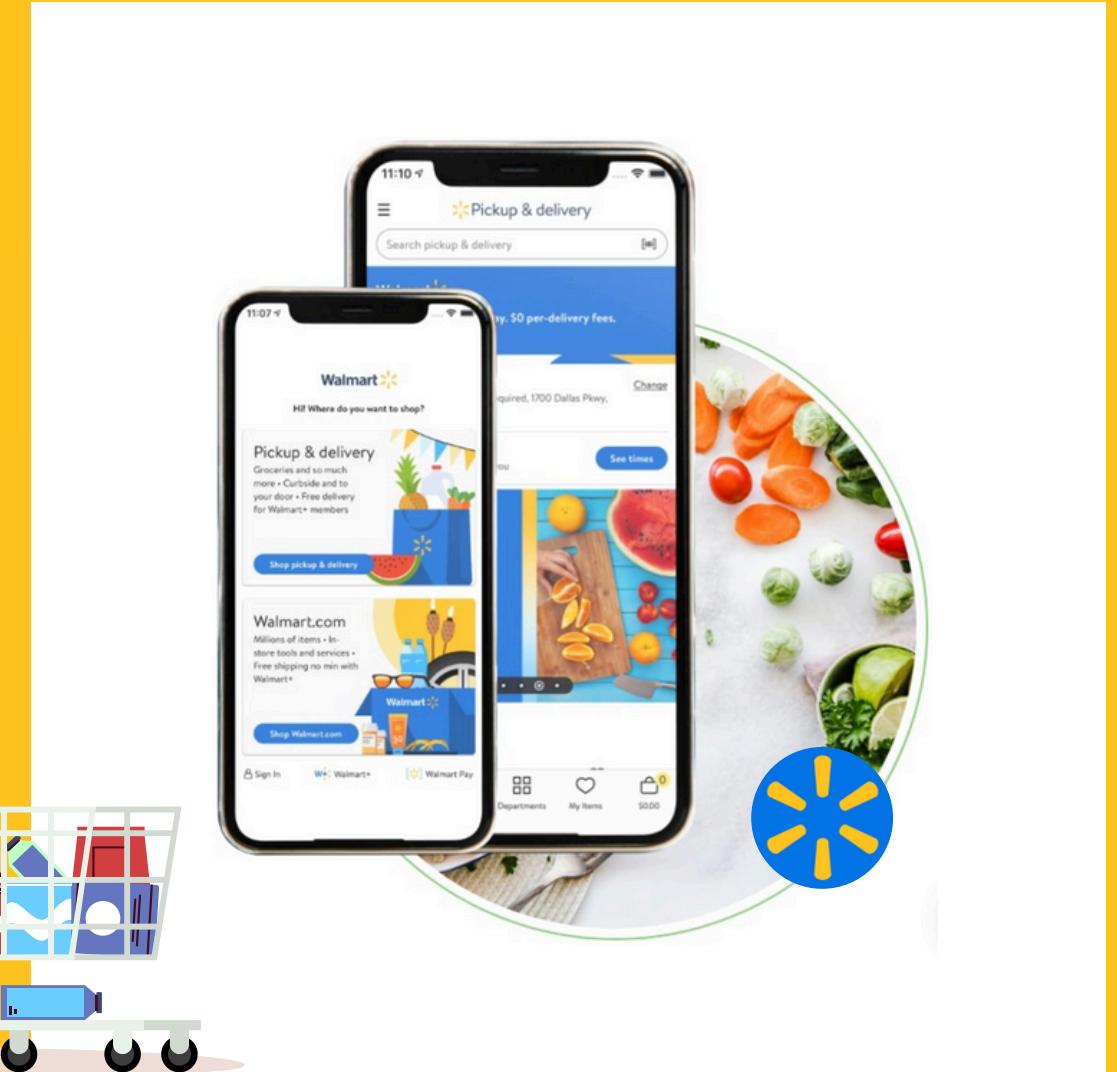
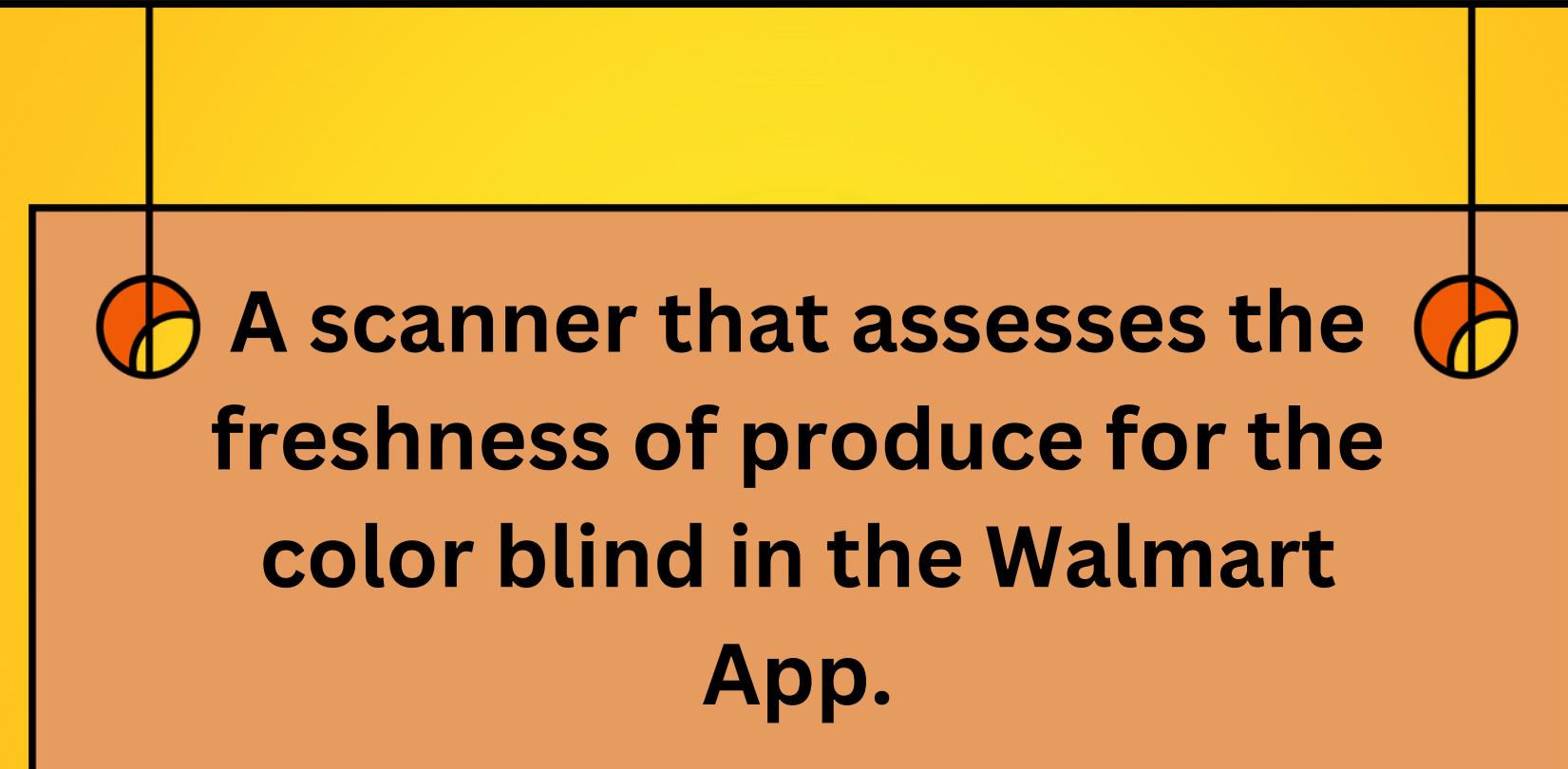


