nourish

Blue Ridge Area Food Bank
User Research Document
April 2018

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Project Goals

1. Develop an evidence-based approach to search, select, and rank food items based on a total nutrition profile.
2. Develop a visual interface that allows Food Banks to link ranked food items with internal inventory management systems (i.e. Ceres)
3. Utilize data visualization techniques to track, analyze, and report Food Bank inventory to help inform decisions based on nutritional value
4. Establish a framework that allows the system to be implemented and managed across a national network of food banks

Design Question

How might we improve a Food Bank's ability to provide nourishing food and make informed purchasing decisions?

Research Questions

1. Describe your experience with your current inventory database.
    i. How often do you use it? Is it daily, weekly or monthly?
    ii. Where do you use it? Is it on a computer or a mobile device?
    iii. How do you currently locate and identify items in your inventory?
    iv. Do you currently enter or maintain nutrition information for these items?
    v. How many new items do you enter at any given time?
    vi. What do you like about your current system?
    vii. What issues do you run into?
    viii. What would improve your experience?
2. What is the biggest barrier you face with the current inventory system?
3. Would you be open to a new system that allows you to search, compare, and import items into your current inventory database?
4. If this new system provided nutrition information with a rating system, would you consider this useful for determining whether an item is worth including in your inventory?
5. Are there additional features that would be helpful for determining whether a food is worthy of purchasing?
6. Would food categories make it easier to locate specific foods in combination with a basic search-based system? If so, what kind of categories would be helpful?
7. Based on the description of this new system, who should have access to the new system?
    i. Will there need to be security features built in to limit access?
    ii. If so, what features should be private and which should be public?
    iii. How customizable would you like the system to be for each user?
8. How will you measure success with the new system?
    i. Are there competitors for this system to surpass?

Analysis

Charitable Food Assistance Programs, organized through the network of Feeding America's 60,000 partner agencies and 200 Food Banks, provide 4 billion meals each year to food insecure Americans. With such a profound impact on the dietary intake of our nation's children, adults, and seniors, sourcing foods of high nutritional quality has become a priority.

The mission of the Blue Ridge Area Food Bank (BRAFB) is "to provide nourishing food to our neighbors in need through vibrant community partnerships and passionate public support." A collaborative discussion took place between the BRAFB and James Madison University (JMU) to decide how best to assess and quantify the nutritional quality of foods using USDA datasets while also complying with organizational policies and procedures. Faculty experts from disciplines in health sciences participated in a pilot study to select parameters with appropriate food categories to establish baseline data for the nutritional quality. Dialogue among a broader range of faculty, including the School of Media Arts and Design (SMAD) and Computer Information Systems (CIS), provided concepts for an evidence-based, Nutrient Rich Food Index (NRFI) scoring system to help categorize, track the nutritional quality, and inform purchases of food items over time.

This Community-University partnership gave rise to the development of a web-based solution focused on goal-oriented design, which values streamlined and data driven user experience; an easy-to-use interface for everyone from a public user to food bank employees, analysts, and administrators. The system allows users to find nutrition information on food items to compare and contrast their values. The data source for the new system includes connections between the USDA's food cataloging system, which allows easier access to food nutrition information. Additionally, the visual presentation is consistent with the U.S. Food & Drug Nutrition Facts Label, which is an established design pattern. Advanced functionality, must include the ability to analyze and track the nutritional quality of bulk food inventories through data visualization to inform purchasing decisions and guide adjustments for organizational procedures and policies. Long-term, this system will not only provide value to help the BRAFB bring healthier foods to Virginia communities, but also allow nationwide access through the help of Feeding America. The system is designed both to help the general public and to be transferable to Food Banks across the nation.

Nourish, the current system prototype, is the product of a highly collaborative project involving faculty and students from 3 different colleges within JMU. A primary outcome of this work includes research to meet the needs of the system's users. A key functionality of the Nourish system is the ability to search for food items and then assess and categorize their nutritional quality. Additional features allow observation and forecasting of food inventories with analytic reporting and data visualization.

Hypotheses

Nourish connects to the USDA nutrition database with search functions based on keyword entry, category selection, and barcode scanning. Our hypothesis is a primary search function will allow easier access to information. Improved, succinct navigation will allow the users to find nutrition information quickly and assess food items efficiently. Additional features will allow food bank employees to build relationships and analyze inventories to help make more informed purchasing decisions. We predict that Nourish will be useful to not only the BRAFB, but other food banks and pantries across the nation. If the system maintains a public user, we believe the NRFI score will allow transparency to provide greater impact and potentially help improve awareness of smarter choices for food pantries and everyday consumers.

