



Project Nurture

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Hunger - At Our Doorstep

Access to nutritional food has become increasingly hard-to-reach for a growing number of people within our community, causing the social epidemic of hunger to spread rapidly while remaining hidden from society's eyes

In Mecklenburg county alone, there are over 158k people (18%) that are food insecure¹⁰.

Although it is hard to identify, hunger does not exist in a vacuum - it is systemically embedded within our society, compounding its impact alongside the basic needs for healthcare, housing, and education.

Food banks currently exist to help mitigate this growing need, but their lack of resources and technological abilities are critical constraints to how efficiently they can serve the hunger needs within our community.



Hunger - What Can We Do?

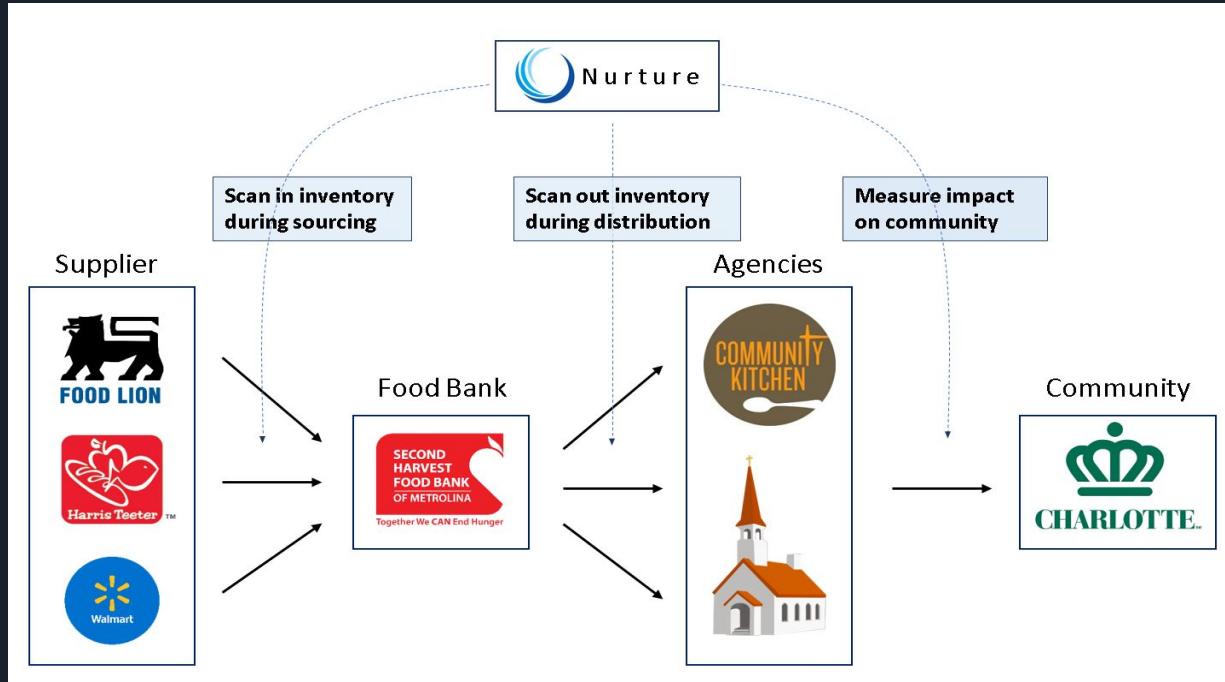
Our key research question is how to improve the way food moves from the suppliers to the hands of those in need?

Based on our needfinding results: this need lies in the way the food bank manages their inventory and volunteers within the constraints of their environment.

We view the issue of hunger as an optimization problem that we can solve for by embedding digital technologies into key areas of the existing supply chain infrastructure and food distribution network.

How Can We Improve the System?

Nurture's conceptual solutions are **strategically embedded** within the end-to-end process of food donation: specifically the sourcing, management, and delivery of donated inventory





User Goals

To be able to effectively integrate within the current food donation process and help solve the issues faced by the key users identified in Needfinding, Nurture must be able to:

User Goals for Volunteers and Food Bank Drivers:

- Scan-in sourced inventory
- Sort and assign warehouse location
- Assist in determining inventory to discard
- Scan-out distributed inventory
- Sign-in for shift or session
- Download daily activity (route or session details)

User Goals for Food Bank Manager:

- View inventory availability, count, and location
- Track location of drivers
- Manage volunteer activity and needs
- Manage accounts, partners, and events
- Generate reports for funding requests and leadership meetings

Usability Goals

Efficient

Nurture should be able to quickly respond to the various user commands and execute the required actions

Easy to Use

Nurture should be easy to operate in both a warehouse and office environment

Error Tolerant

Nurture should be error tolerant—guiding users of various skill levels through natural interfaces and allowing users to easily reverse undesired actions

Effective

Nurture should improve the current process of sourcing, managing, and donating food against defined key performance indicators



Safe to Use

Nurture should be safe to use across the various tasks involved in sourcing, sorting, and distributing food

Easy to Learn

Nurture should be easy to learn and intuitive given the wide range of users that will operate the application



Design Goals

- **Quick and simple** way to scan donated inventory in and out of the food bank, allowing the food bank to effectively manage inventory
- **Automate and streamline** the existing manual and error prone processes of tracking inventory, accounts, and volunteers
- Provide **accurate and detailed data** (at an item level) to optimize the day-to-day operations of the food bank
- Drive **increased and enhanced collaboration** among upstream supplier, the food bank, and downstream agencies
- Provide needed **visibility and control** to the food bank management that they currently do not have

Design Concepts

Given the defined user and usability goals, the following design concepts were developed to optimize the current food donation process and enable the food bank to more effectively serve its community.

Design Concept 1 - *Static*

PDA Scanner + Simple Inventory Management System

- Physical PDA Scanner
- Simple information retrieval inventory system
- Static data (daily batch cycle)

Design Concept 2 - *Dynamic*

QR Scanning App + Dynamic Inventory Management System

- Phone/tablet app with QR Scanner
- Dynamic and customizable inventory system
- Real time data

Design Concept 3 - *Interactive*

Wearable Scanner + Interactive Inventory Management System

- Smart glasses for scanning functionality
- Interactive smart board with embedded inventory system
- Real time data

Design concepts increase from left to right in functionality, technical complexity, and implementation cost / time



Design Concept 1 - *Static*

PDA (*Personal Digital Assistant*) Scanner
&
Inventory Management System

PDA Scanner and Inventory Management System

End to End Process

Data Collection

Driver/Volunteer



Nurture Web Server

Inventory data is fed into Nurture's web server as a centralized data repository, and then sent to downstream functionalities

Inventory Scanning with Mobile App:

- Leverage existing physical scanner technology
- Scans QR codes / barcodes of inventory
- Provides a simple way to capture inventory data

Data Utilization

Management

A screenshot of a web-based inventory management application. At the top, there is a header with the logo 'Nurture Inventory Management System' and a user profile for 'Jennifer A'. Below the header is a search bar with the placeholder 'Enter Item' and a 'Search' button. Underneath the search bar is a table with three rows of data. Each row contains four columns: 'Item 1', 'Location', 'Count', and 'Date'.

Item 1	Location	Count	Date
Item 2	Location	Count	Date
Item 3	Location	Count	Date

Simple Inventory Management System:

- Search-based inventory management
- Provides inventory location, counts, and date of sourcing
- Generates basic weekly reports of activity

PDA + Inventory Management System

PDA Scanner Features:

- Portable handheld device to scan inventory as it is received by the food bank
- Contains a screen to view scanned items and reverse items scanned in error
- Contains log-in functionality to authenticate and track users
- Feeds into the inventory management system database

Inventory Management System Features:

- Simple search functionality for information retrieval
- Minimalistic user interface - inventory, count, location displayed
- Tabular report generation (spreadsheet output)
- Tracking number of volunteers registered





PDA + Inventory Management System

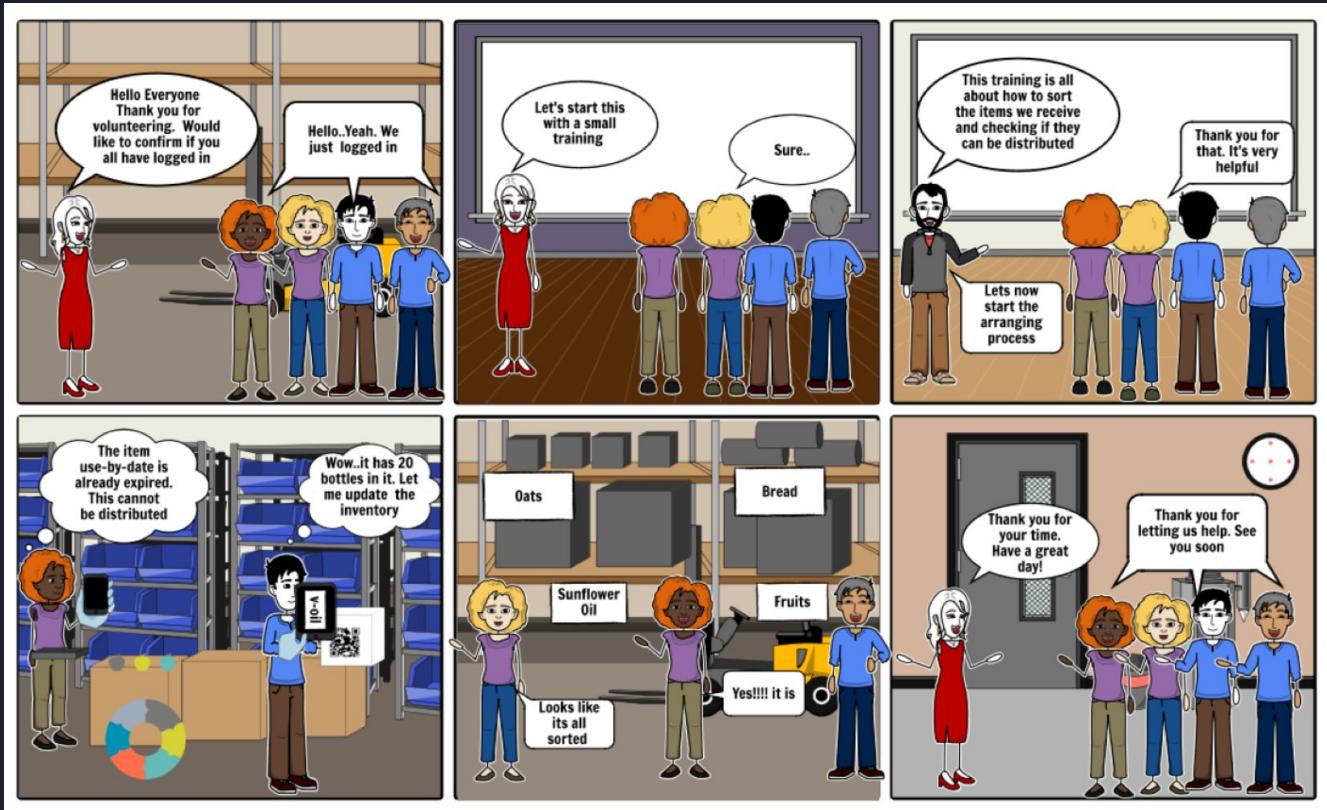
Pros:

- Quickest way to meet the core needs of inventory management
- Cost effective - low cost to develop and maintain
- Easy for users to learn (similar to existing inventory systems)
- Easy to implement using existing technology
- Can leverage the food bank's current infrastructure (servers, network,..etc)

