NutritionNow

D E S I G N   S P E C I F I C A T I O N S

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HCDE 518A | FALL 2017

Process Flow

The process for use of the application follows similar nutrition tracking mobile applications. User identity is established by their phone's identity, thus no username, password, or email information is requested. Upon initial launch of the application, the user establishes goals and chooses preferences for notifications. The user is then presented with the home screen of the application where they can begin logging food. This is the starting place for all other user flows.

From the home screen, the user selects a meal and is prompted to select a food. A food can be identified by taking a photo or by name via text look-up. The user takes a photo of the food and is prompted to confirm the recognized food. The user is then presented with a series of short, multiple choice questions. These questions refine the identification of the nutritional content of established by the prior step. These also serve to increase awareness in the user of important attributes of healthy and unhealthy food. The number, nature, and detail of these questions are by a different system component not described in this document. However, they are of an adaptive nature: which questions a user asks will depend on their eating habits and the length of time they have been using the application. In general, more experienced users will be asked more detailed questions.

Additionally, the application can initiate an interaction by issuing a notification to the smart phone device. This prompts the user to enter information in a timely manner to improve user outcomes. Once responding to the initial notification alert, the user is presented with the familiar home screen, enters food, and answers questions in the normal flow.

Details and specifics of these flows are provided later in the document under the User Flow section.

Context & Background

According to our research, smartphone apps are the most popular tool for tracking nutrition amongst both currently active and formerly active users. Users who still track their nutrition report entering nutrition data less often than those who have stopped tracking. Additionally, users who have stopped tracking their nutrition commonly report it as being too time-consuming.

Therefore, our design seeks to be as streamlined and automated as possible. User interfaces have a minimum amount of possible interactions, and information queried of the user should cause a low cognitive load. Simultaneously, interactions should be grouped together so that a user is encouraged to interact with the application a lower frequencies than "multiple times a day." User research showed that unsuccessful users were most likely to track food this often.

Another design implication originating in user interviews is the need for nutrition tracking to be established as a habit by the user. Ideally, the user would become so successful in tracking their nutrition, they would no longer need to use a nutrition tracking app. The user should reach their nutrition goal by establishing a healthy nutrition program which has become second nature. Therefore, the app should focus not on gathering exact nutrition data about food consumed but on ensuring the user is establishing a new behavior of eating healthily

Design problem

Although there are many tools available to assist users with nutrition tracking, low adherence is still a problem. Users would make an attempt but then stop early due to a dissatisfying or frustrating experience, and due to this attrition, users are then prevented from achieving their health goals. Thus, our design goal was to address the following question:

"How can we improve the experience of nutrition tracking so that users will be adherent enough to meet their goals?"

Problem scope

The following describes the features and aspects of this design that we have decided should be in scope for this iteration. Additional features for future consideration of the next iteration are listed as out of scope below.

In scope for this iteration:
- Mobile platform
- Selecting health goals
- Selecting preferred reminder times
- Selecting a food category to add to (e.g., "lunch", "snacks", etc.)
- Two options to document food: photo or database search
- Automatic nutritional info recognition through photo detection
- Database of food items and their nutritional info
- Follow-up questions for each food entry
- Complexity of documentation process concordant with user's progress and experience (e.g., program will assess for more information for advanced users vs. first-time users)d becomes more user's progress
- Automatic daily reminders sent to user

Out of scope, consider for next iteration:
- Non-mobile platform (e.g., voice assistant bot)
- Conversational feedback (conversational components are ready, but awaiting the proper algorithm to be programmed)
- Display of user's progress
- Assessing additional user information upon login

Research findings

Methods

We utilized several research methods: online surveys, user interviews, and competitor research. A total of 53 participants (survey respondents=50, interviews=3) were recruited from various online networks. All participants have had at least some prior experience with nutrition tracking and were able to read and understand English. We excluded 4 survey responses as we found these participants did not meet eligibility criteria for this research. Of the remaining survey respondents, 20 were currently tracking their nutrition (active trackers) and 26 had stopped (inactive trackers). Below is a detailed report of key findings.