User Research Strategies

Our user research consists of both competitive analysis and in-depth interviews. Comprehensive research was conducted regarding the current Ceres inventory system—including its strengths, weaknesses, and potential for revision. Additional research also examined how other food banks make their purchasing decisions. Consideration of who needs access to the system and what their individual goals are were included for research questions. Interviews were conducted online for primary user of the system, the food sourcing manager, as well as with a member of BRAFB's board and a concerned member of the public. We also gathered information from meetings with the client regarding their needs for system.

Takeaways

From our user research, we were able to identify five clear users that the system would serve: the food bank employee, the food bank analyst, the food bank administrator, a public user, and the system administrator.

1. The food bank employee would be the primary user of the system and would use it to make more informed purchasing decisions for the food bank. They would require it to have all the information they may need to best do their job, including features such as a search function and an inventory dashboard. The system would need to be responsive to the various devices they might use on the job, as well as intuitive to use.

2. The food bank analyst would be the secondary user of the system, using it to observe purchasing trends and determine whether the Food Bank needs to change their behavior to source healthier food. They would need it to be informative, as well as having clear data visualization tools to interpret purchasing data.

3. The food bank administrator would be responsible for adding, maintaining, and training users of the system (i.e. Food Bank employees). Their role would also consist of troubleshooting to keep the system fully functional and responsive.

4. The public user would also be able to also use this system in their everyday life. The typical user would be someone who would use the system to make healthier food purchasing decisions for themselves, their families, and their communities. The system needs to be intuitive to a user with little background knowledge, as well as mobile-friendly to be usable on the go.

5. Lastly, the system administrator having a system that was highly versatile and flexible so that they were able to make any needed changes and updates to keep up with changing USDA standards, FDA food nutrition label changes, as well as updates for the Nutrient Rich Index score algorithm. They would be in charge of system-wide updates and potentially bringing in new databases to the system.

Based on these takeaways, we were able to develop the five requirements of the system.

Design Requirements

1. The system must be easy to navigate with clear search functionality and the ability to filter results using broad categories
2. The system must give comprehensive nutrition information for every food through the use of existing nutrition label information (existing & proposed)
3. The system must integrate the nutritional index score with nutrition values, so the ranking of food items is a primary visual element for the user
4. The system must contain an inventory dashboard with data visualization of the food in stock based on their categories' nutritional values
5. The administrator must have the ability to edit the nutritional index scores and values, as well as make other changes to the system with ease

User Personas

“I want to buy the healthiest possible options for the food bank to best serve the community”

More Information on Danny

Technological skills

Amateur

Technological tools

Tablet (Apple iOS)

Internet use

Occasional

Usability Preferences

Intuitive
Efficient
Reliable

Danny Williams

Primary User (50% of audience)

Age: 45+

Gender: Male

Profession: Food Sourcing Manager

Education: High School Diploma

Summary

Danny has been working at a food bank for the past eight years and has been in charge of buying food from grocery stores and the USDA with money from donors. His job also involves managing the current stock and choosing what to send out to smaller food pantries to give to the hungry. He focuses on sourcing the healthiest and most nutritious food possible for the community. For the last eight years, he has been using an outdated system where he has to manually input every food item that comes through the food bank and then has to use the separate USDA catalog to find nutrition information to make food purchasing decisions.

Goals

Danny needs a new system to streamline his process of making decisions of what foods to buy. He hopes to have a system that connects to the USDA catalog so he can have a single place to find the nutrition information on different foods to compare and contrast them to make the most informed purchasing decisions. He needs a system that has all the information he needs to do his job available at his fingertips, whether it be on his laptop or a tablet. He wants to increase the quantity of foods with a high nutrition index at the food bank to best serve the community.

User Personas

Aadhya Bhatt

Secondary User (30% of audience)

Age: 30

Gender: Female

Profession: Systems Analyst

Education: Master's Degree

"I need a system that is flexible and easily edited to best meet USDA standards and our changing needs."

More Information on Aadhya

Technological skills

Expert

Technological tools

Desktop (Mac)

Internet use

Often

Usability Preferences

Versatile
Flexible
Dynamic

Summary

Aadhya has been working as the systems administrator at the food bank for the past five years. Her job consists of updating and maintaining all the systems that help the food bank run, including their current inventory system. She works pretty high up at the food bank, so she is responsible for decisions and changes that arise. Aadhya is passionate about improving the food bank in any way possible to best serve the community. Aadhya designed the current system the food bank uses to keep track of their inventory, but recognizes the need for an upgrade.