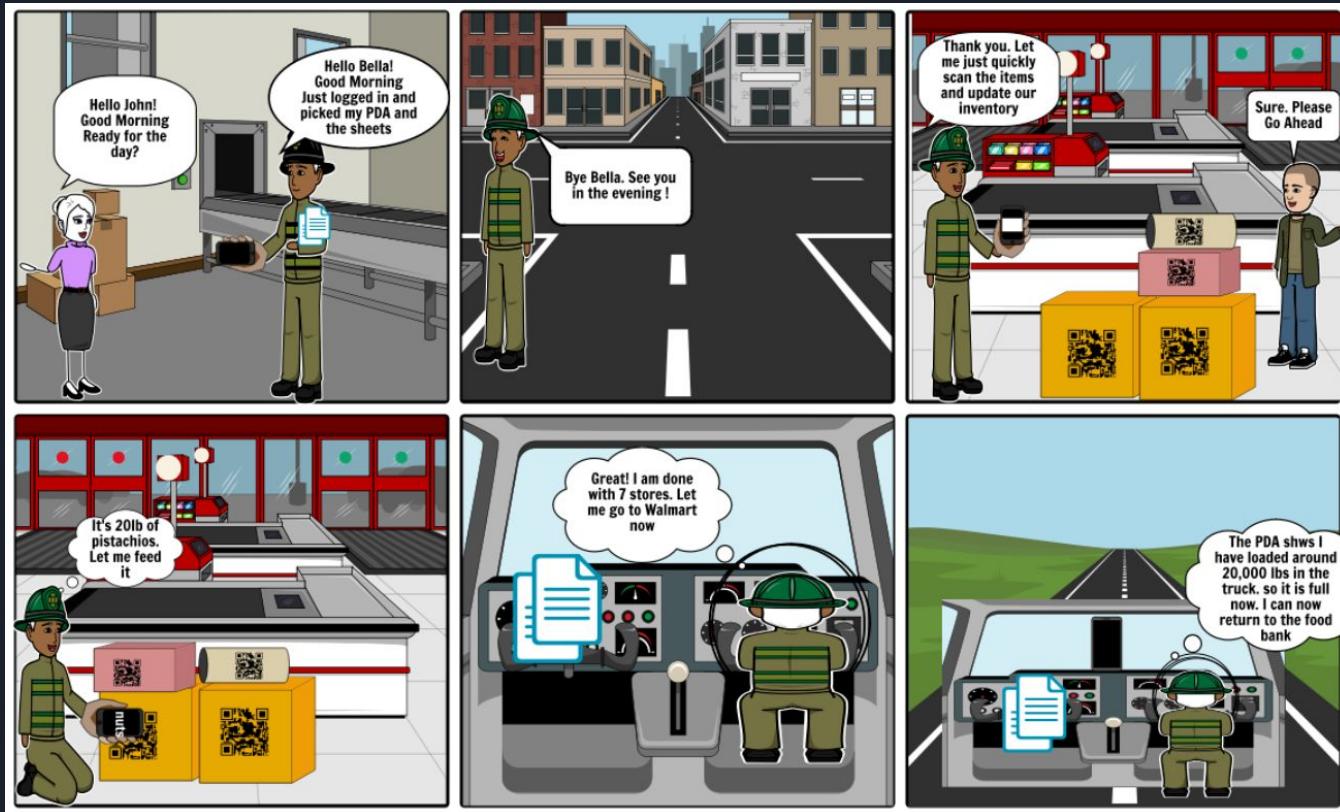
Cons:

- Low user interaction and collaboration - just point/scan and answer simple questions
- Cannot assist users in deciding if an item meets donation quality guidelines
- Limited features/functionality - only simple data and insights can be retrieved
- Not scalable - must purchase more scanners for additional volunteers
- Lower efficiency due to the use of physical items (charge, distribute, maintain)

PDA Storyboard - Volunteers

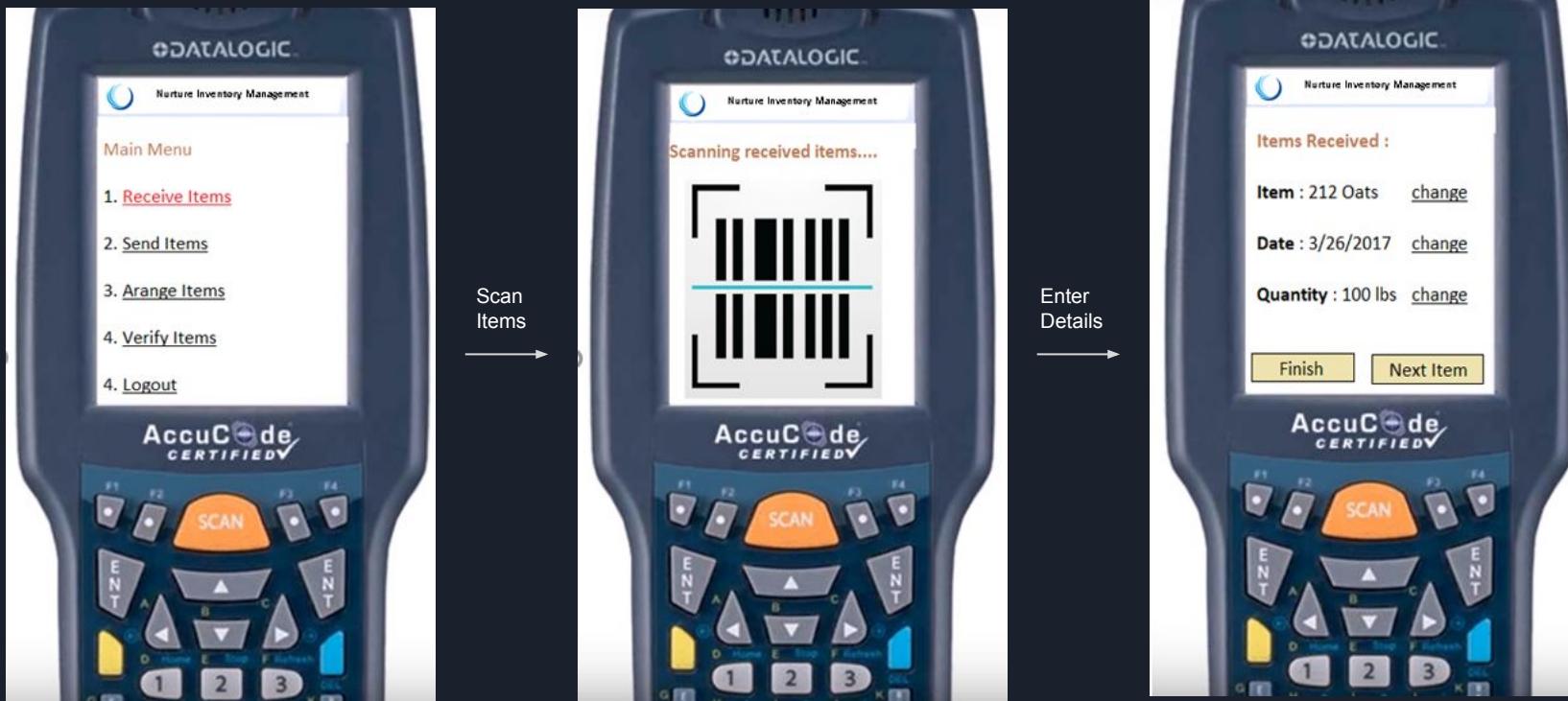


PDA Storyboard - Driver



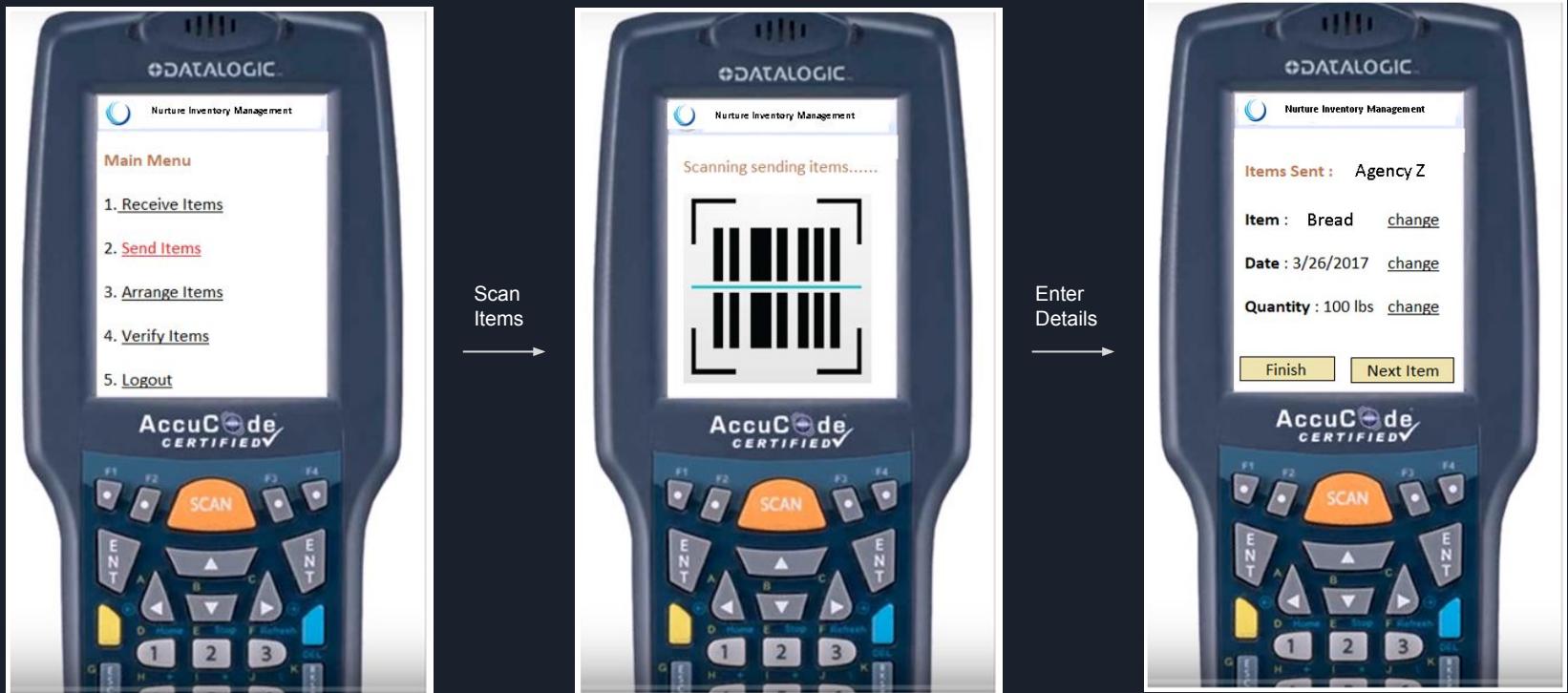
PDA WireFrames

The following wireframes outline how a driver would scan items being picked up from a supplier, with item data being sent to the inventory management system for reporting



