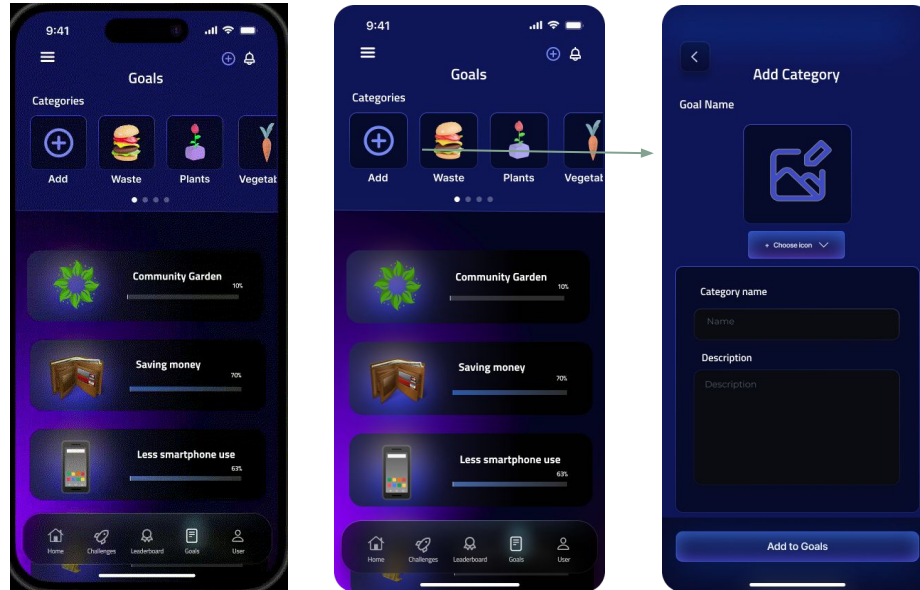
Sample Characterization

Our evaluation sample consisted of a diverse group of participants, including family and friends from various age groups: 18-25, 26-35, 36-45, 46-60, and 60+. This broad demographic ensures a variety of perspectives and experiences, representing both younger and older generations.

We used both quantitative and qualitative methods to assess the task's effectiveness.

- Quantitative data was gathered through surveys measuring efficiency (time), efficacy (missclicks), and satisfaction (0-5 scale).
- Qualitative insights were obtained via interviews and observations, offering detailed feedback on user experiences and challenges.

This combined approach provided a comprehensive understanding of user performance and satisfaction, highlighting areas for improvement.

Results and statistical analysis - Task 2

Challenge: The task that some users initially found slightly challenging was adding goals. This occurred because a number of users, during their first interaction with the app, overlooked the "Add Goal" icon and mistakenly clicked on the nearby "Add Categories" icon instead. This minor confusion stemmed from the close proximity of the two icons.
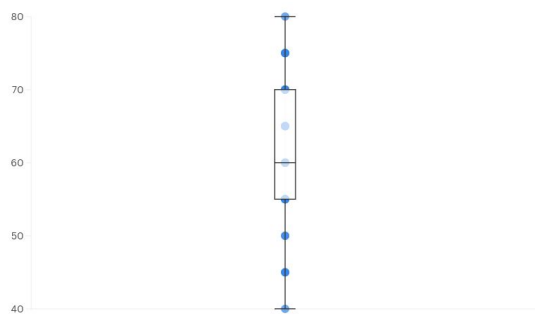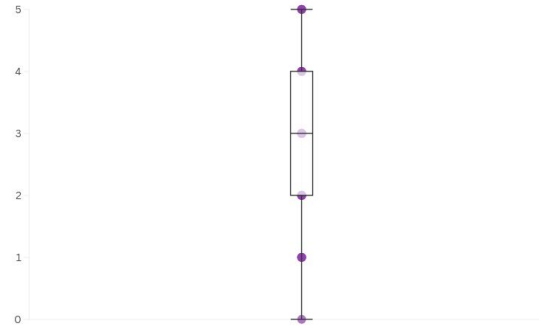

Efficiency (in seconds)
Mean: 53.13   **Mode:** 50   **Median:** 50.0
**95% Confidence Interval:** (53.07, 63.18)
Interpretation: The task generally takes around 50 seconds, with a slight variation. Many users struggled to find the correct icons, which contributed to the higher completion times. The true mean time is expected between 53.07s and 63.18s.