Reasons Users Stopped Tracking

Some common reasons for users no longer tracking their nutrition are listed below. The most common reason was for being too time-consuming, followed by the tool being too difficult to use and the user forgetting to do it.

Reason	N (%)	Example Quote
Too time-consuming	9 (34.6)	"It took too much time"
Too difficult to use	5 (19.2)	"Because it's hard to do so"
Forgetfulness	4 (15.4)	"it was hard to make tracking a habit."
Not rewarding	4 (15.4)	"usually missed targets and it was making me feel bad"
Already met goal	2 (7.7)	"Met my goal"
Other	2 (7.7)	"Cholesterol"

Platform Preference

We wanted to assess the popularity of already existing tools and methods. This will help steer us in a technical direction. Additionally, we asked them to explain why they prefered these methods. Here we can see that ease of use and convenience are most valued aspects for both active and inactive trackers.
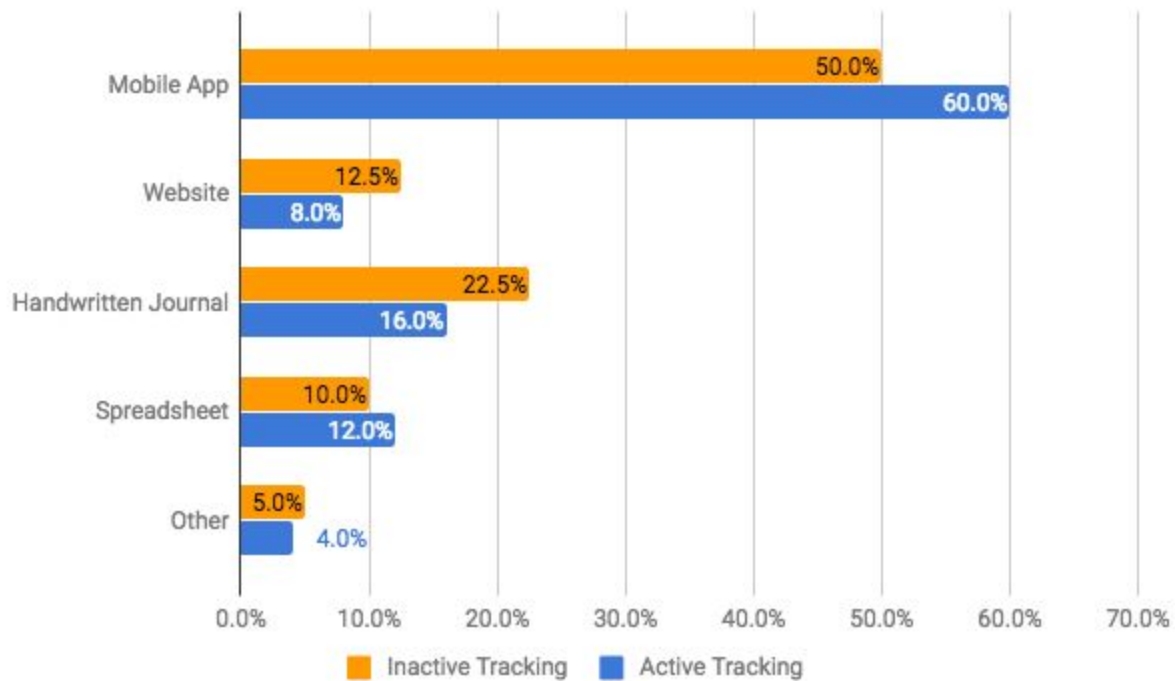
Reasons why inactive users picked their method:

Reason	N (%)	Example Quote
Ease of use	13 (50)	"Easiest"
Convenience	6 (23.1)	"Convenience, always have it with me"
Recommended	3 (11.5)	"Suggested at time"
Food database	2 (7.7)	"Easy, can scan Barcode, large database (my fitness pal) "
Cost	2 (7.7)	"It was free and readily available "

Reasons why active users picked their method:

Reason	N (%)	Example Quote
Ease of use	10 (50)	"Its easy"
Convenience	5 (25)	"Mobile app because it's convenient and journals because it's easy to flip through"
Other	3 (15)	"To eat better. "
Food database	1 (5)	"Mobile app (MyFitnessPal) is easily accessible, has large user base to help with cataloging foods, has interesting articles/recipes"
Recommended	1 (5)	"Recommended by friend"

Experience Rating

We asked participants to think about their most recent nutrition tracking experience and rate how negative or positive they thought it was. We then followed up by asking them to provide their reason for that rating. Interestingly, we found that most ratings from inactive trackers leaned more neutral or negative, whereas active trackers did not have any negative ratings whatsoever.
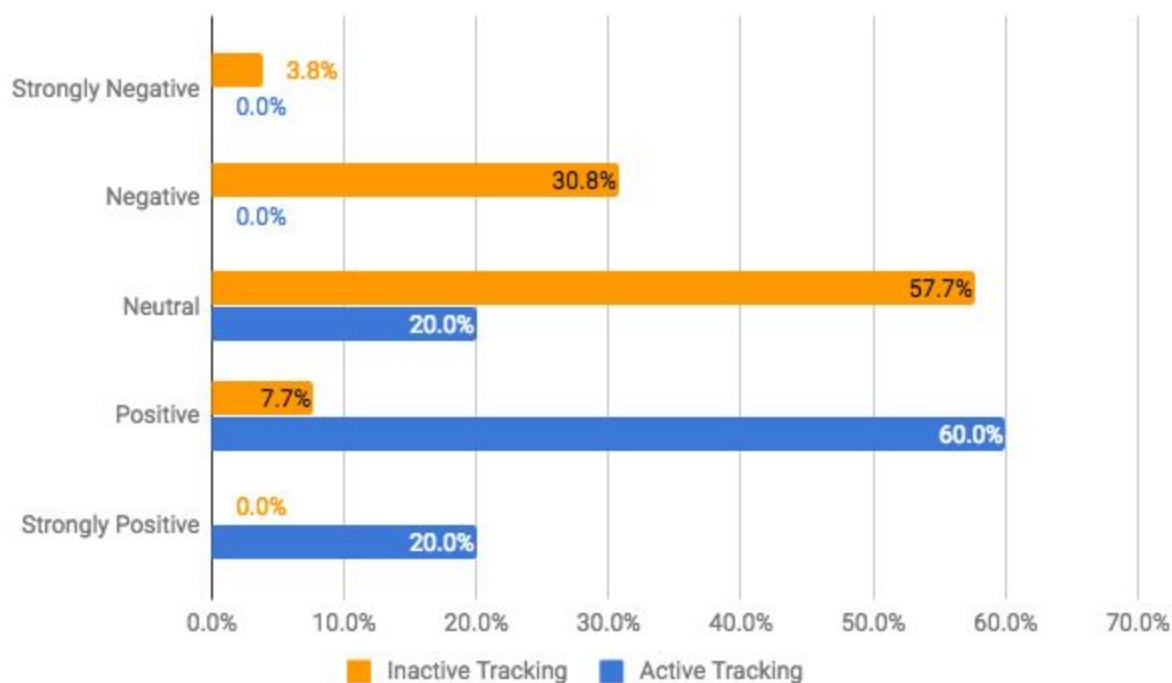
Rating rationales for inactive users:

Reason	N (%)	Example Quote
Caused negative feelings	6 (23.1)	"Too much time spent thinking about what to eat"
Other	5 (19.2)	"It wasn't overly positive or negative for me. It was something that had both those qualities. "
Too much effort	5 (19.2)	"Tedious to track"
No response	3 (11.5)	"not sure wha you mean"
Too time-consuming	3 (11.5)	"I wasn't really able to update it frequently"
Ease of use	2 (7.7)	"How quick and easy it is to enter"
Tedious to enter food	2 (7.7)	"It's too hard to look up nutrition information for foods. I end up putting in wild guesses, and not having confidence in the numbers."