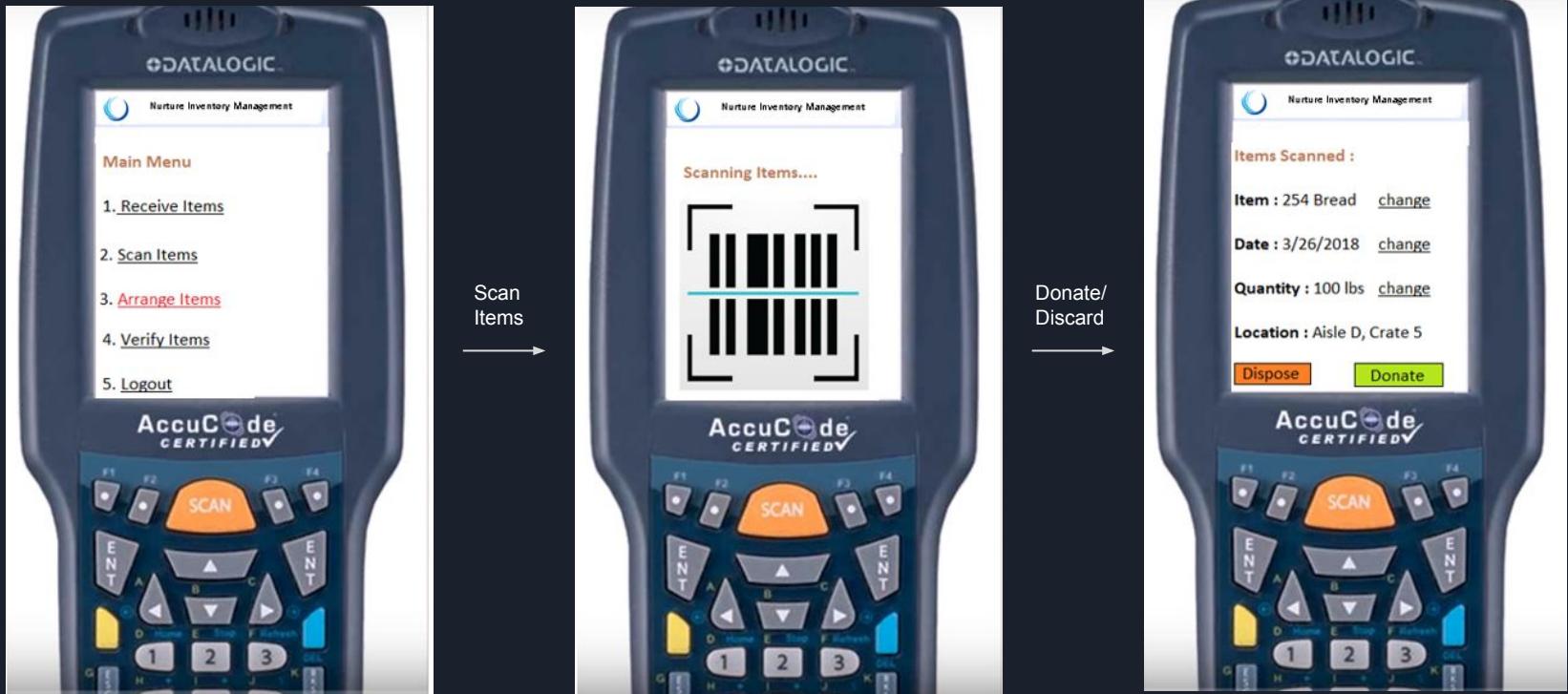
PDA WireFrames

The following wireframes outline how a volunteer would scan inventory being picked up by an Agency, registering them as a purchase in the management system and increasing the Agency Z's account.



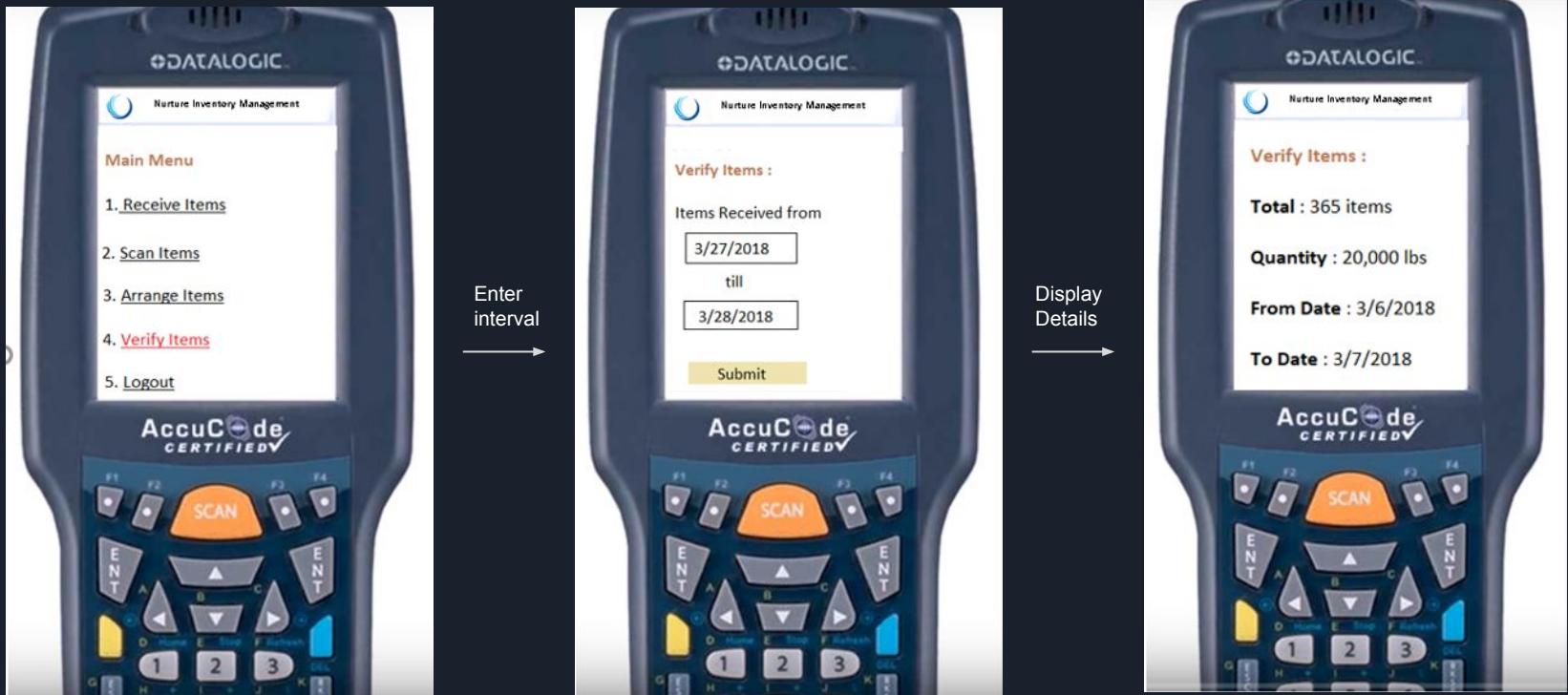
PDA WireFrames

The wireframe outlines how it can be used by the volunteers to find where the item belongs or add an entry to the database regarding whether the item was donated or discarded



PDA WireFrames

The following wireframes outline how the stock received to inventory can be verified in periodic intervals. This feature can also be used by the drivers to review the quantity/weight of items in the truck



Inventory Management System Storyboard

The following storyboard shows how a basic inventory management system (point-and-click modality) can be used to improve the day-to-day operations of the food bank by resolving their inventory management issues



Inventory Management System Wireframes

The following Wireframes outline the simplistic design of the Inventory Management System for Concept 1. The design is focused on providing basic information in the quickest way possible, with no visualization capabilities or multimodal functionality - inventory and account management examples:

This wireframe shows the 'Inventory' section of the system. On the left, a vertical navigation menu lists Home, Settings, Inventory (which is highlighted in red), Suppliers, Agencies, Accounts, Reports, and Donations. The main content area features the 'Nurture Inventory Management System' logo and the user 'John Smith'. Below this is a search bar labeled 'Search Item:'. A table displays the following data:

Item	Location	Count	Date
Bread	Aisle 2, Crate 6	200lb	3/26/2018
Oil	Aisle 1, Crate 1	200lt	3/12/2018
Oats	Aisle 2, Crate 2	200lb	3/12/2018
Milk	Aisle 1, Crate 6	200lb	3/12/2018
Meat	Aisle 3, Crate 6	200lb	3/12/2018
Fruits	Aisle 4, Crate 6	200lb	3/12/2018

Inventory Management: Search Box with Auto-fill functionality - generates basic search results: query and response interaction

This wireframe shows the 'Agencies' section of the system. The left navigation menu includes Home, Settings, Inventory (highlighted in red), Suppliers, Agencies, Accounts, Reports, and Donations. The main area displays the 'Nurture Inventory Management System' logo and 'John Smith'. A search bar is labeled 'Search Agency: agency##'. A table lists agency data:

Agency Name	Address	Quantity	Last Visit Date	Amount
Agency##	Address##	##lb	3/12/2017	xxx\$
Agency##	Address##	##lb	3/12/2017	xxx\$
Agency##	Address##	##lb	3/12/2017	xxx\$
Agency##	Address##	##lb	3/12/2017	xxx\$
Agency##	Address##	##lb	3/12/2017	xxx\$
Agency##	Address##	##lb	3/12/2017	200\$
Agency##	Address##	##lb	3/12/2017	200\$
Agency##	Address##	##lb	3/12/2017	200\$
Agency##	Address##	##lb	3/12/2017	xxx\$

Export

Account Management: Manual account data entered and reviewed for tracking and reporting purposes



Design Concept 2 - *Dynamic*

Mobile App Scanner (*Phone/Tablet*)
&
Dynamic Web Portal Management System

Mobile App Scanner and Dynamic Web Portal Management System

End to End Process

Data Collection

Driver/Volunteer



Nurture Web Server

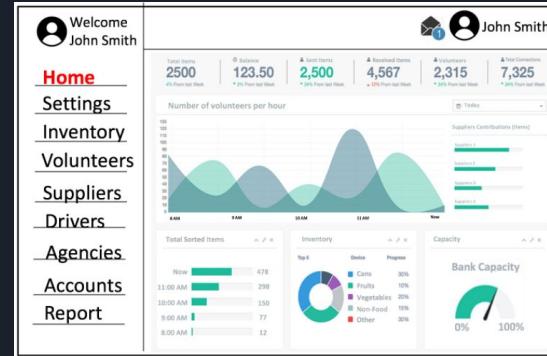
Inventory data is fed into Nurture's web server as a centralized data repository, and then sent to downstream functionalities

Inventory Scanning with Mobile App:

- Custom app downloaded onto phone/tablet
- Scans QR codes / barcodes of inventory
- Provides a way to capture inventory data and assist in sorting process

Data Utilization

Management



Dynamic Dashboard:

- Real-time, dynamic dashboard for food bank business analysis
- Manage day-to-day operations
- Point-and-click Modality



Mobile App Scanner + Dynamic Web Portal

Mobile Application Features

- Mobile app for phone or tablet - used by volunteers, drivers, and managers
- QR/Barcode scanning ability to scan inventory as it is received by the food bank and distributed to downstream partners
- Feeds data into the inventory management system database
- Contains log-in functionality to authenticate users and track drivers
- Contains Volunteer training functionality to improve slow training procedures
- Large buttons and menu items embedded in UI to allow operation with gloves
- Simple undo functionality to reverse items scanned in error



Mobile App Scanner + Dynamic Web Portal

Dynamic Web Portal Management System Features

- Online web-portal to help run the day-to-day activity of the food bank
- Sign on / user authentication
- Customizable dashboard showing real-time data and historical trends (volume of items, # of volunteers, time to process inventory,...etc)
- Geolocation functionality for tracking for drivers on various routes
- Management of accounts, volunteers, and payments
- Collaboration and Business Intelligence reporting