Freshness Scanner: Revolutionizing Produce Assessment

Making shopping convenient for the colorblind





PROBLEM

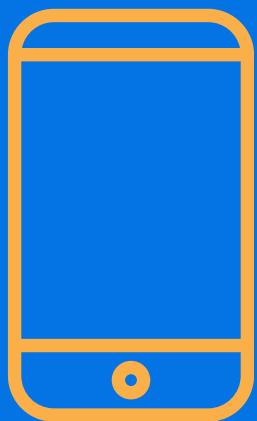


SOLUTION

OVERVIEW



TARGET CUSTOMER



TECH AND USE CASES

SEEING THE UNSEEN

A Hidden Challenge

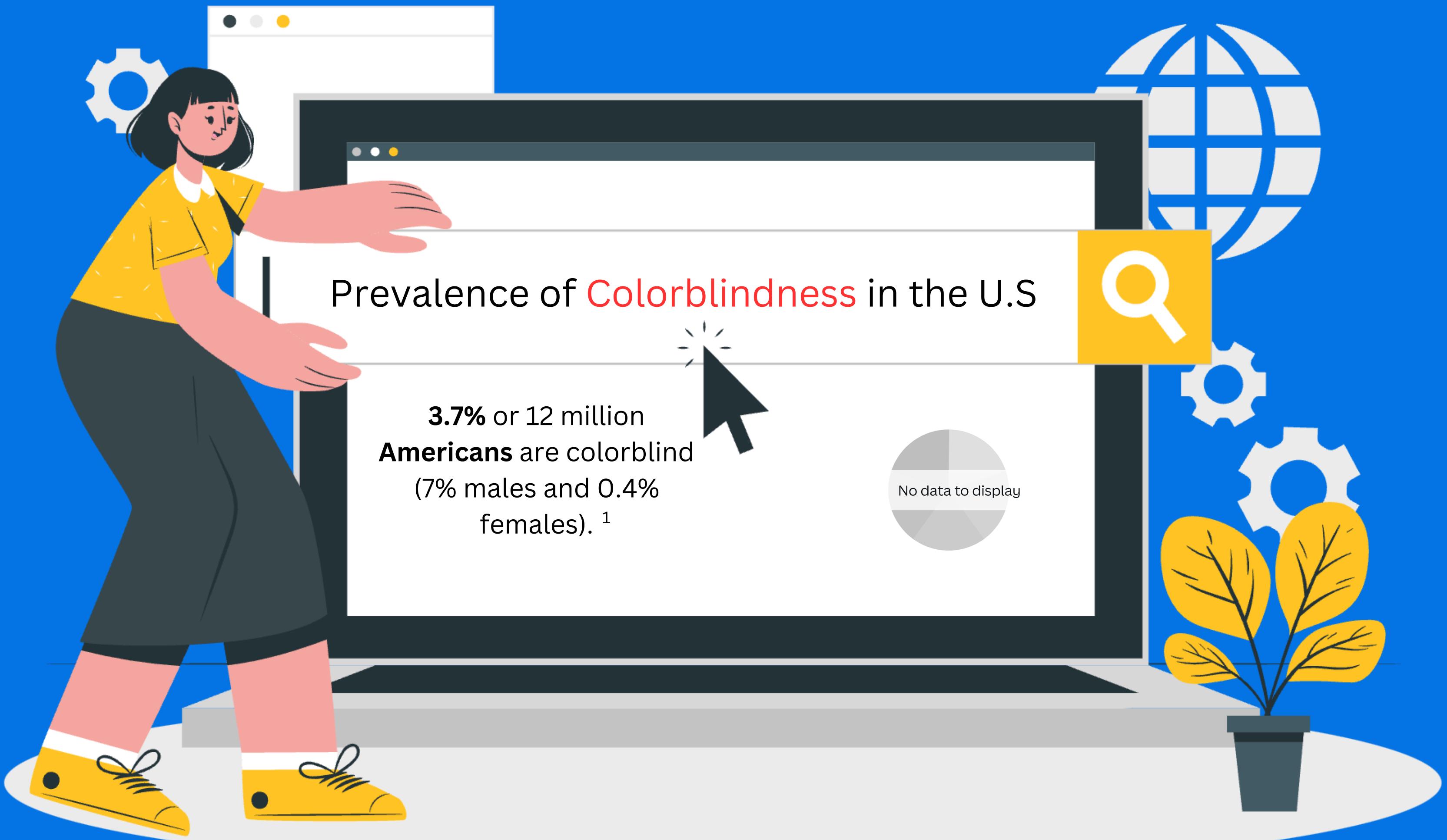


- The terminology of the "colorblind" word can be misleading. Most colorblind people can see many colors but not as broad as others. It is rare to see black and white.
- According to [Colblindor](#), **99% of all colorblind people** suffer from **red-green** color blindness. The numbers of people with Monochromacy color blindness (Total color blindness) are small, perhaps 1 in 33,000 people.¹

Prevalence of Colorblindness in the U.S

3.7% or 12 million
Americans are colorblind
(7% males and 0.4%
females). ¹

No data to display



OUR WHY



Inspired by our colorblind friend, who struggles with tasks like identifying ripe produce during grocery runs, we explored the challenges faced by the colorblind. In addition to several research articles, our friend's frustration with eating unripe bananas after solo shopping trips highlighted the need for better solutions.

OUR WHY: The Data Driving Us



Judy M Steward, Barry L Cole (1989) found that nearly 90% of dichromats and up to two-thirds of anomalous trichomats reported difficulties with everyday tasks that involve color.

SEE ANY DIFFERENCE?

Normal vs Color-Blind



One-third of color-blind people experience problems with foodstuffs in both buying and preparation, particularly those with a red-green deficiency because they ‘see’ very little difference between most colors. (Judy M. Steward, Barry L. Cole, 1989) .

SEE ANY DIFFERENCE?

Protans vs Deutans vs Tritans vs Normal



PROTANOMIA



DEUTERANOAMALY



TRITANOPIA

A good number of both protans and deutans remarked that they were unable to rely on the observation of colour change to decide when meat was cooked but used alternative strategies such as observing texture, cutting the meat, and relying on cooking time. Almost equal numbers of protans and deutans reported difficulty determining the ripeness of fruit and vegetables by judgment of colour. Bananas, apples, and tomatoes were cited as causing the most confusion (Judy M Steward, Barry L Cole, 1989) .



How serious is the issue
of colorblindness in
reality?



Let's meet people and
find out what really
bothers them.



Being colorblind, I often **struggle with everyday tasks**, even something as basic as picking the right groceries.

Whenever I go grocery shopping alone, I often have to ask the clerks, "Can you help me find ripe bananas? I have trouble distinguishing green." **Needing assistance every time makes me feel bad about myself.**

I remember buying fruits for my two-year-old, thinking they weren't ripe yet, only to find them spoiled the next day. That experience left me **scared of accidentally feeding expired food**, so I stopped going grocery shopping alone.

Imagine a solution that addresses every single one of your concerns—wouldn't that be amazing!

SOLUTION



Introducing the Freshness Scanner

Revolutionizing Grocery Shopping with the Walmart App!

- 🎯 Designed for inclusivity: Thoughtfully created for individuals who are colorblind—an often overlooked group.

IN THE STORE

- ➡️ How it works:
 - Scan a product.
 - Instantly access details like condition, health warnings, and expiration date.
 - Decide confidently on whether to buy!
- 📍 Easy to find:
 - Located conveniently in the search box of the walmart app.
 - Also available in the app's services section.

Beyond In-Store Convenience

Making Shopping Smarter at Home and On-the-Go!