Efficacy (Missclicks):
Mean: 1.28 missclicks   **Mode:** 0   **Median:** 1

Interpretation: On average, users made around 1-2 missclicks during the task, primarily caused by confusion between the "Add Goal" and "Add Categories" icons. This issue contributed to the overall efficacy data.
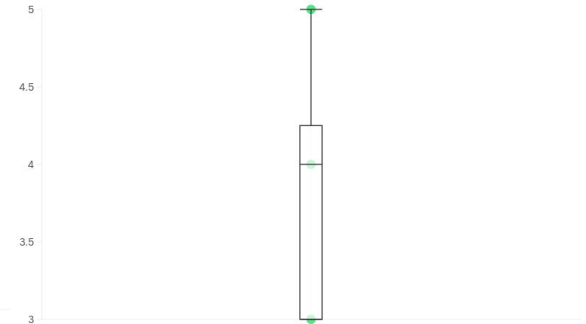
Satisfaction (1-5 scale)
Mean: 4.19   **Mode:** 4   **Median:** 4.0
Standard Deviation: 0.58
Interpretation: Despite the slight difficulty of a small fringe of users, users reported relatively high satisfaction

Results and statistical analysis - Task 2

Statistical Insight	Value	Interpretation
Adjusted Satisfaction vs. Benchmark (4.0)	t-statistic: 1.79 p-value: 0.083 (not significant)	Satisfaction is slightly above the benchmark, but not significantly so. Better clarity could lead to higher satisfaction.
Efficiency & Satisfaction Correlation	$r = -0.83$ p-value $= 4.79 \times 10^{-9}$ (significant)	Strong negative correlation, indicating faster task completion leads to higher satisfaction. Difficulty in completing tasks due to interface confusion contributed to longer times and reduced satisfaction.
Efficacy & Satisfaction Correlation	$r = -0.81$ p-value $= 1.47 \times 10^{-8}$ (significant)	Fewer missclicks are strongly associated with higher satisfaction. Avoiding wrong clicks led to a smoother experience.

Results and statistical analysis - General

| Metric	Task 1 - Compare Energy Usage	Task 3 - Participate in Challenges
Efficiency (Time)	**Mean:** 58.13s **Mode:** 55s **Median:** 55s	**Mean:** 37.66s **Mode:** 30s **Median:** 40s
Efficacy (Missclicks)	**Mode:** 1 **Median:** 2	**Mode:** 0 **Median:** 1
Satisfaction (0-5 Scale)	**Mode:** 4 **Median:** 4	**Mode:** 4 **Median:** 4
Statistical Insights	- **Efficiency vs. Efficacy:** t-stat = 14.58, p < 0.0001 - **Satisfaction Correlation:** No strong relationship with time or missclicks	- **Satisfaction & Efficiency:** r = 0.52 (moderate positive) - **Satisfaction & Efficacy:** r = 0.34 (weak positive)
Confidence Interval (95%)	**Efficiency:** (53.07s, 63.18s) **Satisfaction:** (3.87, 4.38)	**Satisfaction:** (3.45, 3.80)

Results and statistical analysis - General

Key Insights:

- General Satisfaction: Overall, users expressed satisfaction across all tasks, with satisfaction scores generally above the benchmark of 4.0.
- Interface Usability: Despite some confusion with certain interface elements, users found the tasks engaging and easy to understand after familiarization.
- Room for Improvement: While satisfaction is positive, users identified areas where the interface could be clearer, particularly in tasks involving goal setting and energy comparisons.

Overall Feedback:

- Task 1 (Energy Usage Comparison): High satisfaction (Mean = 4.13) despite some confusion, with most users appreciating the concept of comparing energy usage.
- Task 2 (Energy Saving Goals): Positive feedback (Mean = 4.19), with users indicating they felt empowered by setting energy goals. Enhancements to task flow and icon clarity could further boost satisfaction.
- Task 3 (Participate in Challenges): Although slightly below the benchmark (Mean = 3.63), users liked the concept and ease of the task, suggesting that simplifying the process further could enhance the experience.

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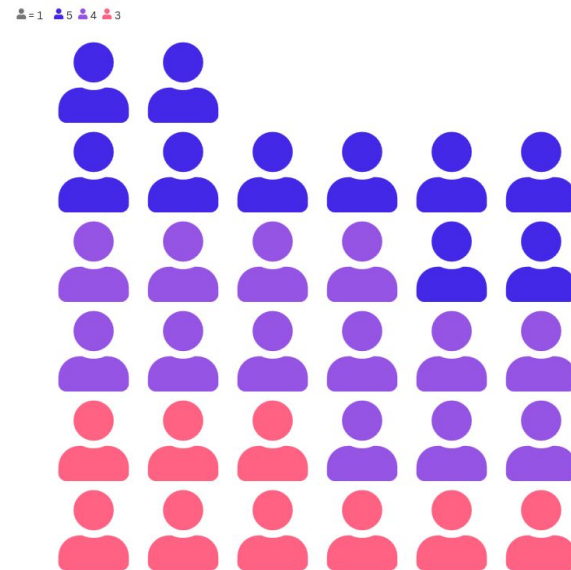
Eco-Neighbours

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