Mobile App Scanner + Dynamic Web Portal

Pros:

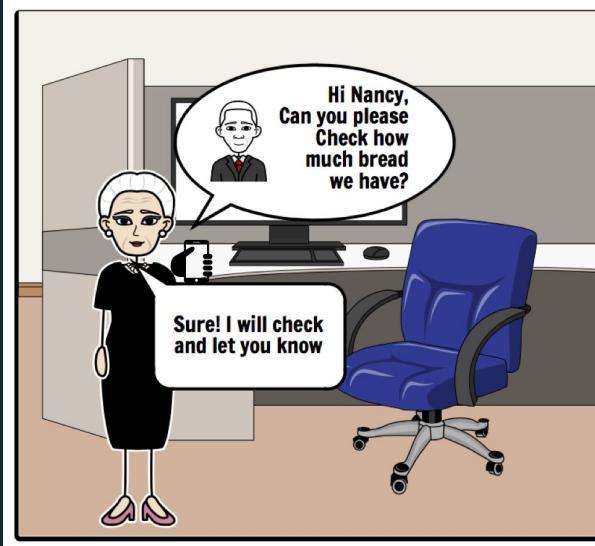
- Enables real-time data capture of inventory processing and volunteer activity - providing the food bank with detailed data
- Data-driven decision support systems to enable volunteers to be more effective in processing and sorting donated items
- Dashboard embedded with visualizations, data analytics, forecasting, and detailed reporting activities allows management to gain visibility and control
- Volunteer training efficiencies - built-in orientation material
- Scalable - each new volunteer/employee just needs to download the app and register

Cons:

- High up-front costs and extended timelines to develop and implement
- Increased training time and training requirements
- Requires increase in tech staff or outsourcing - need to upgrade infrastructure
- Higher expectation and a more structured approach may receive pushback from staff/volunteers

Mobile App Scanner + Dynamic Web Portal

The following storyboard shows how the dynamic inventory management system can be used to improve the day-to-day operations of the food bank by resolving their inventory management issues through the use of real-time data



WireFrames - Web Portal

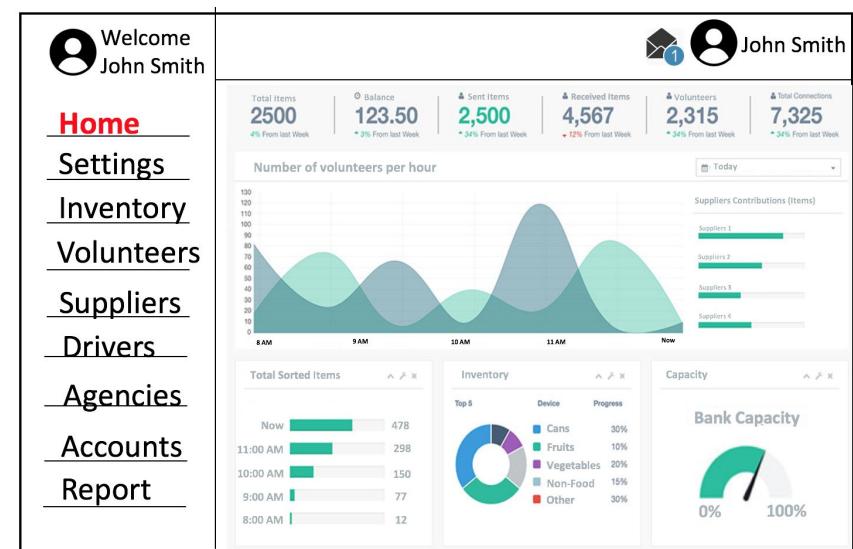
Login page and home dashboard

Second Harvest Food Bank – Charlotte
Dashboard Login

Username:

Password:

[Forgot your password?](#)



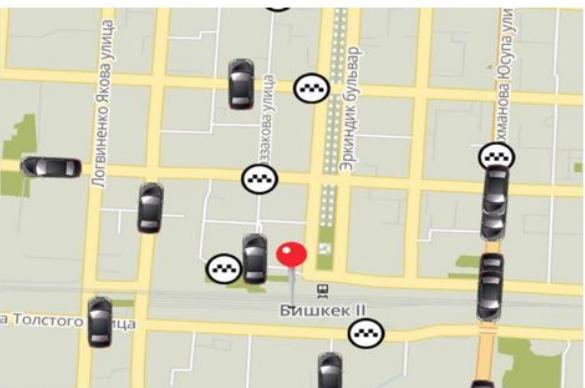
WireFrames - Web Portal

Driver tracking and route management functionality

Welcome John Smith

Home Settings Inventory Volunteers Suppliers Drivers Agencies Accounts Report

Edit Drivers information **Drivers Tracking**



A map of Bishkek II showing several driver locations marked with icons. One location is highlighted with a red dot.

Welcome John Smith

Home Settings Inventory Volunteers Suppliers **Drivers** Agencies Accounts Report

Edit Drivers information **Drivers Tracking**

	DName	DL#	Phone#	email	Vehicle	Plate#	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

Add New Driver

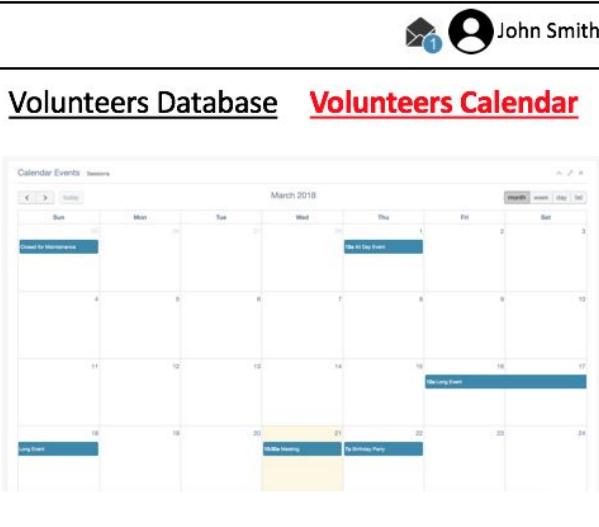
WireFrames - Web Portal

Volunteer management and report generation functionality

Welcome
John Smith

[Home](#)
[Settings](#)
[Inventory](#)
[Volunteers](#)
[Suppliers](#)
[Drivers](#)
[Agencies](#)
[Accounts](#)
[Report](#)

Volunteers Database **Volunteers Calendar**



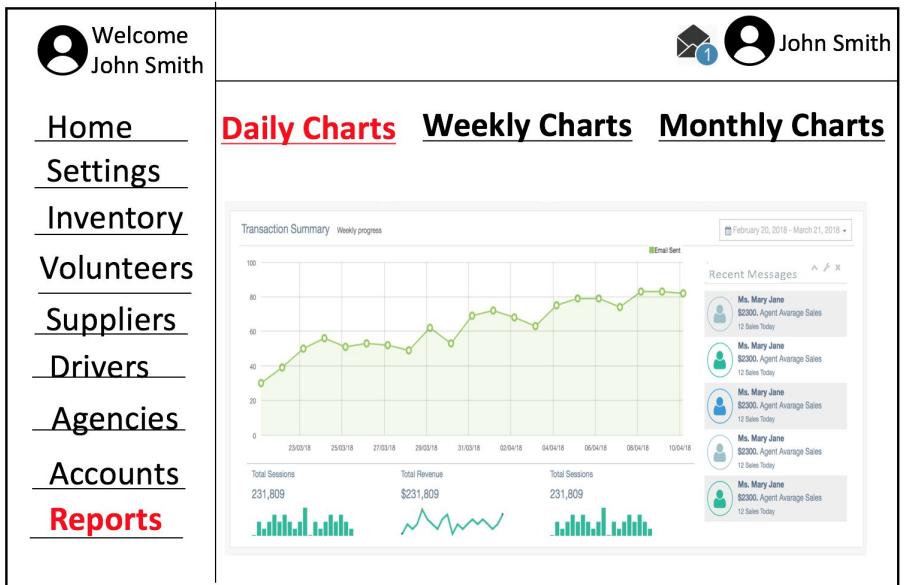
This wireframe shows two main sections. On the left is a "Volunteers Database" section with a table header and several rows of data. On the right is a "Volunteers Calendar" section for March 2018, showing events like "Closed for Maintenance", "All Day Event", "One Day Event", "Two Day Event", and "Long Event".

Welcome
John Smith

[Home](#)
[Settings](#)
[Inventory](#)
[Volunteers](#)
[Suppliers](#)
[Drivers](#)
[Agencies](#)
[Accounts](#)
[Reports](#)

John Smith

Daily Charts **Weekly Charts** **Monthly Charts**



This wireframe displays a dashboard for report generation. It features a "Transaction Summary" chart showing weekly progress from February 20, 2018, to March 21, 2018. Below the chart are three bar charts for "Total Sessions", "Total Revenue", and "Total Sessions". To the right, there is a sidebar for "Recent Messages" showing five entries for "Ms. Mary Jane" with details like "\$2300. Agent Average Sales" and "12 Sales Today".

WireFrames - Web Portal

Detailed inventory view and Suppliers management functionality

Welcome John Smith

[Home](#)

[Settings](#)

[**Inventory**](#)

[Volunteers](#)

[Suppliers](#)

[Drivers](#)

[Agencies](#)

[Accounts](#)

[Report](#)

  John Smith

[Received](#) [Sent](#) [**Current Inv.**](#)

	Item	barcode	quantity	Last received	suppliers			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Welcome John Smith

[Home](#)

[Settings](#)

[Inventory](#)

[Volunteers](#)

[**Suppliers**](#)

[Agencies](#)

[Accounts](#)

[Report](#)