IN HOME

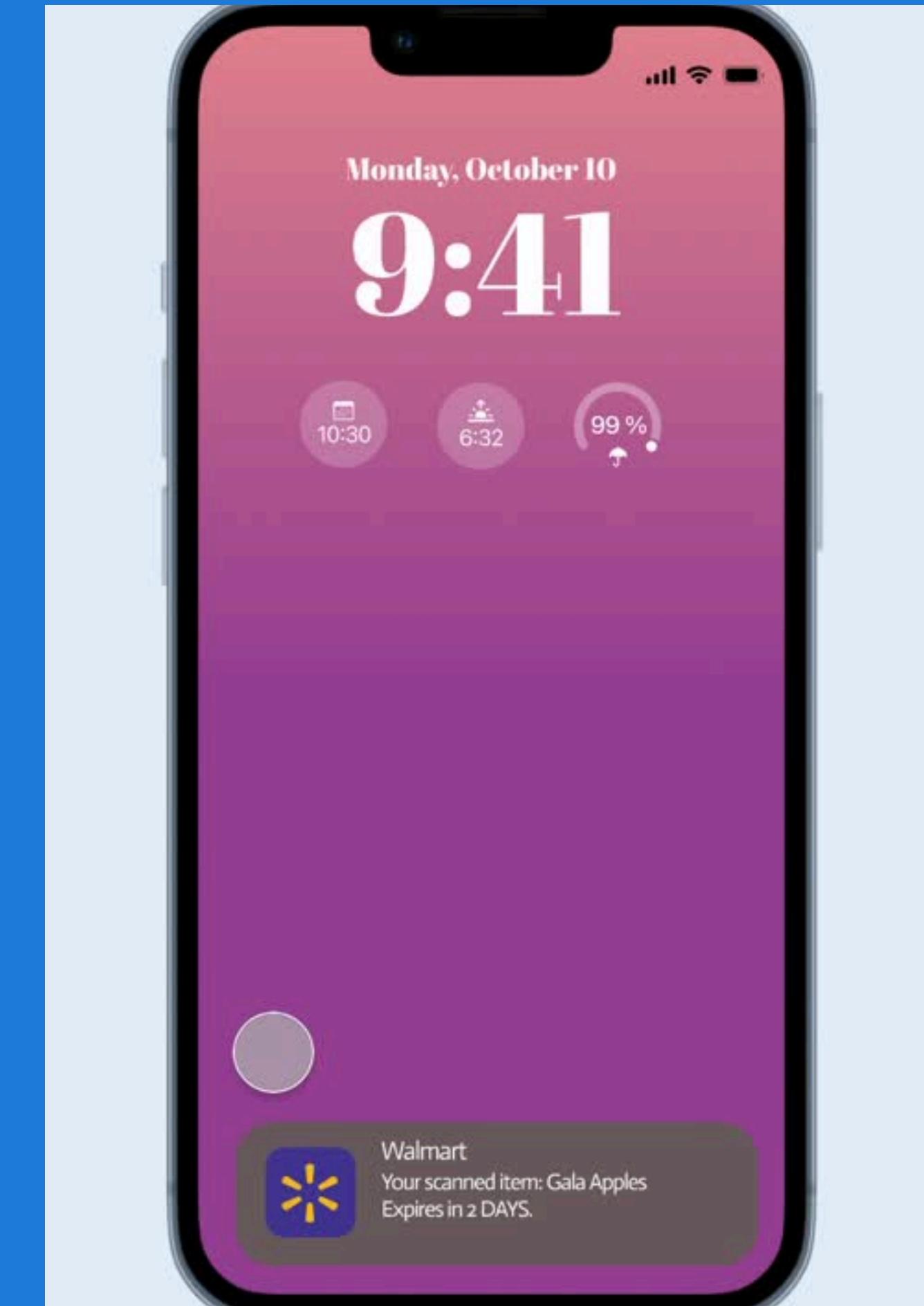
- 🏠 Track expiration dates at home:
 - 🔔 Get timely alerts when items are nearing expiration.
 - ⌚ Plan your Walmart visits with ease—shop more efficiently!

- 🗣 Enhanced accessibility:
 - Text to Voice feature: Reads product details aloud for added convenience. This is helpful for older people too
 - Designed to simplify grocery shopping for everyone.