Rating rationale for active users:

Reason	N (%)	Example Quote
Ease of use	6 (30)	"Easy to do, makes me in control of what I eat"
Mixed feelings	3 (15)	"Ups and downs in regards to progress. "
Positive feelings	3 (15)	"i feel more energetic."
Achieved goal	2 (10)	"Helped achieve goal"
Awareness	2 (10)	"helps keep excesses in check"
Liked the app	2 (10)	"I use MyFitnessPal and am fairly satisfied with the app overall"
Negative feelings	2 (10)	"It gets cumbersome."

Summary

Based on our research, we decided that our target users would be those who had attempted nutrition tracking in the past but stopped because they had a negative experience. Our goal is to help these users become successful use cases: users who are no longer tracking, but they have done so because their experience was rewarding enough to help them achieve their health goals and to teach them how to develop long-term healthy habits. Among our target users, the most significant themes included:

1) Ease of use (tool was too difficult to use) - Based on feedback from these users and our research with other competitors, it was found that the food documenting process is overly complex. For instance, requiring users to input information that they do not know or cannot accurately measure.

2) Convenience (tool was too time-consuming) - This difficult process also impacted convenience, as users were spending too much time entering in foods.

3) Forgetfulness - Users could not consistently remember to track.

Additionally, we were inspired by our successful use cases we observed among survey respondents and user interviews (i.e., those who are no longer tracking but had a positive experience). These users demonstrated successful behavioral change that was facilitated by their nutrition tracking experience. Our overall design solution should focus on helping users learn healthy behaviors so that, eventually, they will no longer need to rely on our tool--we want to help users help themselves.

Design Decisions

Finding	Design Implication	Feature Specification
User report using mobile phone applications to track nutrition	On-the-go accessibility is required	A smart phone application implementation
Time-consumption: users spent too much time, felt tedious	Design should minimize the amount of time spent tracking	Automatic nutrient recognition via photo & simplified questions
Difficult to use: users were unable to accurately document complex nutritional info	Design should not require user too much complex information	Focus less on precision, more on estimates & simplify info required from users; Avoidance of numerical entry and feedback
Forgetfulness: users could not remember to record	Design should prompt users and provide reminders	Daily reminders determined by user's preferred time
Successful use: inactive tracker but positive experience	Design should teach users healthy habits and long-term behavior change	Self-learning app gradually advances with user

User Flows

Task 1: Get started by setting up some basic information: your overall goal for nutrition tracking is weight loss, and you'd prefer to receive app reminders at 8:30PM.

WELCOME SCREEN → GOAL SCREEN → REMINDER SETTING SCREEN → HOME SCREEN
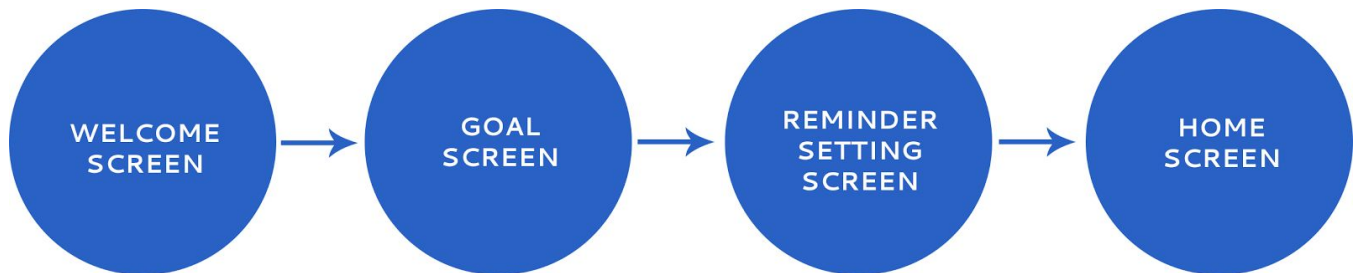
Task 2: Add your first meal: breakfast. Record your meal, a beef burger and large fries, using the photo feature. This feature automatically estimates nutritional content based the photo.