  John Smith

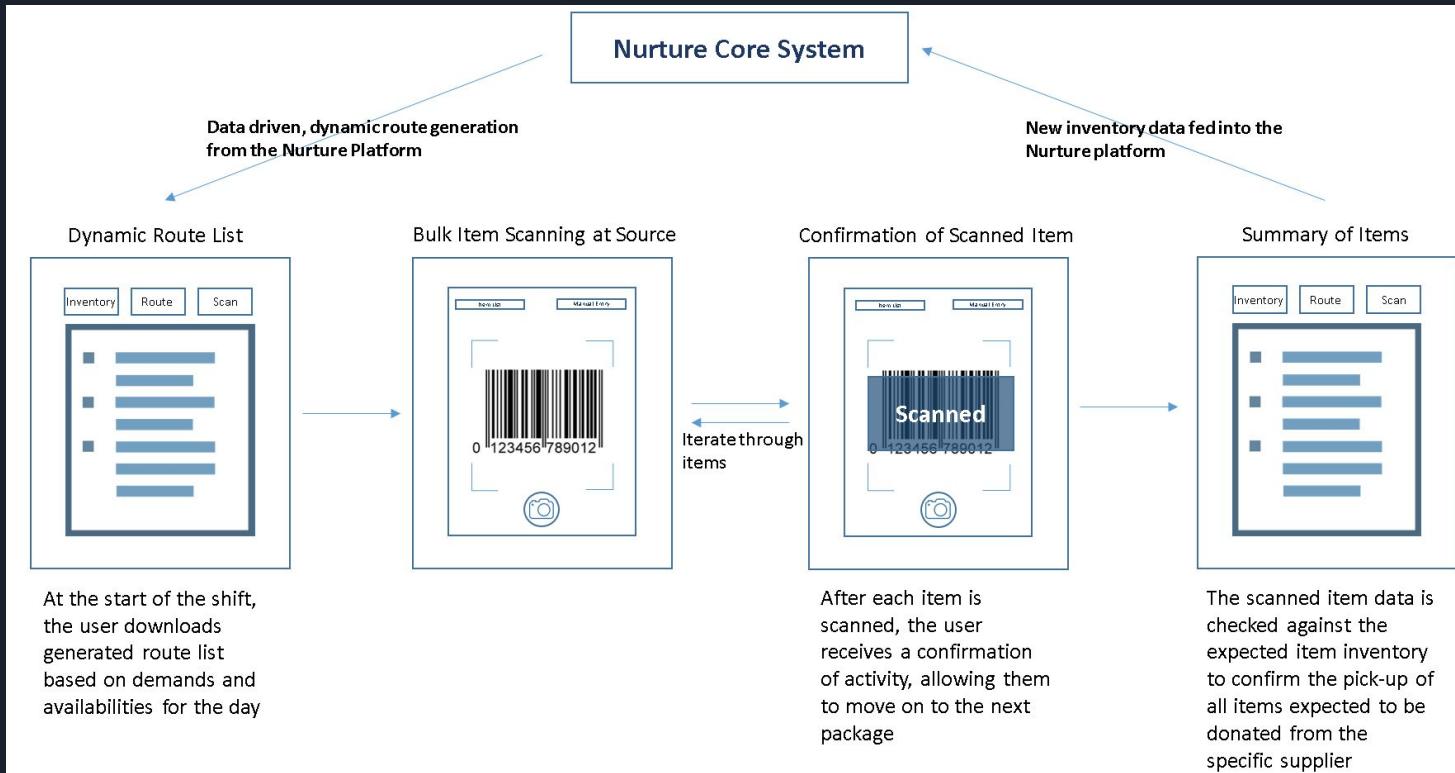
Edit Suppliers information

	SName	Address	Contact	email	Phone	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						

[Add New Supplier](#)

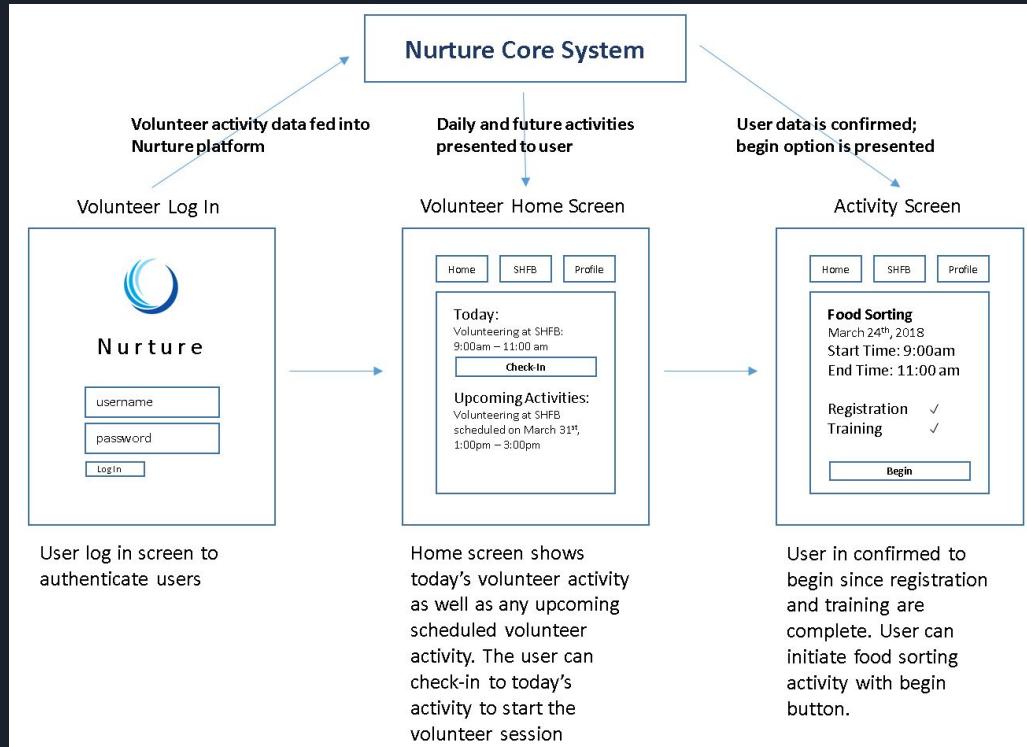
WireFrames and Action Sequence - App

Driver: Route List and Scanning items at the supplier



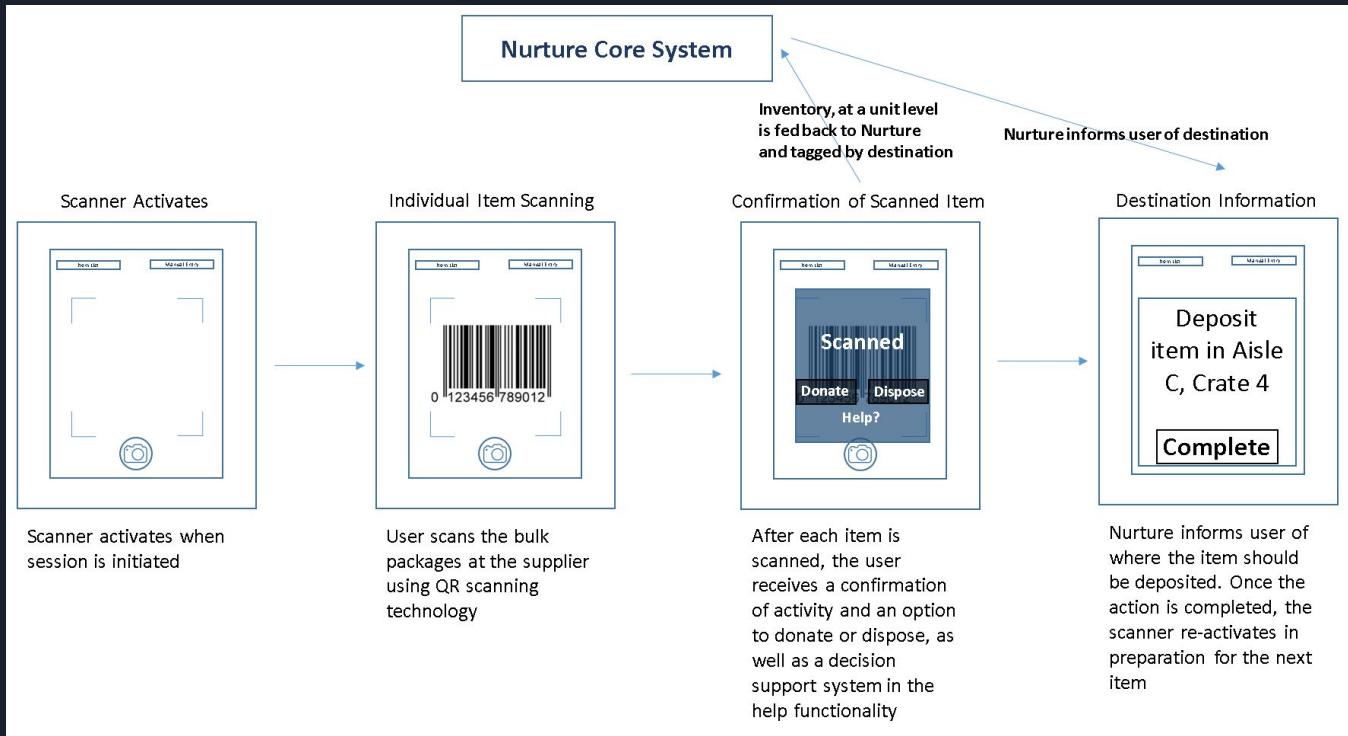
WireFrames and Action Sequence - App

Volunteer: Login prior to volunteering session, check-in to session, and summary activity screen



WireFrames and Action Sequence - App

Volunteer: Scanning and sorting activities, and decision support functionality





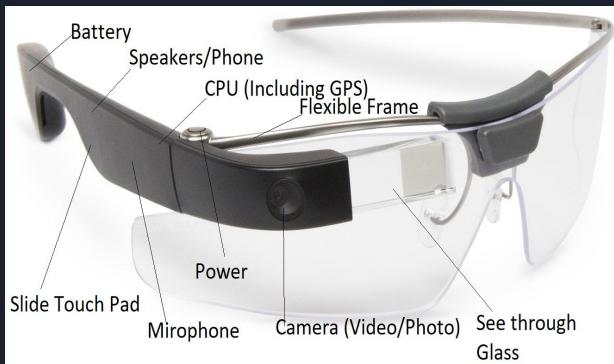
Design Concept 3 - *Interactive*

Wearable Image Recognition (Google Glass)
&
Fully Interactive Smart Board

Wearable and Interactive Smart Board End to End Process

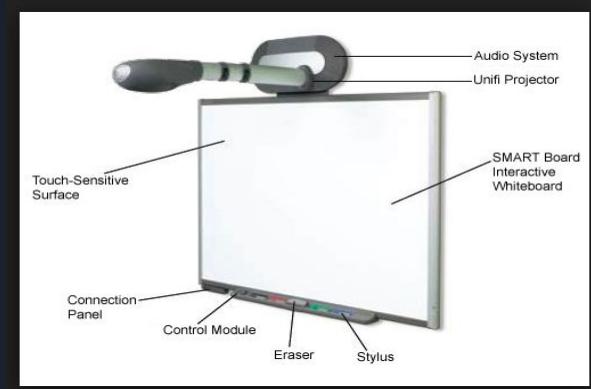
Data Collection

Driver/Volunteer



Data Utilization

Management



Inventory Scanning with Smart Glasses:

- User looks directly at food item and touches side of glasses to scan it
- Consistent with Android features
- Provides a way to capture data without carrying a handheld device

Nurture Web Server

Inventory data is fed into Nurture's web server as a centralized data repository, and then sent to downstream functionalities

Interactive Smart Board:

- Interactive dashboard for food bank business analysis and intelligence
- Data driven management reporting
- Touch/Voice Modalities



Wearable and Interactive Smart Board

Wearable Scanner Features:

- Wearable (smart glasses with Nurture app) to scan inventory
- Interactive / augmented reality to scan / measure / sort items.
- Image recognition to limit the manual entry of details
- Automatically saves and transmit data to server for downstream reporting
- Large icons / simplified screen for users

Interactive Smart Board Features:

- Active Smart board used by management for business operations and analysis
- Projector enabled Active board for immersive and interactive visual information display
- Multimodal - voice, touch, type, gestures for user commands
- Facilitates effective collaboration and planning leveraging multi user functionality
- Designed with feature distinction and instinctive organization / mappings
- Immersive Visual design to increase focus and attention
- Generates interactive reports for real-time analysis
- Can be mounted in the manager's office, conference rooms, or warehouse



Wearable and Interactive Smart Board

Pros:

- Hands free (glass) technology to scan inventory
- Voice recognition (board) for data visualization
- Customizable views of data
- Easy learning for Visual and Tactile users with large icons / basic screen for users.
- Facilitates integrated Hand-Eye coordination
- Streamlined collaboration aided by Multi Touch in Active Board
- Integrated platform for all devices enforces data consistency
- Auto fills much of details for all users to enter little necessary details
- Convenient - portable and wearable technology
- Leverages existing Android application features for user familiarity

Wearable and Interactive Smart Board

Cons:

- Risks of distraction in factory environment
- Can only operate when stationary - not while driving or walking.
- Can be uncomfortable / hard to adapt to
- Easy to lose/break
- Significant training required
- Initial deployment and maintenance / support / upgrades are time consuming and costly
- Known privacy and social issues the user will be exposed to: such as knowing more about a something without knowledge of another person knowing that you know
- Wearable inventory cost: \$105,468
 - 12 Truck Driver + 120 Daily Volunteer
 - Basic feature Google Glass cost: \$799 lowest



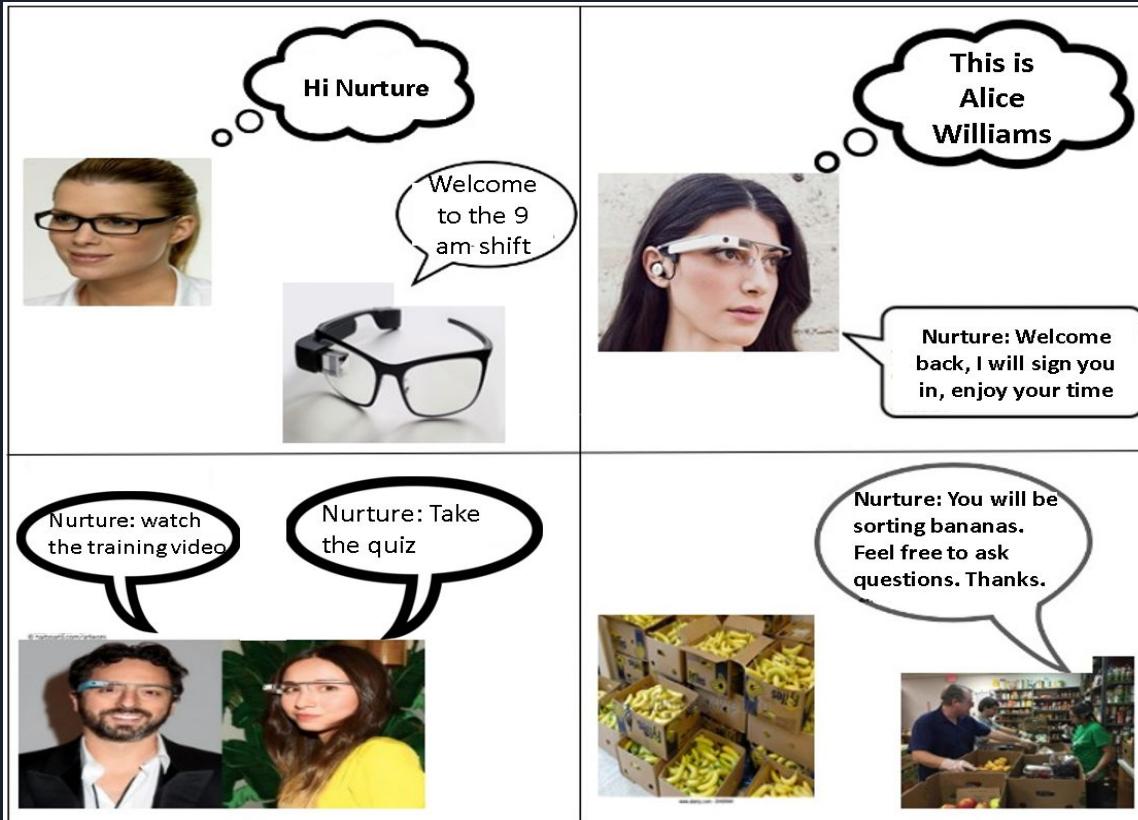
Storyboard - Truck Driver

Interaction between Truck Driver and Google Glass with Nurture



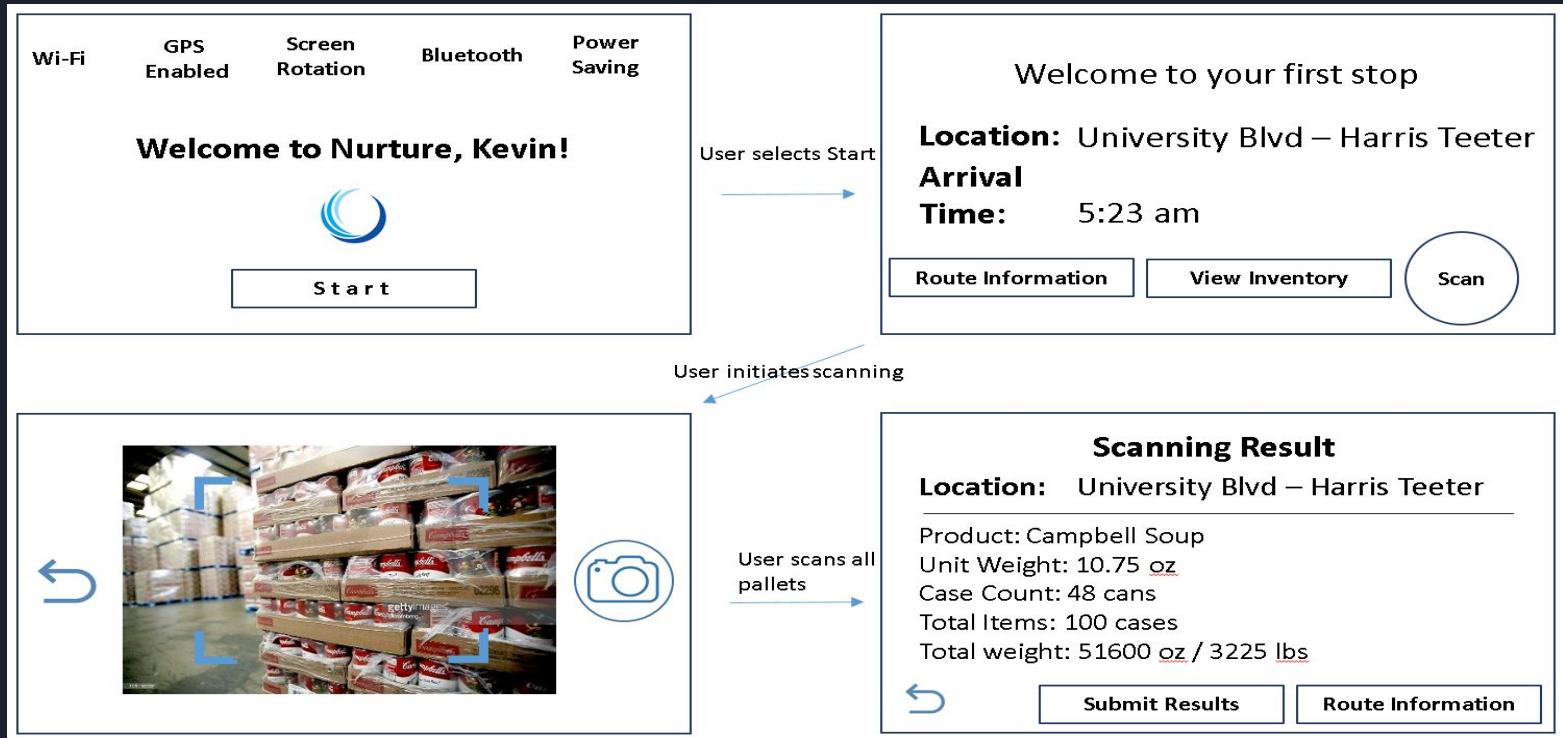
Storyboard - Volunteer

Interaction between Volunteer and the Smart Glasses with Nurture.



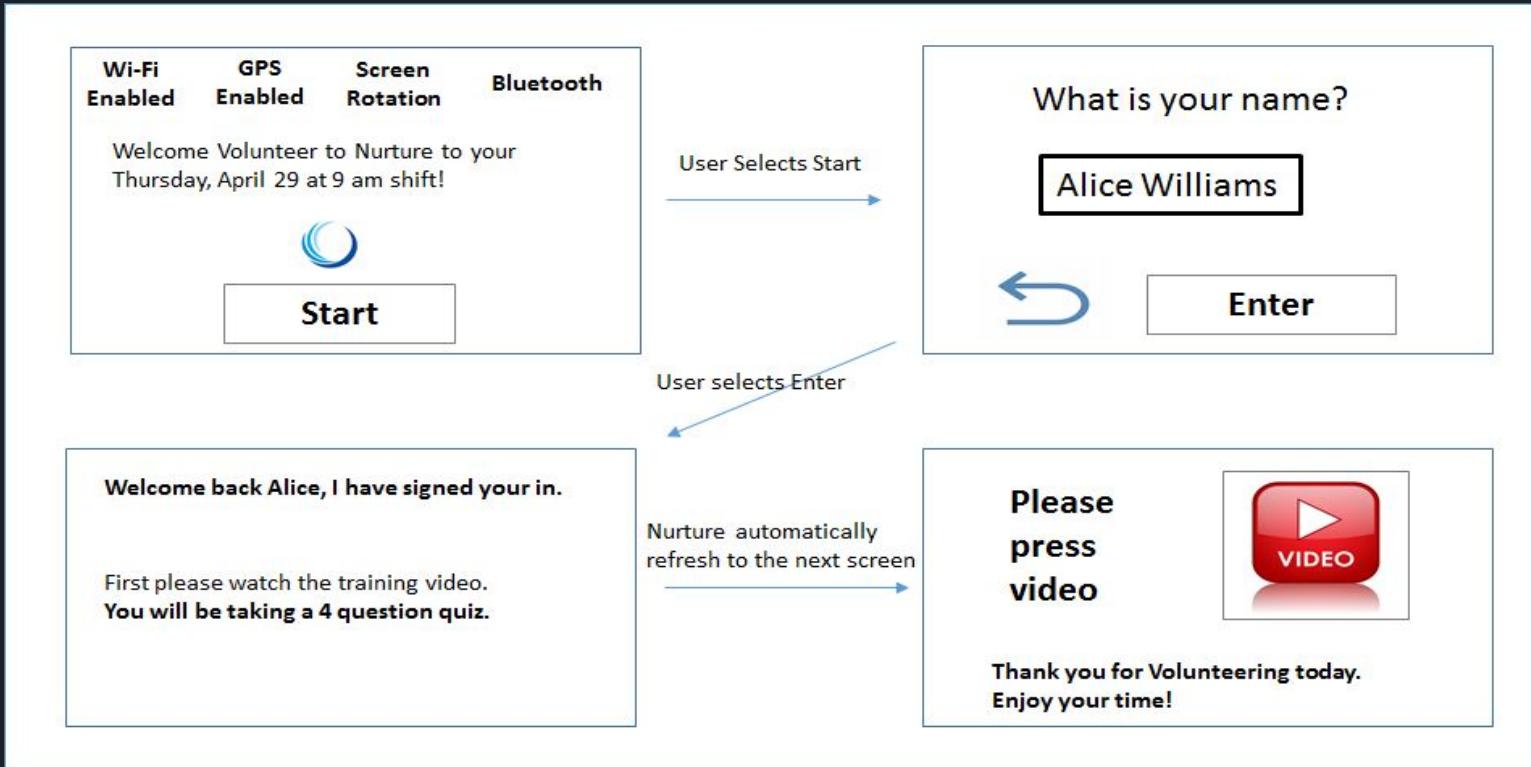
WireFrames and Action Sequence - Truck Driver Wearable

The following sequence shows how Smart Glass Nurture will guide the Truck Driver to scan inventory at the first stop



