ImpactXChange Hackathon

Team DAMP + J 🤓
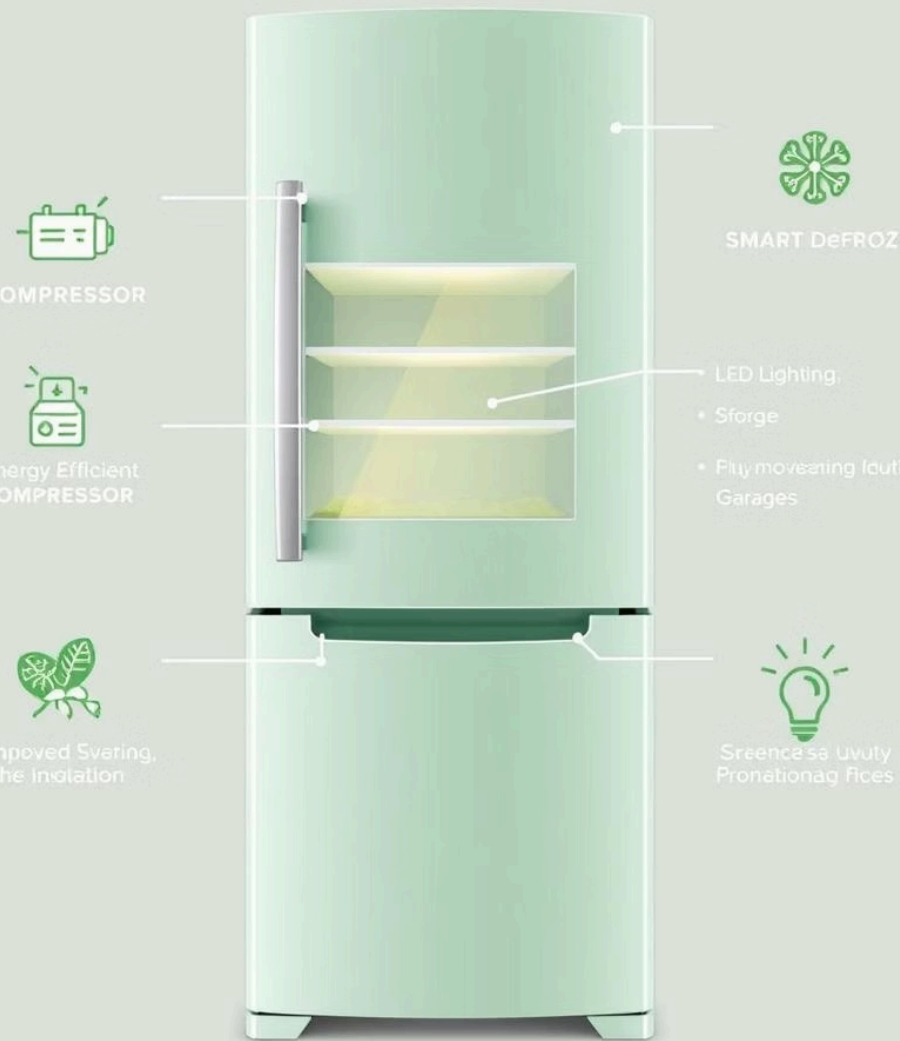
The Problem

- **Energy waste:** [50–120kWh/year](#) from fridge misuse

- **Food waste:** Up to [30% of household purchases](#)

- **Poor habits:** Late snacking, hot food storage, etc.

Shut the Fridge Door — You're Wasting Electricity

Is leaving the fridge door open for, say, 10 seconds a "big deal"?

Sustainability Goals

Lower Energy Consumption

Minimize door open times and heat input.

Healthier Eating

Encourage better eating habits.

Reduce Food Waste

Cut average household food waste.

Environmental Education

Show real-time impact of habits.