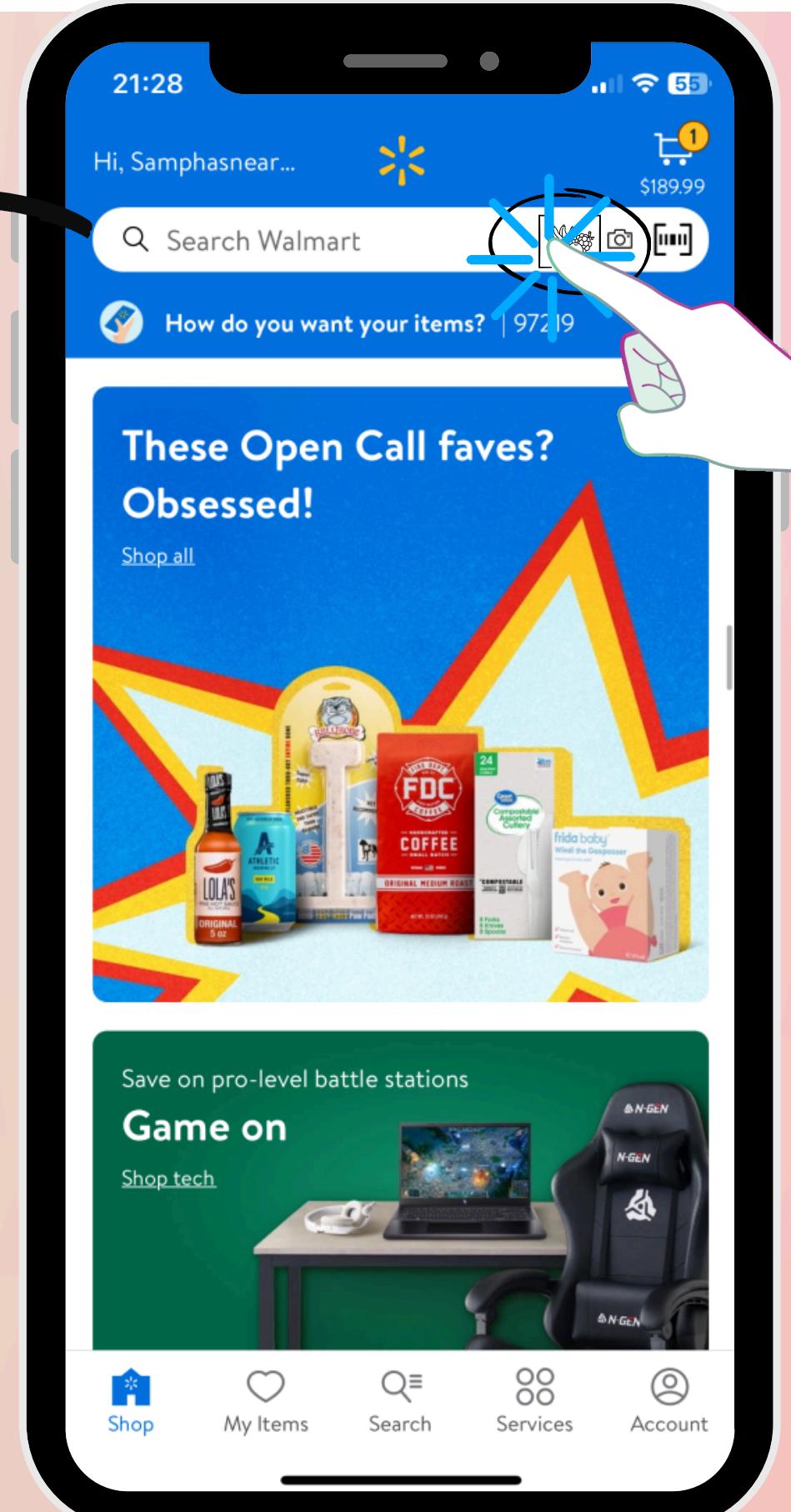
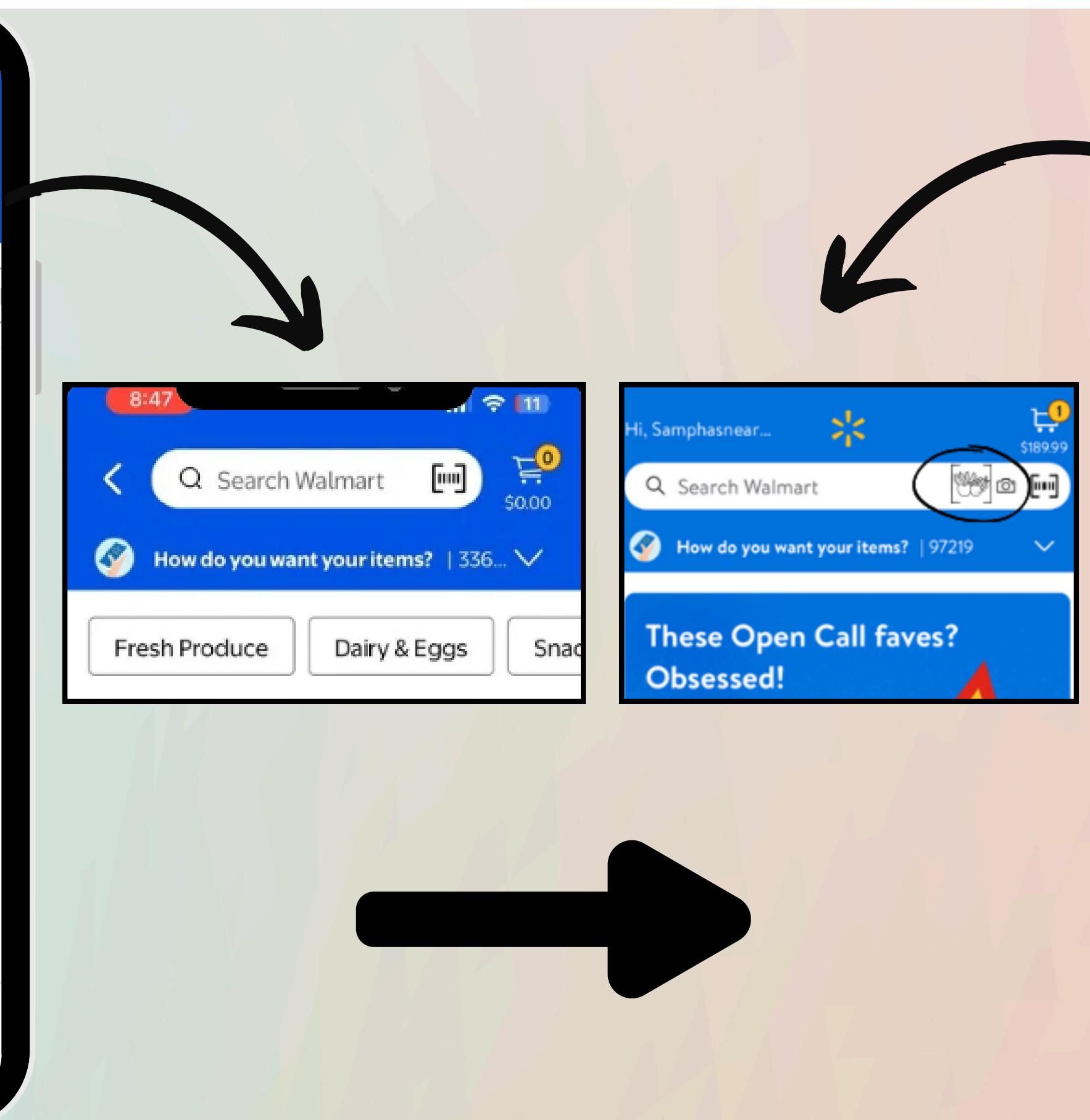
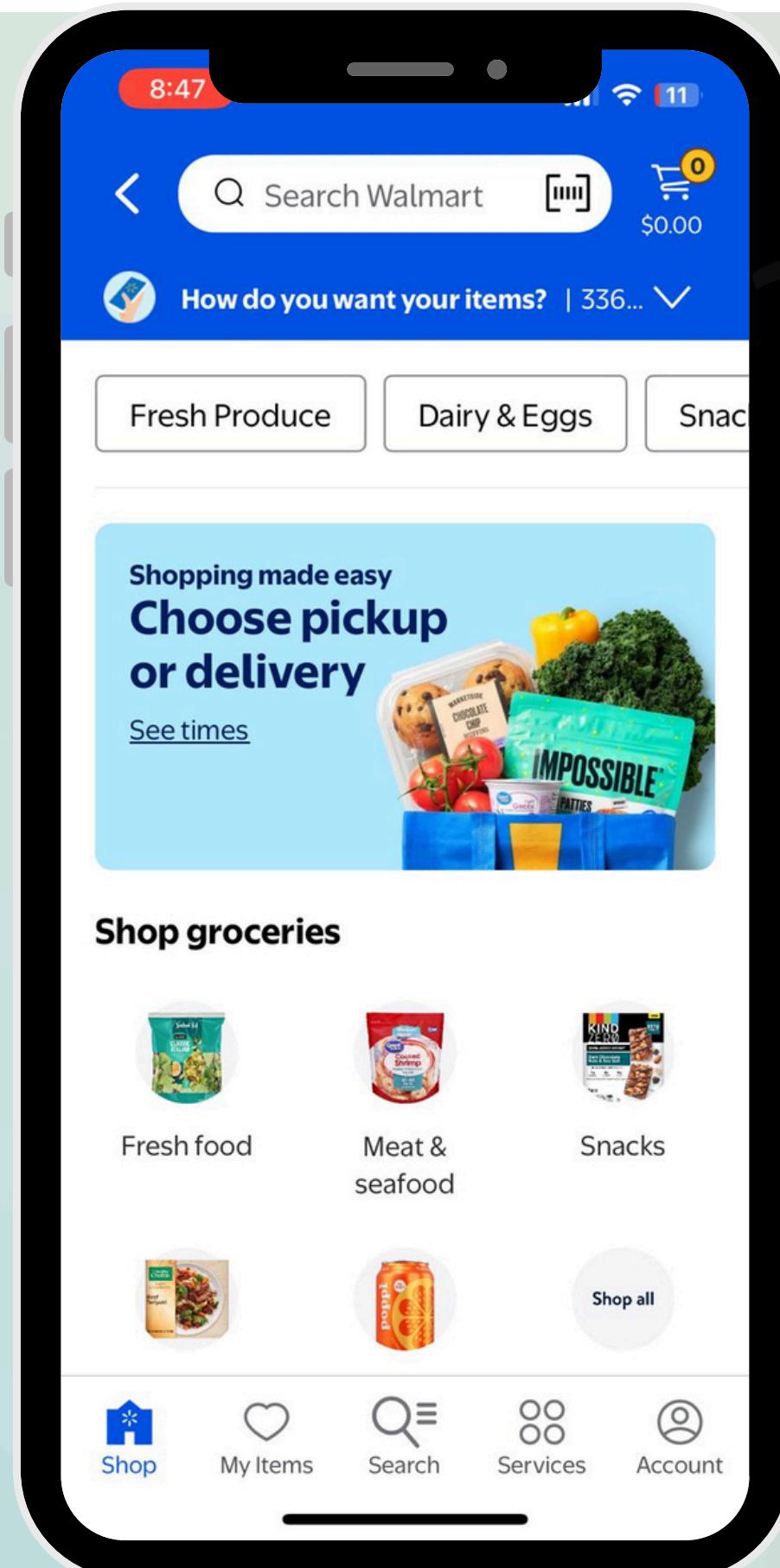
Empowering smarter, stress-free shopping for the colorblind —anytime, anywhere!