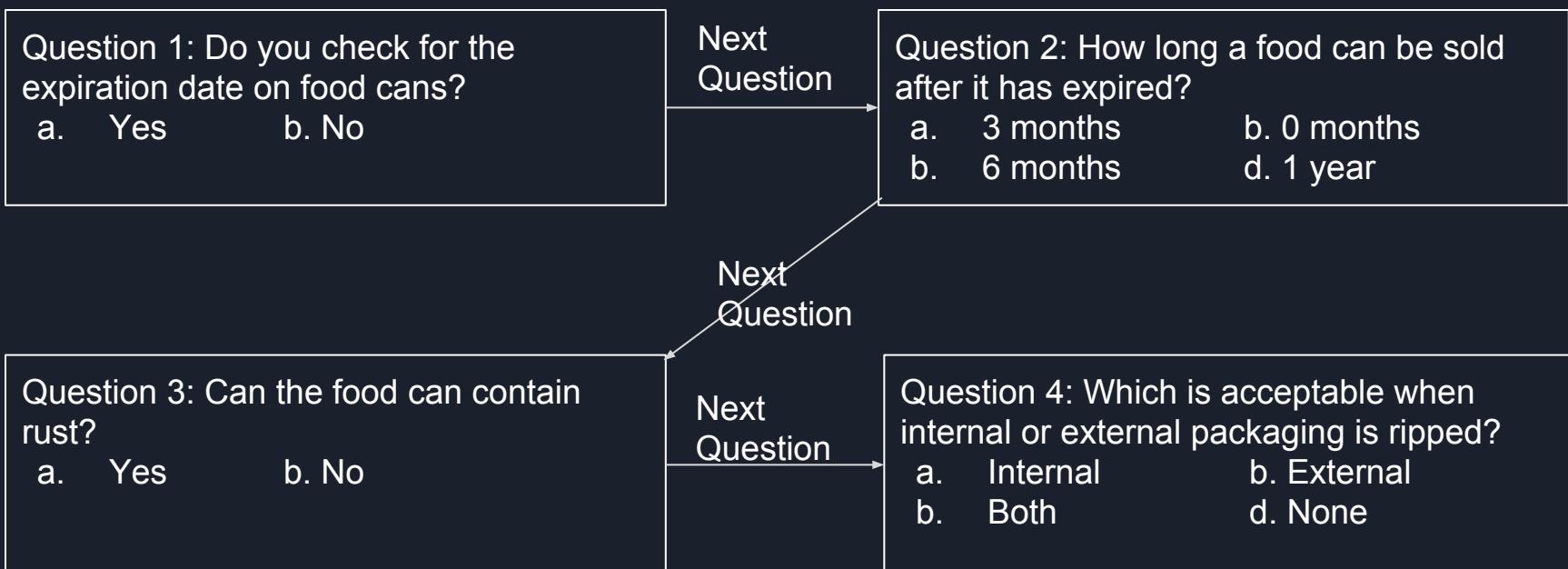
WireFrames - Volunteer Wearable

The following sequence shows how Smart Glass Nurture will guide the Volunteer to through sign in and training.



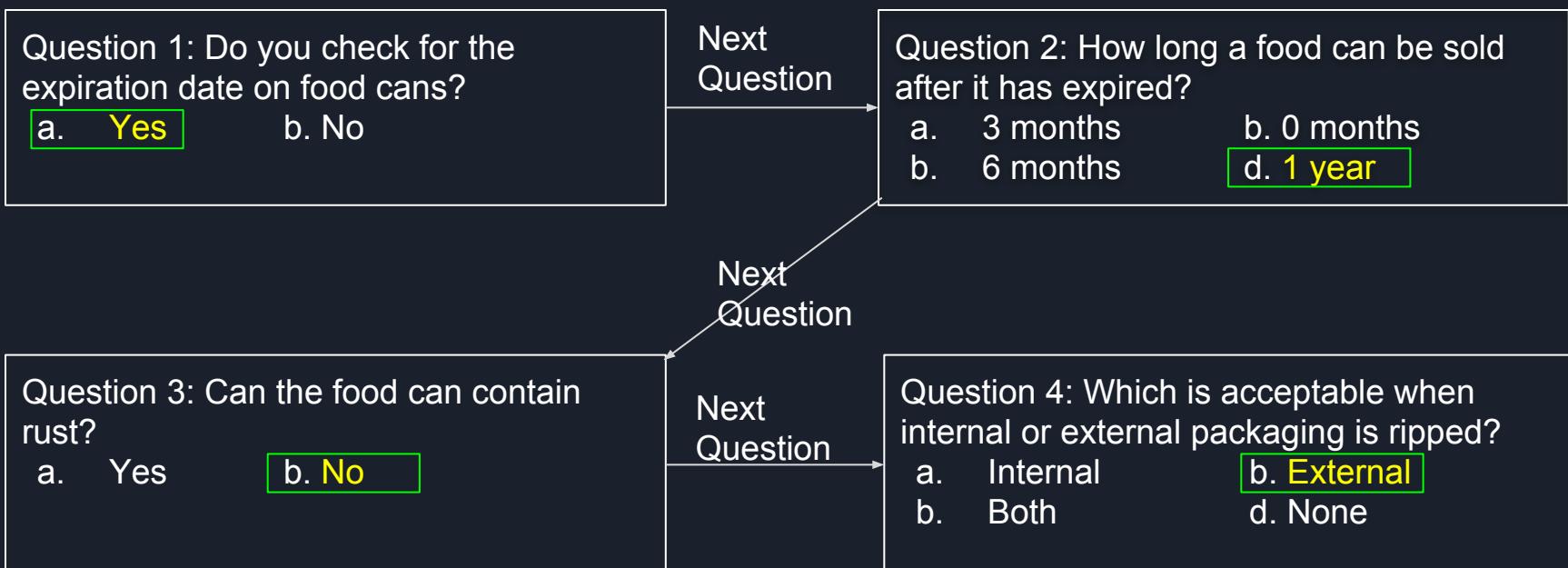
WireFrames and Action Sequence - Volunteer Nurture Quiz

The following sequence shows how Nurture can administer the training quiz questions as a pop-up box within the user's view on the glasses



WireFrames and Action Sequence - Volunteer Nurture Quiz

The following sequence shows how Nurture can then highlight the right answers through the use of color after each question is answered (yellow)



WireFrames (Active Board)

The Active Board wire frames below show the login and interactive home page functionality

The image displays two wireframe prototypes for an Active Board application. On the left is the 'User Login Page', featuring a header with a grey and white button bar, the text 'Second Harvest Food Bank - Charlotte', and 'Active Board Login'. Below this are fields for 'User Name' (containing 'John Smith') and 'Password' (containing 'Password'), followed by a 'Forgot Password' link and a 'Login' button. On the right is the 'User Landing Page in Active Smart Board', which includes a header with a grey and white button bar, the text 'Welcome John Smith', and a user profile icon. The main area contains a sidebar with links for 'INVENTORY', 'VOLUNTEERS', 'SUPPLIERS', 'DRIVERS', and 'AGENCIES'. The central content area features a dashboard with a 'Network Activities' chart showing data over time, a 'Top Campaign Performance' section with green bars, and a 'Quick Settings' panel with various status indicators and a 'Profile Completion' gauge at 80%. At the bottom are buttons for 'Add Notes', 'Settings', 'Multi-User Mode', 'Print', 'Email', and 'Reports', along with a 'Keyboard' icon.

User Login Page:

User Landing Page in Active Smart Board

WireFrames (Active Board)

The Active Board wire frames below show the driver tracking and management functionalities

This wireframe shows the 'DRIVERS' section of the Active Smart Board. At the top right, there's a user profile icon with 'Welcome John Smith'. On the left, a sidebar lists 'John Smith' (Inbox: 12, Account, Logout), 'INVENTORY', 'VOLUNTEERS', 'SUPPLIERS', and 'DRIVERS' (highlighted in blue). Below the sidebar is a map of a city street with several vehicle icons. One vehicle icon has a red dot on it. To the right of the map is a table with columns: DName, DL#, Phone#, email, Vehicle, Plate#. At the bottom are buttons for 'Add Notes', 'Settings', 'Multi-User Mode', 'Print', 'Email', 'Reports', and a 'Keyboard' icon.

This wireframe shows the 'DRIVERS' section of the Active Smart Board. It features a table with 8 rows of driver data, each with columns for DName, DL#, Phone#, email, Vehicle, and Plate#. The 8th row is currently selected. A modal dialog titled 'EDIT INFO' is open over the table, containing fields for 'DL#', 'Phone#', 'email', 'Vehicle', and 'Plate#'. The 'EDIT INFO' button is highlighted in blue. The sidebar on the left is identical to the first wireframe. At the bottom are buttons for 'Add Notes', 'Settings', 'Multi-User Mode', 'Print', 'Email', 'Reports', and a 'Keyboard' icon.

Driver Information Page in Active Smart Board

Driver Information Page in Active Smart Board

WireFrames (Active Board)

The Active Board wire frames below show the volunteer and inventory management features

This wireframe shows the Volunteer Information Page in Active Smart Board. At the top right, there's a 'Welcome John Smith' header with a user icon. On the far left, a vertical sidebar displays the user profile (John Smith, Inbox: 12, Account, Logout) and navigation links for INVENTORY, VOLUNTEERS (highlighted in blue), SUPPLIERS, DRIVERS, and AGENCIES. Below the sidebar is a large calendar grid for March 2018. A modal window titled 'CALENDAR X' is open over the calendar, containing a smaller calendar view for the same month. At the bottom of the page are buttons for Add Notes, Settings, Multi-User Mode, Print, Email, Reports, and a Keyboard icon.

This wireframe shows the Volunteer Information Page in Active Smart Board. It features a similar top header and sidebar as the first wireframe. The main content area includes a transaction summary chart titled 'Transaction Summary - Weekly Income' showing a green line graph from February 2018 to March 2018. To the right of the chart are three small bar charts labeled 'Total Income', 'Total Revenue', and 'Total Expenses'. On the far right, there's a sidebar with a 'DAILY' button (which is checked), 'WEEKLY', and 'MONTHLY' buttons. At the bottom are the same set of action buttons as the first wireframe: Add Notes, Settings, Multi-User Mode, Print, Email, Reports, and a Keyboard icon.

Volunteer Information Page in Active Smart Board

Volunteer Information Page in Active Smart Board

WireFrames (Active Board)

The Active Board wire frames below show the inventory and supplier functionality

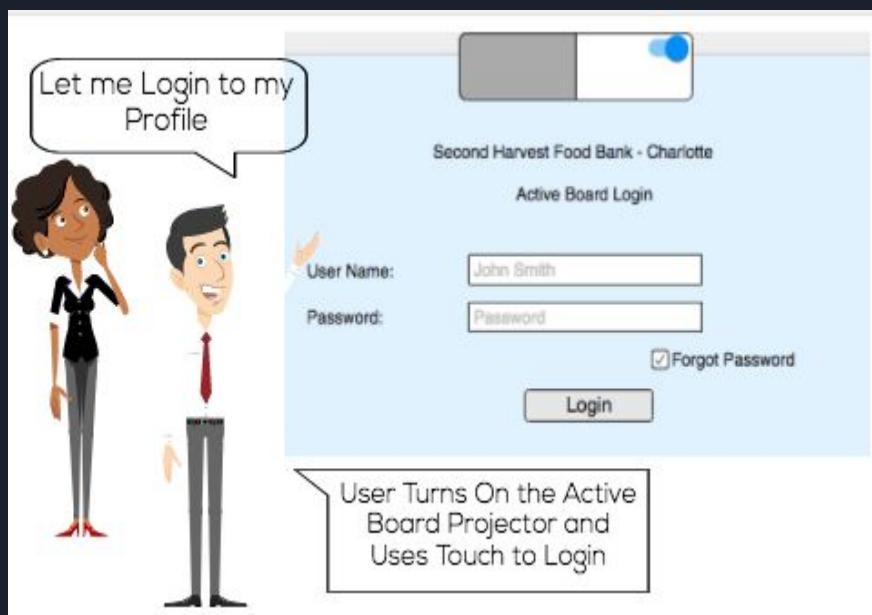
This wireframe shows the 'INVENTORY' section of the Active Smart Board. The top navigation bar includes a user profile for 'John Smith', an 'Inbox: 12' notification, and a 'Logout' link. Below the navigation is a table with columns for ID, SName, Address, Contact, email, and Phone. The table has 10 rows of placeholder data. On the left, a sidebar lists categories: INVENTORY (selected), RECEIVED, SENT, VOLUNTEERS, SUPPLIERS, DRIVERS, and AGENCIES. At the bottom are buttons for Add Notes, Settings, Multi-User Mode, Print, Email, Reports, and a Keyboard icon.