Made with GAMMA

The Solution

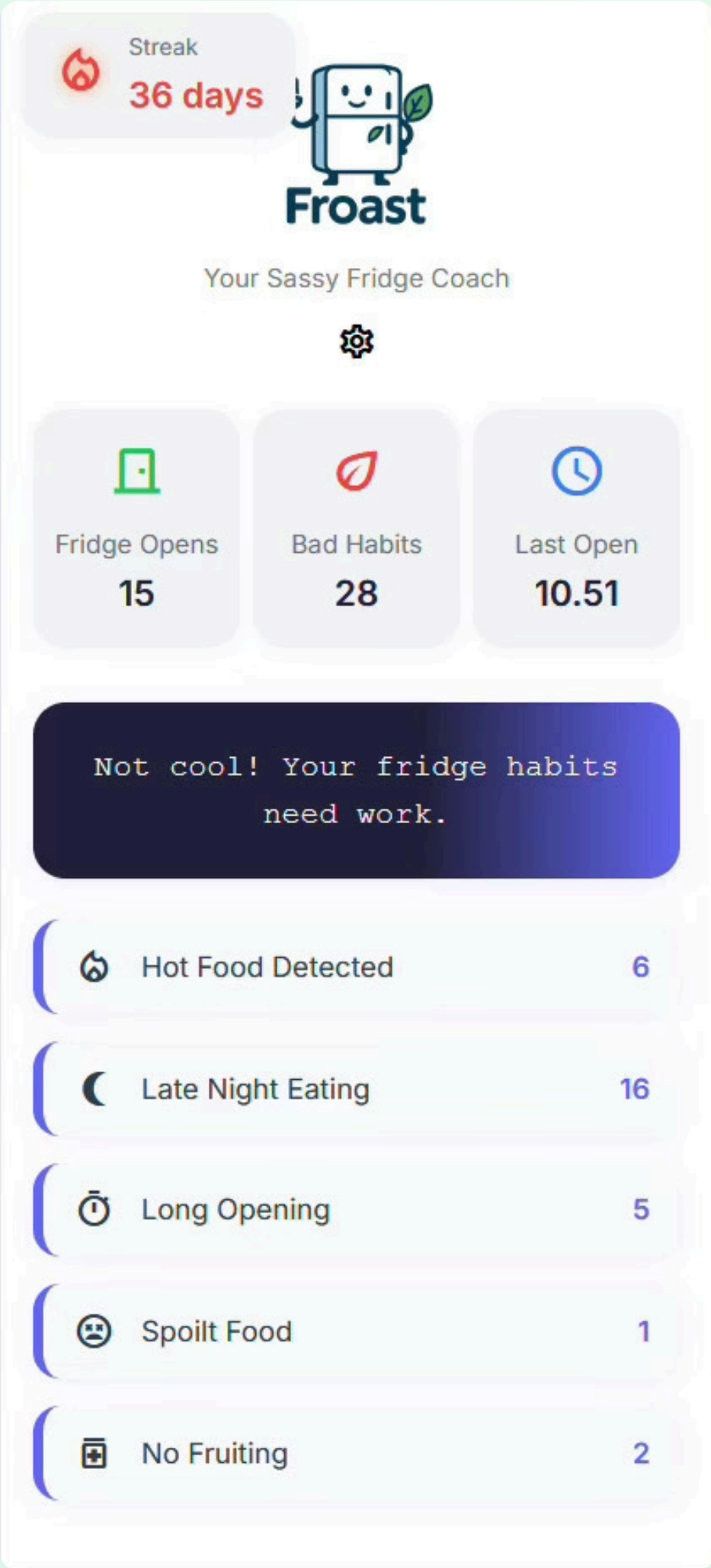## Froast: The Fridge That Roasts You Into Saving The Planet

Smart. Sustainable. **Savage.**

Core Features

Problems	Behavior	Froast's Reaction
Late-night snacking	Door opens after 11 PM	"You hungry or just emotionally empty again?"
Leaving fridge open too long	>15 seconds	"Your indecision is heating the planet."
Storing hot food	Steam sensor triggered	"The fridge is not your sauna."
Poor food rotation	Gas sensor alerts	"You really like cultivating diseases, huh?"
Not eating enough fruits	RFID log of compartments	"Those vitamins won't drink themselves."
Ignoring seasonal energy needs	Temp sensor during hot/cold days	"It's 35°C. Want to cool the Sahara too?"