LET'S WATCH THE DEMO

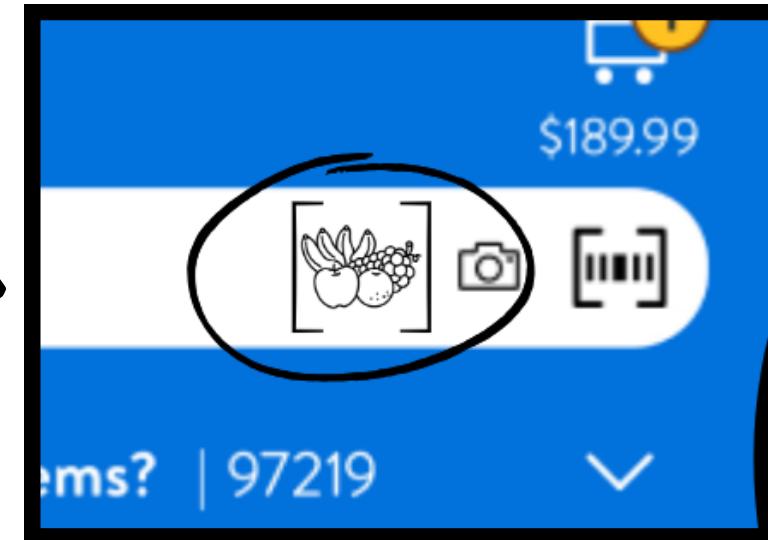
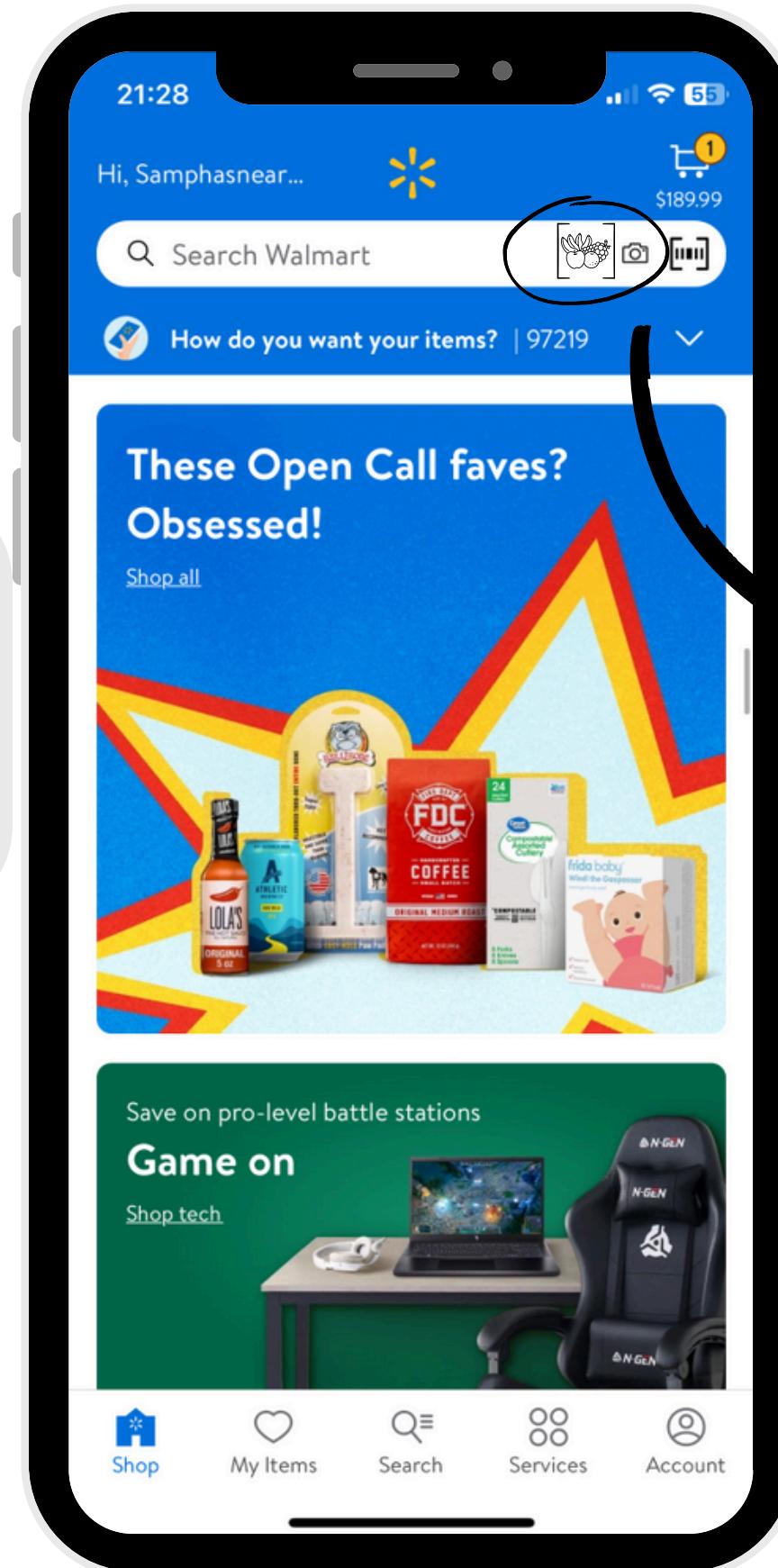


BEFORE vs AFTER (WALMART APP)

