VISION-BASED AI PLANT WATERING SYSTEM

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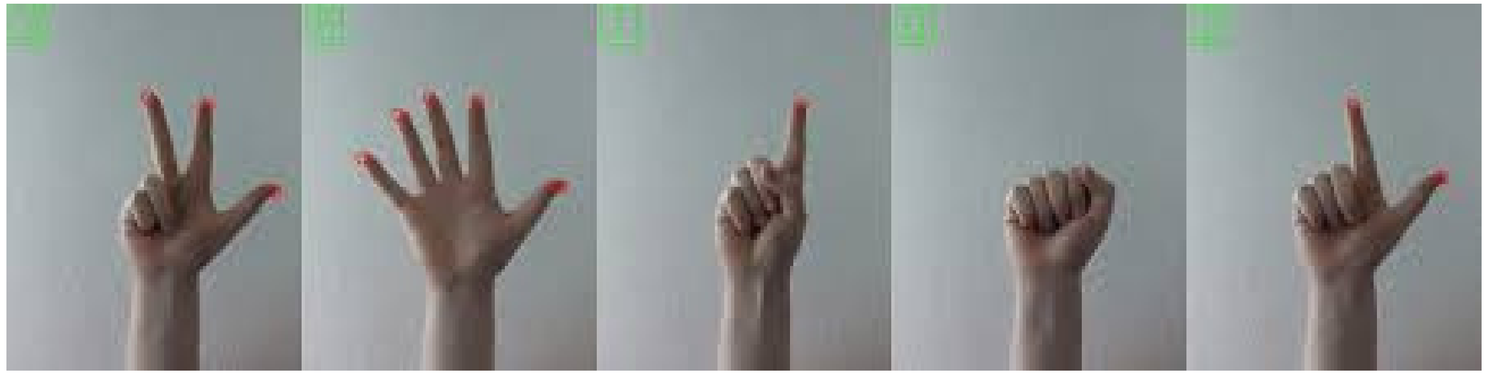
What if plants could understand us?

REIMAGINING GARDENING FOR THE ELDERLY, SPECIALLY-ABLED, AND EVERYONE IN BETWEEN.

Our Human-Centered Response

So We Built a Gesture-Controlled Watering System



<u>Just raise your hand in front of the camera:</u>

☝️ **One finger → Tray 1**

✌️ **Two fingers → Tray 2**

✊ **A fist → Stop everything**

- **A system that doesn’t need apps or voice commands.**
- **Built for those who need ease, simplicity, and independence.**

Here’s How It Works Behind the Scenes

- A camera constantly watches for hand gestures.
- AI interprets the gesture and activates the correct tray.
- Watering continues until a "stop" signal is given.
- A live screen overlay shows what’s happening.
- Every action is logged for transparency and review.

Our Materials – EcoSheets for Tray Design
We plan to build the planting trays using EcoSheets—durable, recycled plastic sheets from ecosheets.co.in.

- Tray Construction Using EcoSheets
- Bullet Points:
- Made from 100% recycled plastic
- Lightweight and waterproof
- Weather-resistant and corrosion-proof
- Ideal for outdoor and indoor use
- Safe and easy to handle for elderly and specially-abled users
- Durable and long-lasting with low maintenance