FROAST Web App

Streak
36 days

Froast
Your Sassy Fridge Coach

⚙

Fridge Opens	Bad Habits	Last Open
15	**28**	**10.51**

> **Not cool! Your fridge habits need work.**

🔥 Hot Food Detected	6
🌙 Late Night Eating	16
⏱ Long Opening	5
☹ Spoilt Food	1
🔋 No Fruiting	2

Sample Behavior Analysis (User A)

Before Froast:

- Avg. door open time: 23s
- Late night opens: 5/week
- Spoiled food events: 3/week

After Froast (Week 3):

- Avg. door open time: 9s
- Late night opens: 1/week
- Spoiled food events: 0

🎯 **Result: 60% drop in bad habits**

Metrics for Measuring Change

Quantitative Metrics

- ↓ Average door open duration
- ↓ Late-night fridge visits/week
- ↓ Steam/gas events
- ↑ Fruit section openings
- ↓ Bad Habits (Web app)
- ↑ Streak (Web app)

Qualitative Metrics

- User feedback
- Roast tone preference tracked (High, Medium, Low)

Behavior Science Backing

Just-in-Time Interventions

Timed buzzers with roast messages.

Loss Aversion

Uses fear of shame over delayed climate gains.

Habit Formation

Consistent feedback combined with humor.

Hardware Components

ESP32

RFID

Gas Sensor

Buzzer

LCD Screen

Motion Sensor

Temperature Sensor
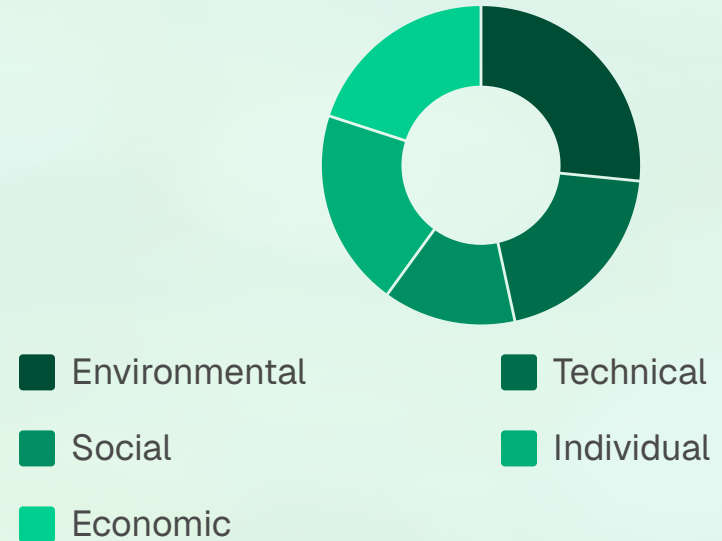
Humidity Sensor

Steam Sensor

User Profiling & Reports

- **Each user identified via RFID**

- **Adjust roast tone (gentle vs savage)**

- **Behavior metrics logged: door, steam, spoilage, etc.**

- **Web App for tracking user behavior**

SUSAF Analysis Summary

- ✅ Most opportunities already implemented
- 🚫 Threats (e-waste, sensor failure) mitigated via:
  - Modular design
  - Recyclability awareness
- Highlights: inclusivity, gamified feedback, and habit shift

- ■ Environmental
- ■ Social
- ■ Economic
- ■ Technical
- ■ Individual

Unique Proposition

Active Behavior Modification

Real-time feedback and roast-powered accountability.

Not like the others💅🏻💅🏻💅🏻💅🏻

Both smart and savage.

Beyond Tracking

Unlike others, Froast changes how you act.

Call to Action

Let's stop **refrigerating** our bad habits.

Join us in making sustainability **cool** — and calling people out while we do it.