Inventory Information Page in Active Smart Board

This wireframe shows the 'SUPPLIERS' section of the Active Smart Board. The top navigation bar includes a user profile for 'John Smith', an 'Inbox: 12' notification, and a 'Logout' link. Below the navigation is a table with columns for ID, SName, Address, Contact, email, and Phone. The table has 10 rows of placeholder data. On the left, a sidebar lists categories: INVENTORY, VOLUNTEERS, SUPPLIERS (selected), ADD, DRIVERS, and AGENCIES. At the bottom are buttons for Add Notes, Settings, Multi-User Mode, Print, Email, Reports, and a Keyboard icon.

Suppliers Information Page in Active Smart Board

StoryBoard: Interactive Board



StoryBoard: Interactive Board

Let me pull up the Inventory data and Locate an item

John Smith
User 12
Account
Logout

Welcome John Smith

INVENTORY CURRENT

	Item	Min Qty	Max Qty	Unit	Price
1	Item 1	10	20	each	\$10.00
2	Item 2	10	20	each	\$10.00
3	Item 3	10	20	each	\$10.00
4	Item 4	10	20	each	\$10.00
5	Item 5	10	20	each	\$10.00
6	Item 6	10	20	each	\$10.00
7	Item 7	10	20	each	\$10.00
8	Item 8	10	20	each	\$10.00
9	Item 9	10	20	each	\$10.00
10	Item 10	10	20	each	\$10.00
11	Item 11	10	20	each	\$10.00
12	Item 12	10	20	each	\$10.00
13	Item 13	10	20	each	\$10.00
14	Item 14	10	20	each	\$10.00
15	Item 15	10	20	each	\$10.00
16	Item 16	10	20	each	\$10.00
17	Item 17	10	20	each	\$10.00
18	Item 18	10	20	each	\$10.00
19	Item 19	10	20	each	\$10.00
20	Item 20	10	20	each	\$10.00
21	Item 21	10	20	each	\$10.00
22	Item 22	10	20	each	\$10.00
23	Item 23	10	20	each	\$10.00
24	Item 24	10	20	each	\$10.00
25	Item 25	10	20	each	\$10.00
26	Item 26	10	20	each	\$10.00
27	Item 27	10	20	each	\$10.00
28	Item 28	10	20	each	\$10.00
29	Item 29	10	20	each	\$10.00
30	Item 30	10	20	each	\$10.00
31	Item 31	10	20	each	\$10.00
32	Item 32	10	20	each	\$10.00
33	Item 33	10	20	each	\$10.00
34	Item 34	10	20	each	\$10.00
35	Item 35	10	20	each	\$10.00
36	Item 36	10	20	each	\$10.00
37	Item 37	10	20	each	\$10.00
38	Item 38	10	20	each	\$10.00
39	Item 39	10	20	each	\$10.00
40	Item 40	10	20	each	\$10.00
41	Item 41	10	20	each	\$10.00
42	Item 42	10	20	each	\$10.00
43	Item 43	10	20	each	\$10.00
44	Item 44	10	20	each	\$10.00
45	Item 45	10	20	each	\$10.00
46	Item 46	10	20	each	\$10.00
47	Item 47	10	20	each	\$10.00
48	Item 48	10	20	each	\$10.00
49	Item 49	10	20	each	\$10.00
50	Item 50	10	20	each	\$10.00
51	Item 51	10	20	each	\$10.00
52	Item 52	10	20	each	\$10.00
53	Item 53	10	20	each	\$10.00
54	Item 54	10	20	each	\$10.00
55	Item 55	10	20	each	\$10.00
56	Item 56	10	20	each	\$10.00
57	Item 57	10	20	each	\$10.00
58	Item 58	10	20	each	\$10.00
59	Item 59	10	20	each	\$10.00
60	Item 60	10	20	each	\$10.00
61	Item 61	10	20	each	\$10.00
62	Item 62	10	20	each	\$10.00
63	Item 63	10	20	each	\$10.00
64	Item 64	10	20	each	\$10.00
65	Item 65	10	20	each	\$10.00
66	Item 66	10	20	each	\$10.00
67	Item 67	10	20	each	\$10.00
68	Item 68	10	20	each	\$10.00
69	Item 69	10	20	each	\$10.00
70	Item 70	10	20	each	\$10.00
71	Item 71	10	20	each	\$10.00
72	Item 72	10	20	each	\$10.00
73	Item 73	10	20	each	\$10.00
74	Item 74	10	20	each	\$10.00
75	Item 75	10	20	each	\$10.00
76	Item 76	10	20	each	\$10.00
77	Item 77	10	20	each	\$10.00
78	Item 78	10	20	each	\$10.00
79	Item 79	10	20	each	\$10.00
80	Item 80	10	20	each	\$10.00
81	Item 81	10	20	each	\$10.00
82	Item 82	10	20	each	\$10.00
83	Item 83	10	20	each	\$10.00
84	Item 84	10	20	each	\$10.00
85	Item 85	10	20	each	\$10.00
86	Item 86	10	20	each	\$10.00
87	Item 87	10	20	each	\$10.00
88	Item 88	10	20	each	\$10.00
89	Item 89	10	20	each	\$10.00
90	Item 90	10	20	each	\$10.00
91	Item 91	10	20	each	\$10.00
92	Item 92	10	20	each	\$10.00
93	Item 93	10	20	each	\$10.00
94	Item 94	10	20	each	\$10.00
95	Item 95	10	20	each	\$10.00
96	Item 96	10	20	each	\$10.00
97	Item 97	10	20	each	\$10.00
98	Item 98	10	20	each	\$10.00
99	Item 99	10	20	each	\$10.00
100	Item 100	10	20	each	\$10.00

RECEIVED

SENT

SUPPLIERS

DRIVERS

AGENCIES

Add Notes Settings Multi-User Mode Print Email Reports

I must arrange for a pick-up for these items. I will check Driver status info



User Touches on the Active Board to Click on Drivers tab and then selects the Track tab

StoryBoard: Interactive Board

I will look in to Supplier information and coordinate with Volunteers to sort items.

User Touches on the Active Board to Click on Suppliers menu and selects Info tab

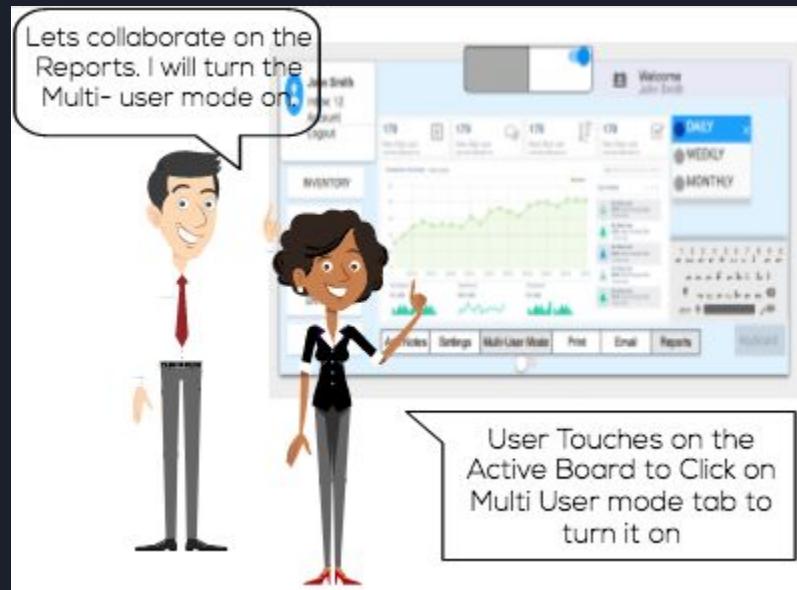
The screenshot shows a software interface with a navigation bar at the top. Below it is a table with columns: Name, Address, Contact, Email, Phone. The table has several rows of data. At the bottom of the screen are buttons for Add Note, Settings, Multi-User Mode, Print, Email, and Reports.

I will seek help from a couple of Volunteers. Let me check who all are available to help.

User Touches on the Active Board to Click on Volunteers tab and then selects the Calendar tab

The screenshot shows a software interface with a navigation bar at the top. Below it are tabs for INVENTORY, VOLUNTEERS (which is selected), SUPPLIERS, DRIVERS, and AGENCIES. The main area displays a calendar with various events and tasks. Buttons at the bottom include Add Notes, Settings, Multi-User Mode, Print, Email, and Reports.

StoryBoard: Interactive Board





Design Evaluation and Concept Selection



Evaluation of Alternative Designs - Methodology

Each conceptual design was evaluated against the defined Usability Goals and Design Goals.

The evaluation utilizes a three tier scoring system:

Rating	Definition	Value
High	Closely aligns with Goal	3
Medium	Aligns with Goal	2
Low	Does not align with Goal	1

Quantitative scores for each conceptual design are calculated and used to select the best design.

Evaluation of Alternative Concepts - Usability

The following evaluation was performed against the defined Usability Goals - Concept 2 evaluates to the highest final score:

Usability Goals	Concept 1 - Static	Concept 2 - Dynamic	Concept 3 - Interactive
Easy to Use	High	Medium	Low
Error Tolerant	Medium	High	Low
Easy to Learn	High	High	Medium
Safe to Use	High	High	Medium
Effective	Medium	High	High
Efficient	Low	High	High
Score	14	17	12

Evaluation of Alternative Concepts - Design

The following evaluation was performed against the defined Design Goals - final score calculated based on ratings.

Design Goals	Concept 1 - Static	Concept 2 - Dynamic	Concept 3 - Interactive
Quick/Easy Scanning of Inventory	Medium	High	Medium
Automate/Streamline Food Bank Processes	Medium	High	High
Accurate/Detailed Data	Medium	High	Medium
Increased/Enhanced Collaboration	Low	High	High
Visibility/Control to Food Bank Management	Medium	High	High
Score	9	15	13



Selected Design Concept

Selected Design:

Design Concept 2: Mobile App Scanner + Dynamic Inventory Management System

Design Concept 2 had the highest overall score in both design and usability evaluations, and is best aligned to meet the needs of the food bank, given their environmental and functional constraints. The Mobile App Scanner + Dynamic Inventory Management System is able to quickly and significantly improve the Food Bank's operation by providing the following functionalities in a simple end-to-end solution:

- Detailed Inventory Management
- Volunteer and Driver Management
- Decision Support System for Food Sorting
- Streamlines Existing Processes
- Extensive Report Generation Capabilities
- Easy to Learn/Easy to Use
- Collaboration and Visibility



Sources

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