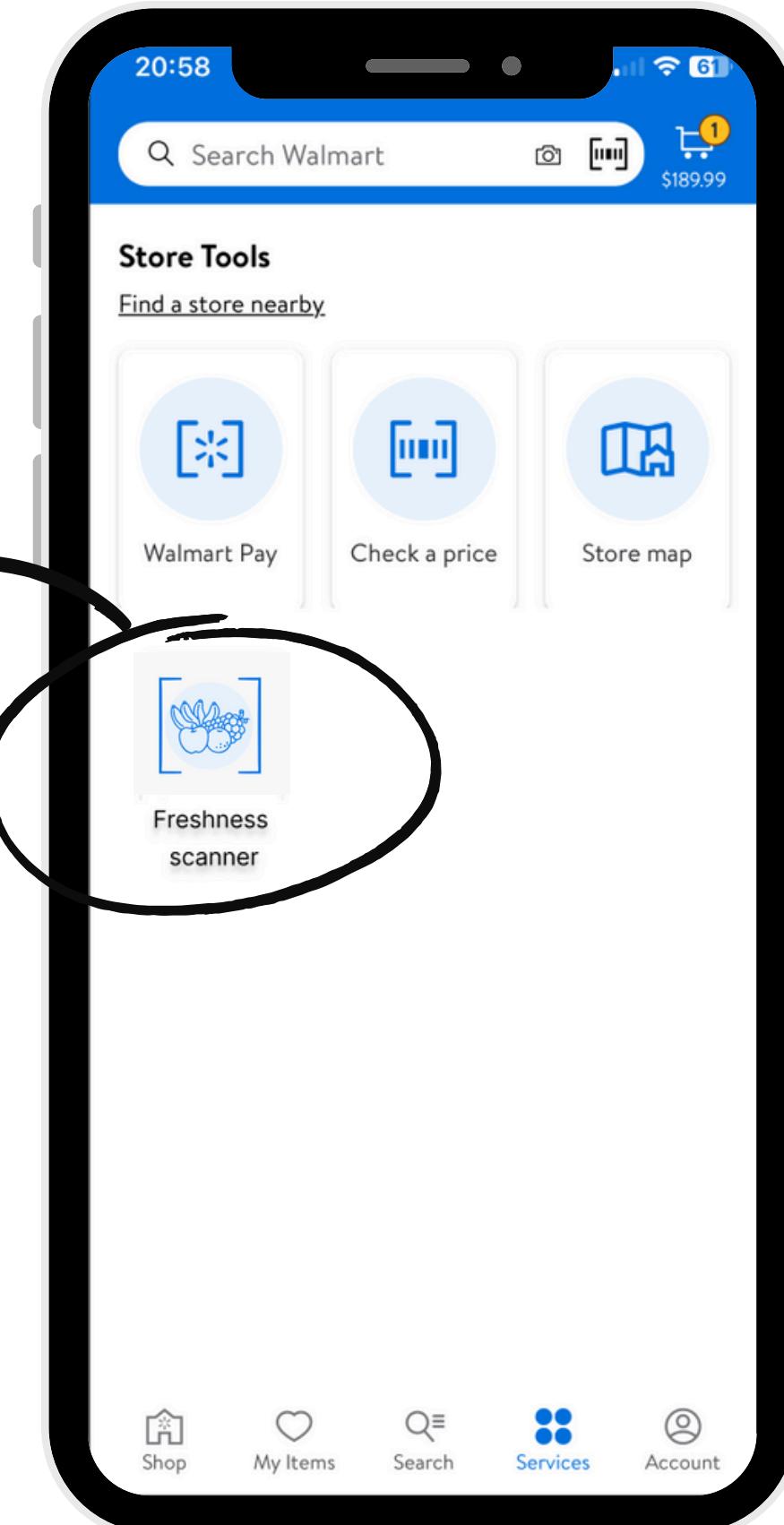


LOCATING FRESHNESS SCANNER

AVAILABLE IN
THE SEARCH
BOX

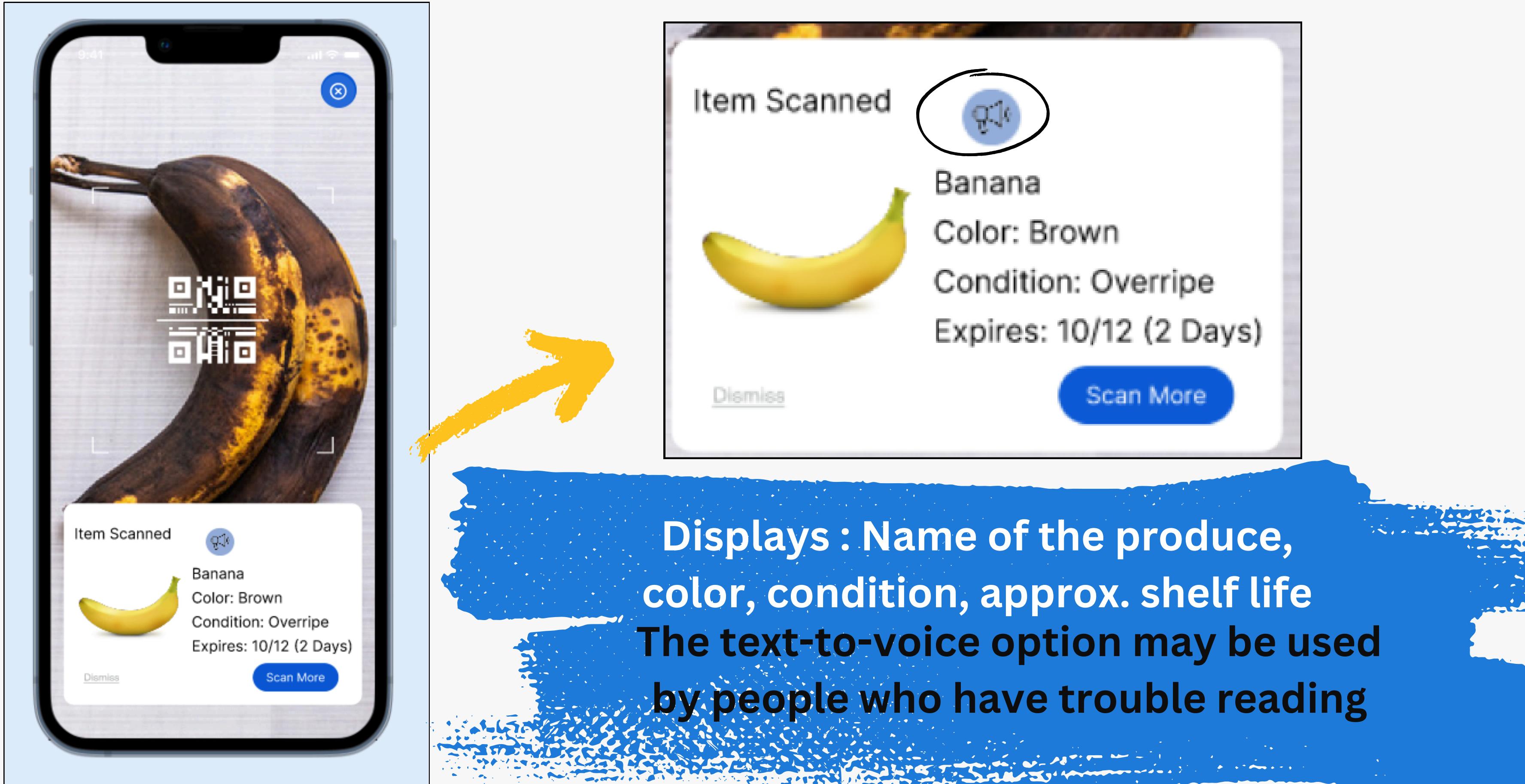


FRESHNESS
SCANNER



AND IN THE
SERVICES TAB

FRESHNESS SCANNER FEATURES



Item Scanned

Banana

Color: Brown

Condition: Overripe

Expires: 10/12 (2 Days)

