From Awareness to Action: Surveying U.S. Residents' Plant Knowledge to Guide EcoRoots App Design for Ecological Engagement

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SAM Meets STEM

Introduction

- Forsyth County, where I live, is one of the fastest-growing areas in the metro Atlanta region. From 2000 to 2019, its population surged from 98,407 to 228,383—a growth of 132% (Pascual, 2021). This upward trend is expected to continue, with a projected 79% increase between 2020 and 2050, bringing the population to over 450,000 (Justin Landis Group, 2025). As cities grow and neighborhoods modernize, the disappearance of native plants and the wildlife they support often goes unnoticed.

- This project aims to promote native plants and increase community members' awareness of wildlife habitats in their home landscapes. We hope to build an environment that benefits both humans and wildlife, making both happy and healthy.

Methodology

- Designed a research survey to understand public knowledge, perceptions, and attitudes toward native and invasive non-native plants in the United States.

Scan me to take the survey

- Based on the survey results, developed the features of the app *EcoRoots* to promote native plants, low-maintenance landscapes, and wildlife habitats.

Results

- We surveyed 115 U.S. residents. Most respondents (68.7%) are between the ages of 30 and 60. Over half of them have heard of the Most *native plants* and *invasive non-native plants*. However, nearly 40% do not know which specific plants fall into these categories.
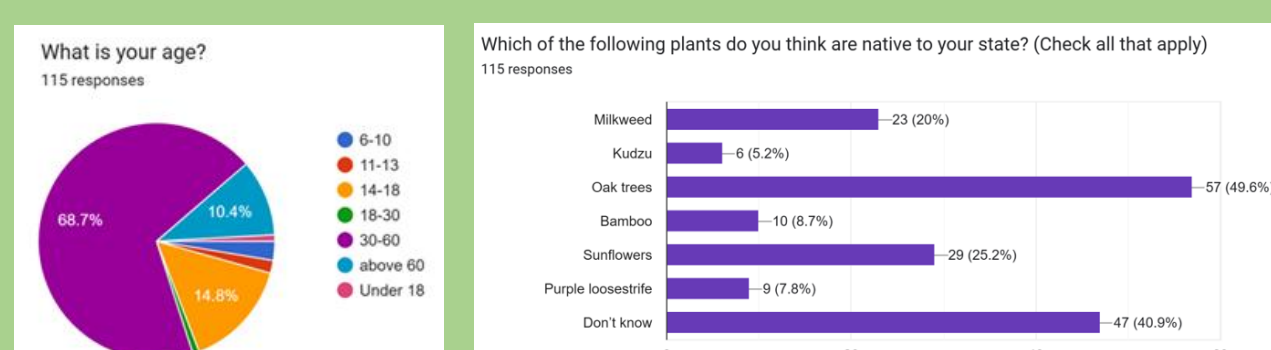
- Another key finding is that, although 90.8% of respondents rated the importance of protecting native plants as a 4 or 5, very few (25.2%) have planted native plants in their yards.
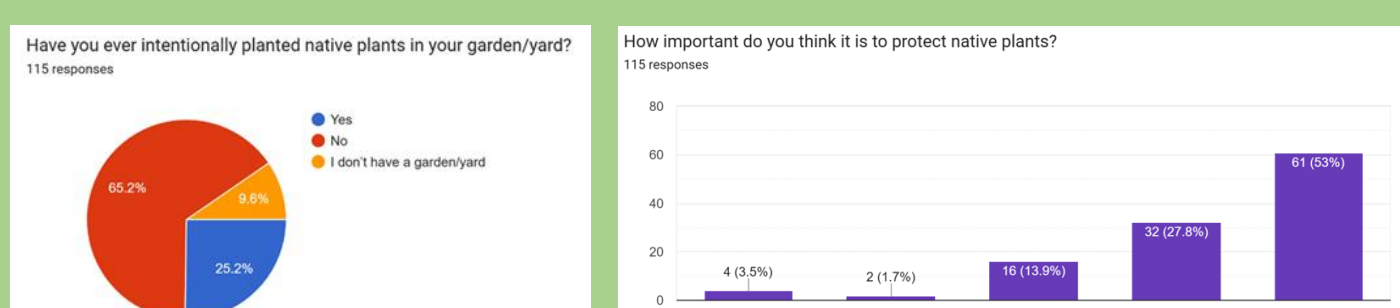
- Only 14.8% reported having received education on native plants. Furthermore, 89.6% of respondents identified a lack of knowledge or information as a challenge in promoting awareness.
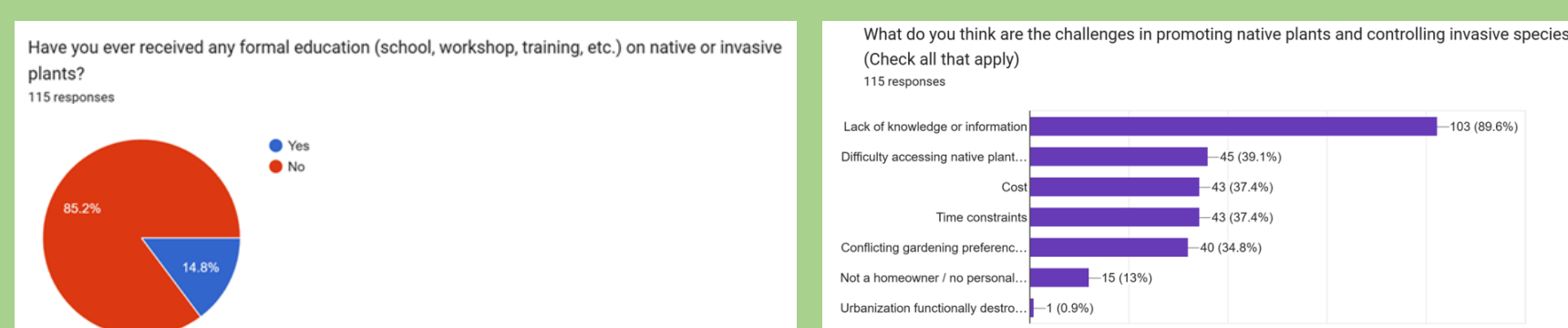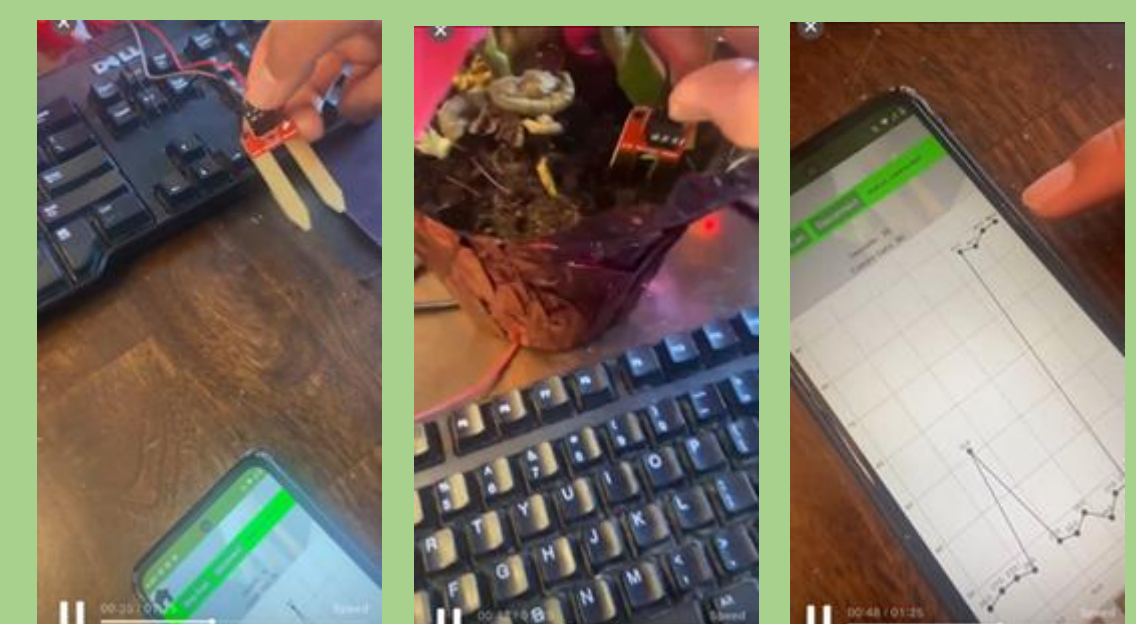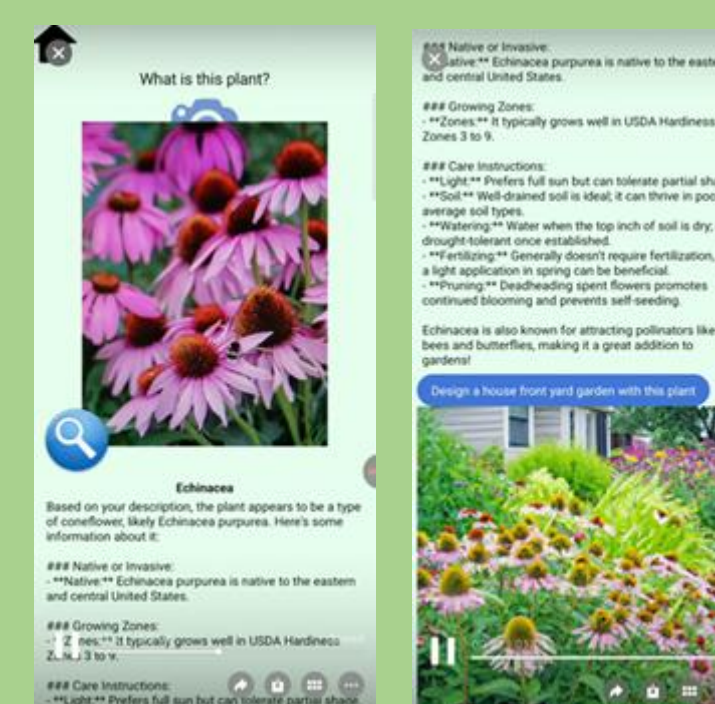

APP Design

Features

(It is a collaborative development project by Aiden C., Justin T., Ray L., and Justin W.)

- Educational Resources

- AI-Powered Plant Recognition

- AI-Powered Plant Recommendations

- AI-Powered Weather-Based Care Suggestions

- Customizable Reminders

App Inventor + Micro:bit
&
Moisture Sensor

Plant Recognition
&
Recommendation