Goals

Aadhya is responsible for deciding if their current processes are best serving the population; the easiest way for her to do this is to utilize Tableau to run reports. From these chart breakdowns, Aadhya would like to be able to see how healthy the food bank's inventory is along with how to make it healthier. This will require extremely detailed reports with the opportunity to drill down to the specific food items triggering the healthy / unhealthy score.

User Personas

Alice Kim

Tertiary User (5% of audience)

Age: 25

Gender: Female

Profession: System Administrator

Education: Associate's Degree

"Trying to fix and maintain a faulty system is an absolute headache! We need a system that does its job and is easy for our employees to use and understand."

More Information on Alice

Technological skills

Advanced

Technological tools

Desktop (PC)

Internet use

Often

Usability Preferences

Flexible
Intuitive
Comprehensive

Summary

Alice has been working at the food bank for the past two years. Her job consists of managing the systems that help the food bank run, in terms of troubleshooting issues and training users on how to use the system. She's responsible for knowing all the ins and outs of the system and anticipating any technical problems and fixing them before they present issues to the day-to-day functioning of the food bank. However, she finds that the current system has far too many issues to solve on her own, as well as doesn't properly serve the needs of the employees in the state it's currently in. Training users has proven to be a difficult task due the current system not being user-friendly and intuitive to their needs and due to the fact that it cannot be tailored to each user.

Goals

Alice needs a new system that is easy to train new users on without much difficulty. She also needs a system that covers all the needs of the food bank without any holes or deficiencies. The system needs the ability to be tailored to each user, so the ability to create new user accounts is a must. She would be responsible for maintaining and adding such user accounts in her job. She also needs a system that doesn't already come with a multitude of issues on its own. The system needs to come already fully-functional, so her job can be focuses more on troubleshooting and less on doing a whole rehaul on it.

User Personas

Jake Mathers

Tertiary User (10% of audience)

Age: 33

Gender: Male

Profession: Stay-at-home dad

Education: Bachelor's Degree

"I want to cook healthier food for myself and my family, but don't know what foods are the best to buy"

More Information on Jake

Technological skills

Amateur

Technological tools

Mobile Phone (Android)

Internet use

Often

Usability Preferences

Intuitive
Informative
Fast

Summary

Jake is a father of two kids, along with having a husband and two dogs. His family is the utmost priority and he wants to ensure that they are always happy and healthy. He is a strong proponent of having nutritious, home-cooked meals every night, but he was raised on Spaghettios and frozen pizzas, so he has a lot to learn. He wants to make sure he's making the most informed buying decisions at the store as possible without too much hassle, but because he isn't an expert in healthy foods, he could use some help when he's at the store.

Goals

Jake would benefit from a website that he can visit on his phone in which he can input various food items to compare their nutrition values, as well as being able to quickly identify the healthiest foods. He would love to easily determine whether salted or unsalted green beans are the better choice as quickly as possible so he can get back to spending quality time with his family. He needs something that is intuitive, since he sometimes is slow to learn new apps and technologies.

User Personas

“I want to be part of a system that is improving the community ”

More Information on Henry

Technological skills

Expert

Technological tools

Desktop

Internet use

Often

Usability Preferences

Informative
Reliable
User-Friendly

Henry Alvarez

Tertiary User (5% of audience)