Dismiss Scan More

Item Scanned

Banana

Color: Brown

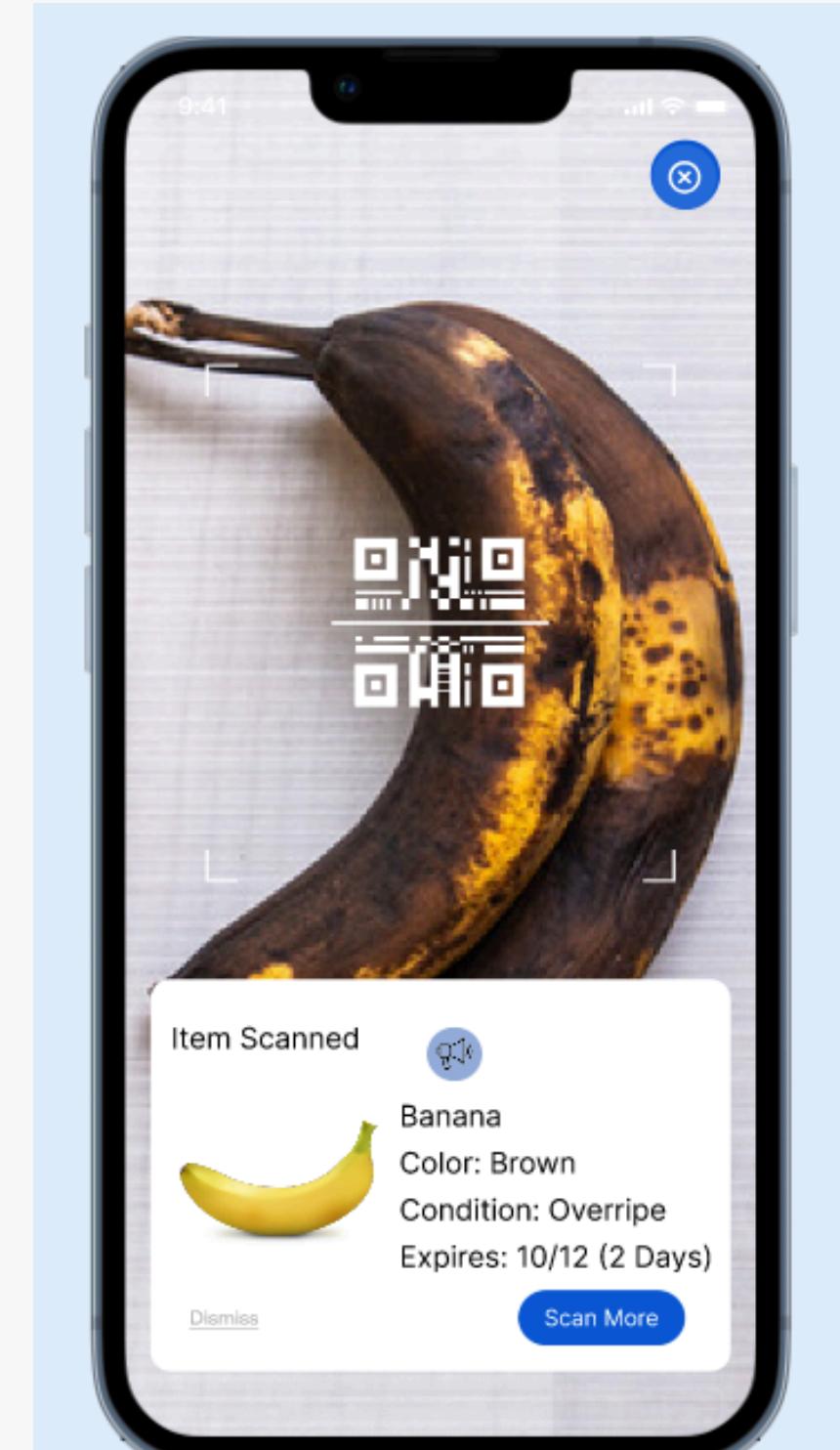
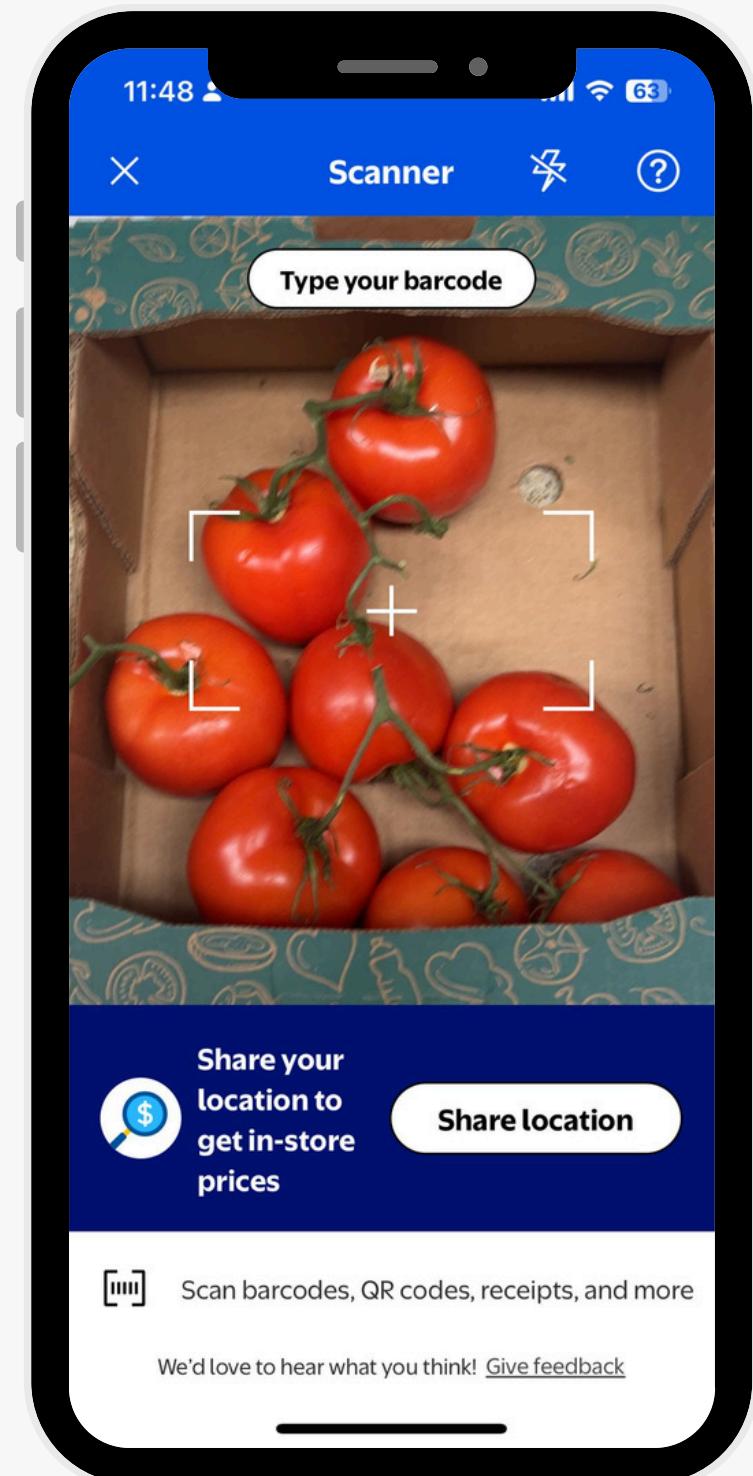
Condition: Overripe

Expires: 10/12 (2 Days)

Dismiss Scan More

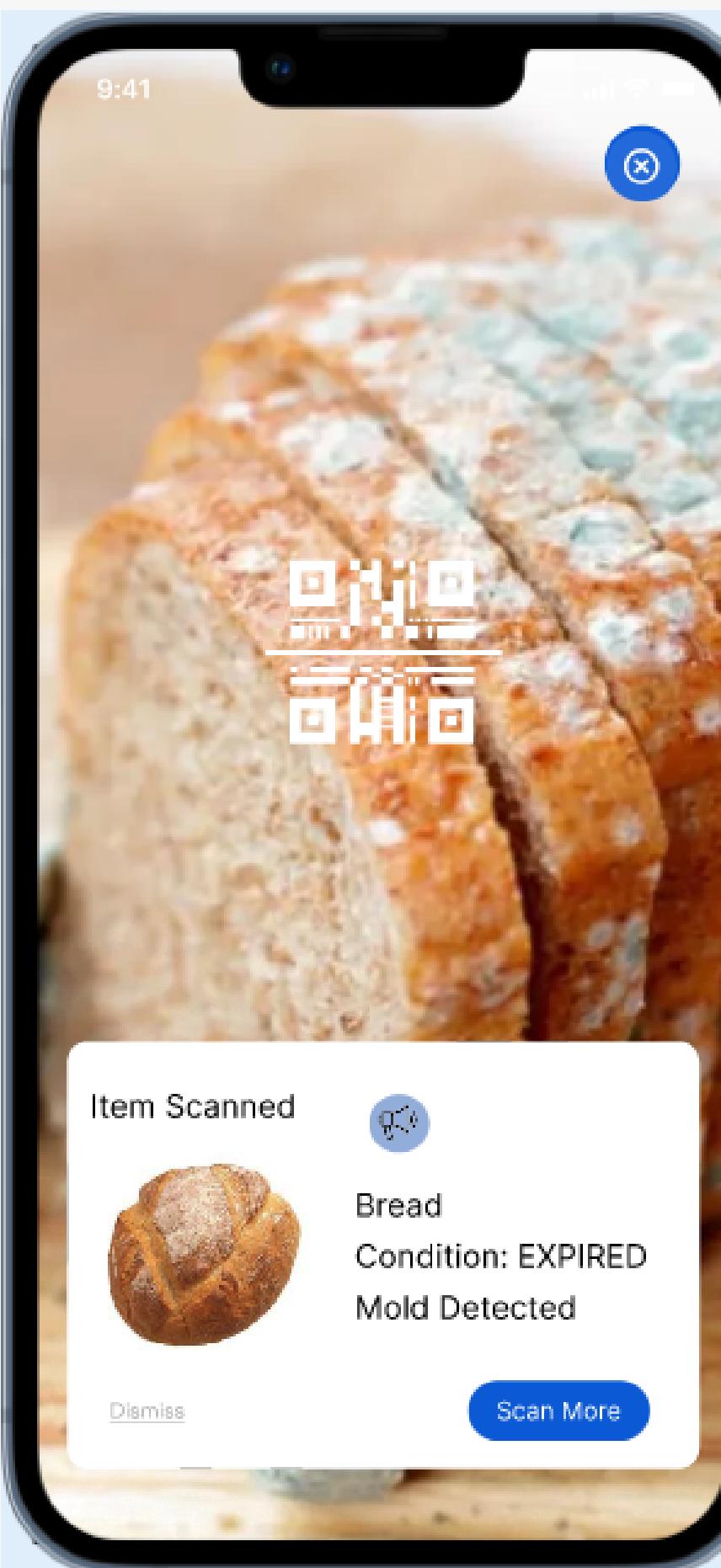
Displays : Name of the produce, color, condition, approx. shelf life
The text-to-voice option may be used by people who have trouble reading