Powering the System with Solar Energy

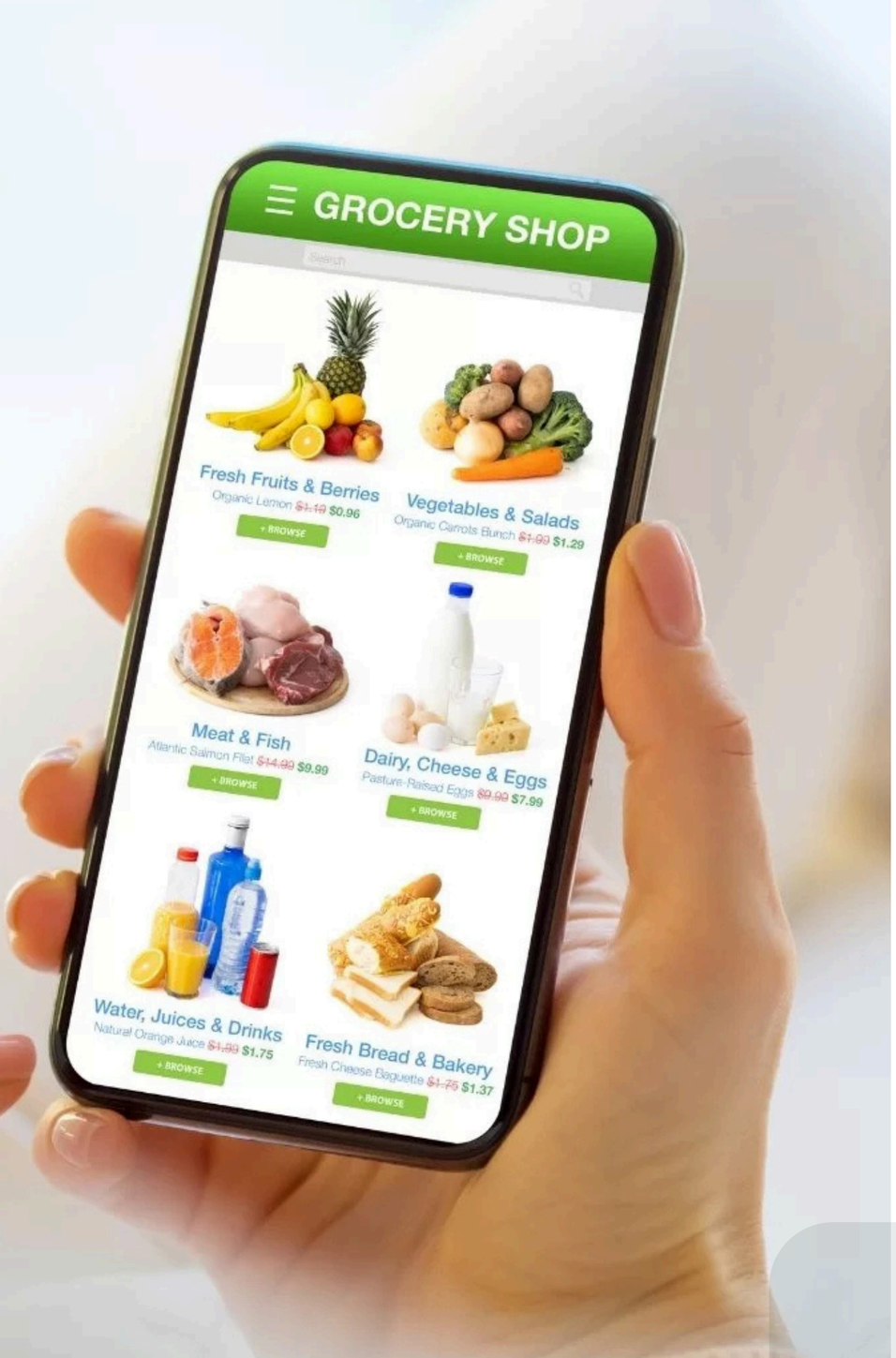
Dedicated solar panel setup for the system

Ensures 24/7 power availability without external wiring

Supports use in balconies, terraces, and remote areas

Promotes sustainability and reduces electricity costs

Backup battery storage (optional for future upgrade)



Community-Based E-Commerce:

- Users can sell or share surplus home-grown vegetables
- Option for elderly and specially-abled individuals to exchange surplus crops with others in the community (barter-style model)
- Builds self-sufficiency among elderly and home gardeners
- Encourages community engagement through food sharing

PROGRESS SO FAR

✓ Gesture detection model integrated using MediaPipe and OpenCV

✓ Real-time hand tracking implemented with accuracy optimizations

✓ Water control logic developed for individual trays (1, 2, 3) and all trays

✓ Start/stop gesture mechanism using open palm and fist

✓ Watering logs created to track all actions with timestamps

✓ Hardware integration logic prepared for future ESP32 connection

✓ Solar power supply plan finalized (dedicated panel setup)

✓ Recycled EcoSheet tray design documented

✓ GitHub repository updated with clean code and structure

✓ Frontend of e-commerce website (HTML, CSS, JS) added to repository

THANK YOU....!