Age: 55

Gender: Male

Profession: Professor

Education: Doctorate

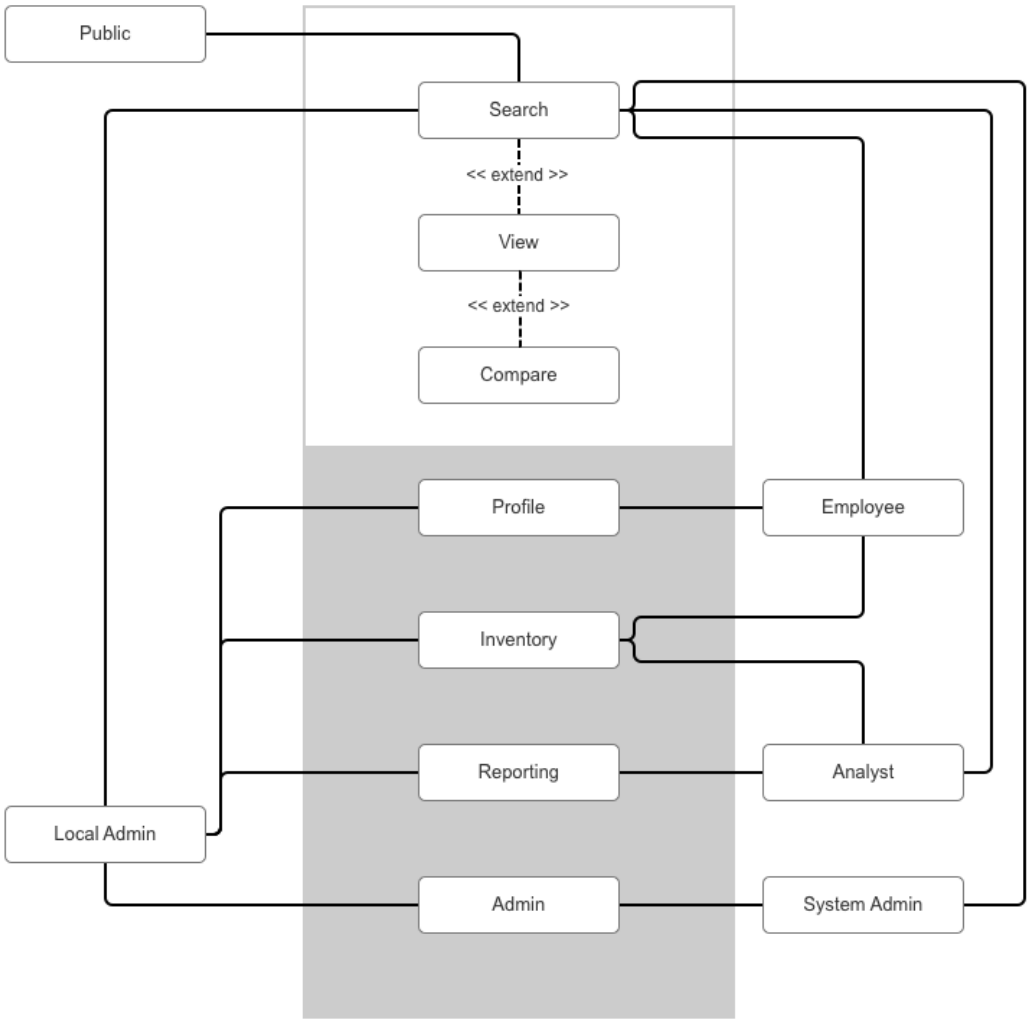
Summary

Henry works as the System Administrator for Nourish. He graduated with degrees in both Computer Information Systems and Statistics, so being able to manually control the algorithm which specifies the nutritional cut-points for foods is the perfect role for him. Danny spends his days maintaining the system, analyzing databases, and inspecting data to influence future decision-making.

Goals

Henry loves data. Being able to tweak information and view what-if scenarios will allow him to determine if the current system is functioning at its best. Danny isn’t concerned with training new employees on the system; rather, he wants to make site-wide updates that positively affect every user’s experience. He wants to be able to easily interact with the nutritional algorithm and how it is visually displayed (colors). He wants to see how changes he makes affects nutrition labels, and use those findings to better rank food items to allow for the implementation of Nourish in variety of nationwide food banks. Having one user with the power to manage Nourish will increase its reliability and ensure optimal system performance.

Use Case



Search Actions (All Users)
- Quick Search with text
- Quick Search with scan
- Filter for category, restrictions

Search Actions (Login Users)
- Advanced Search
- Filter based on Source
- Add to Wishlist
- Recent or Frequent Searches

View Actions (All Users)
- Original Nutritional Facts Label
- New Label - 2018 Revision

Compare Actions (All Users)
- item selection (3-5 items)

Profile Actions (Login Users)
- Register Account (name, email, image)
- Create Password
- Password Recovery
- Password Reset
- Update Profile (name, email, image)
- Dashboard (welcome, options)

Inventory Actions (Login Users)
- Add Items to Wishlist
- Link Items from Wishlist
- Manage Items

Reporting Actions (Analyst)
- View Overview (categories, items, time, bulk)
- Filter (categories, items, time)
- Forecast (categories, items, time)
- Export (pdf, xlsx)

Admin Actions (System Admin)
- Manage Search Index Values
- Manage Database Sources
- Manage Groups / Users

Visual Design

Color Scheme

CMYK 100 88 0 14
RGB 25 57 138
HEX #19398A

CMYK 16 100 87 6
RGB 195 32 50
HEX #c42032

CMYK 53 14 89 56
RGB 67 96 38
HEX #436026

CMYK 0 69 100 0
RGB 243 113 33
HEX #F37121

CMYK 0 18 100 0
RGB 255 207 1
HEX #FFCF01

Typography

Arial

ABCDEFGHIJKLMNOPQRSTUVWXY
abcdefghijklmnopqrstuvwxyz
1234567890!?&

Roboto Slab

ABCDEFGHIJKLMNOPQRSTUVWXY
abcdefghijklmnopqrstuvwxyz
1234567890!?&

Logo

nourish