DESIGN FEATURE - IN STORE

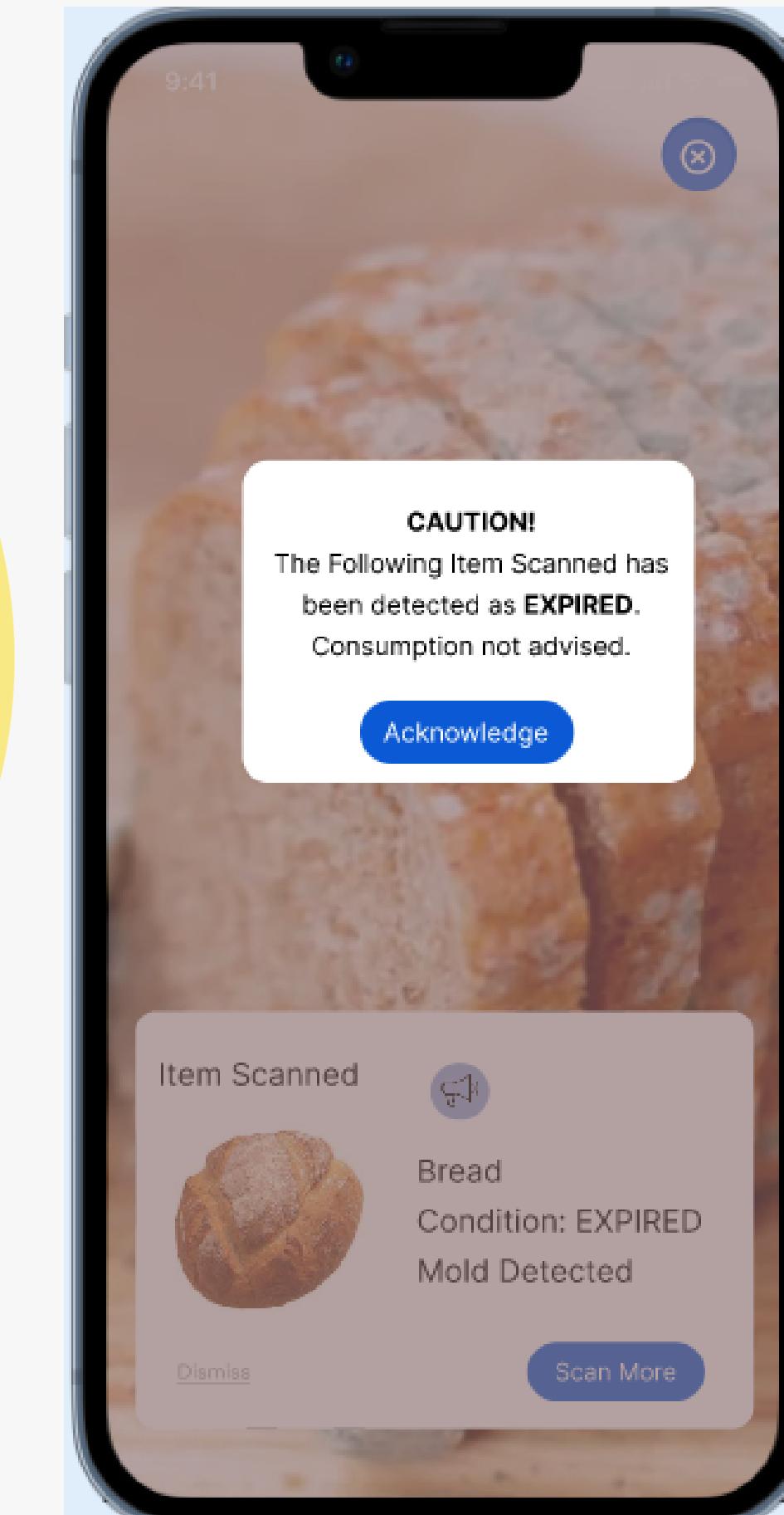


User scans the produce and finds out information e.g - produce name, color, condition, expiration date

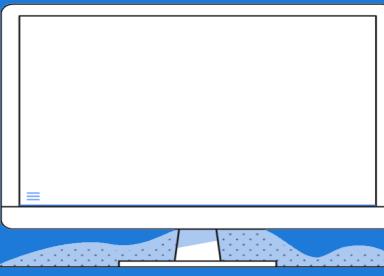
DESIGN FEATURE - IN HOME



Back Home, User
can still check the
food for freshness,
and avoid health
hazards



TECHNOLOGY ASPECTS



ML Model for Produce Quality Assessment

- ML model will be trained specifically on Walmart's fresh food inventory for enhanced accuracy and easier maintainability
- Helps reduce costs for Walmart and increase accuracy of the model

Seamless Integration with Walmart App

- Freshness Scanner smoothly integrates with the app's existing UI, providing convenience to existing users

Expiration Alert: Optimizing Shopping and Meal Planning

Real-Time Data Notifications

- Provides timely expiration alerts to help users plan meals and reduce food waste, hence promoting sustainability

Optimize Shopping Routines

- Forecasts expiration dates, enabling better scheduling for Walmart visits based on inventory needs
- Helps to foster goodwill between Walmart and customers

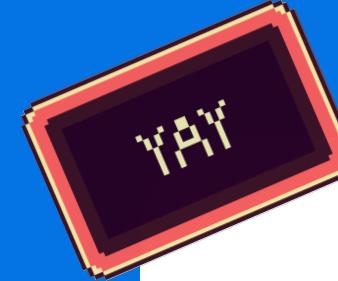
Text-to-Voice & Multi-Language Support

Speech Synthesis Quality

- Converts scanner results into voice in real-time, providing immediate feedback and enhancing the shopping experience
- Can be used by older people / people with limited vision to enhance personal shopping experience

BRANCHING USES

Freshness Scanner



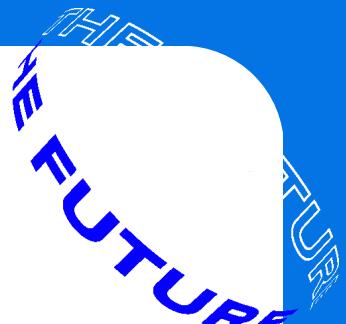
Inclusivity Beyond Colorblindness

- 🟡 Supports a wide range of users:
 - People with limited vision can make use of the text to voice feature to make shopping choices.
- 🟢 Empowers independent shopping:
 - Enables users to make informed decisions - boosting their confidence, and autonomy during shopping trips.



Advantages

- 🍴 Efficient meal planning:
 - Helps reduce food waste by allowing users to plan meals better.
- 💰 Cost-effective shopping:
 - Minimizes the risk of buying food near expiration, saving money.





FRESHNESS SCANNER'S IMPACT

Transforming the Shopping Experience for All Consumers

- Real-time freshness detection, expiration alerts, and accessibility features like text-to-voice make shopping easier for everyone with low vision.
- Expiration alerts help in reducing food wastage and promoting sustainability

Setting a New Standard for Inclusivity

- By addressing diverse challenges, we're breaking barriers in technology.
- Each advancement brings us closer to equal access for all users, creating a smarter, more efficient shopping experience.



REFERENCES & TOOLS



◆ COLORBLIND GUIDE All you need to know about color blindness.

<https://www.colorblindguide.com/post/colorblind-people-population-live-counter>¹

◆ Colorblind Awareness: Living with Color Vision Deficiency

<https://www.colourblindawareness.org/colour-blindness/living-with-colour-vision-deficiency/food/>

◆ Judy M, Steward, Barry L, Cole. “*What do color vision defectives say about everyday tasks?*”

https://scholar.google.com.au/citations?view_op=view_citation&hl=en&user=-G_zMxEAAAAJ&citation_for_view=-G_zMxEAAAAJ:d1gkVwhDplOC LWW. May 1, 1989. pp. 288 - 295.

◆ Figma. (n.d.). *Figma: The Collaborative Interface Design Tool*. Retrieved from

<https://www.figma.com>

◆ Walmart. (n.d.). *Walmart: Shopping & Savings - Easy Pickup, Grocery Delivery*. Available from Google Play Store and Apple App Store.

◆ Canva. (n.d.). *Canva: Visual Suite for Everyone*. Retrieved from <https://www.canva.com>



Thank you
so much!

THANKS



QUESTIONS & ANSWERS