HOME SCREEN → TAKE A FOOD PHOTO SCREEN → BREAKFAST PICTURE SCREEN → QUESTION-1 SCREEN → QUESTION-2 SCREEN → HOME SCREEN
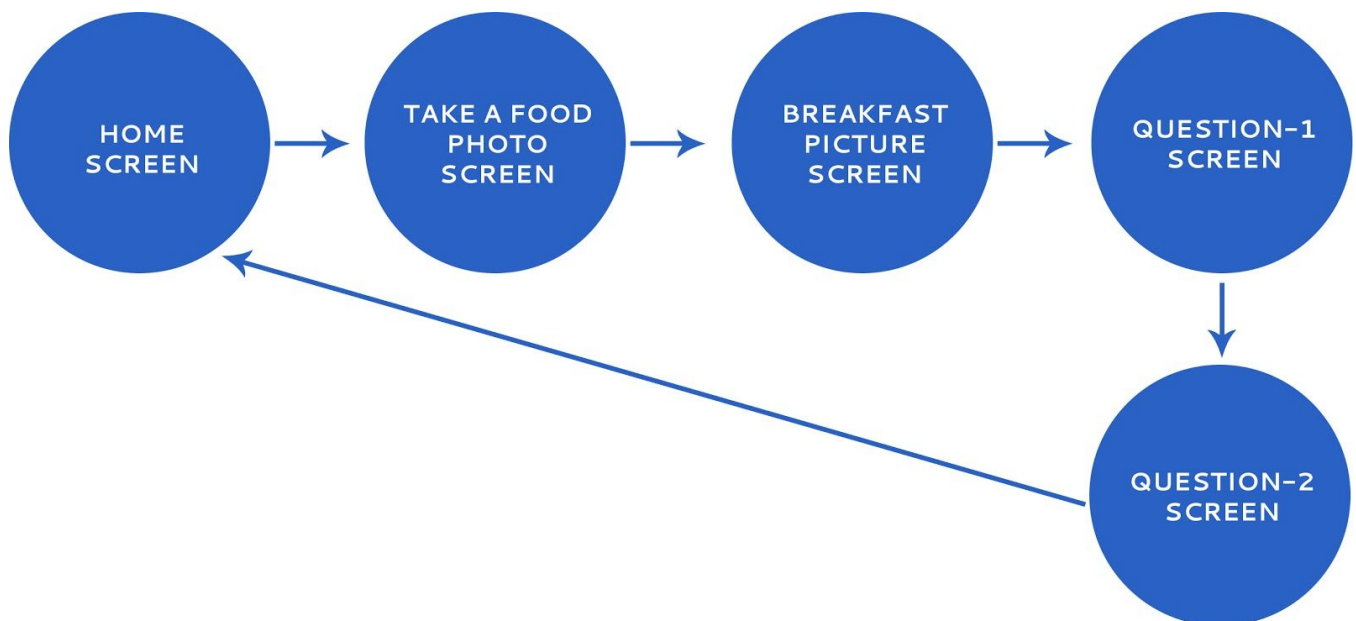
Task 3: Imagine you've been doing this for a few weeks and you're starting to get pretty good at it. As a result, the app will start asking about more details as you progress. Record your lunch, a bacon cheeseburger on a pretzel bun and small fries, using the photo feature.
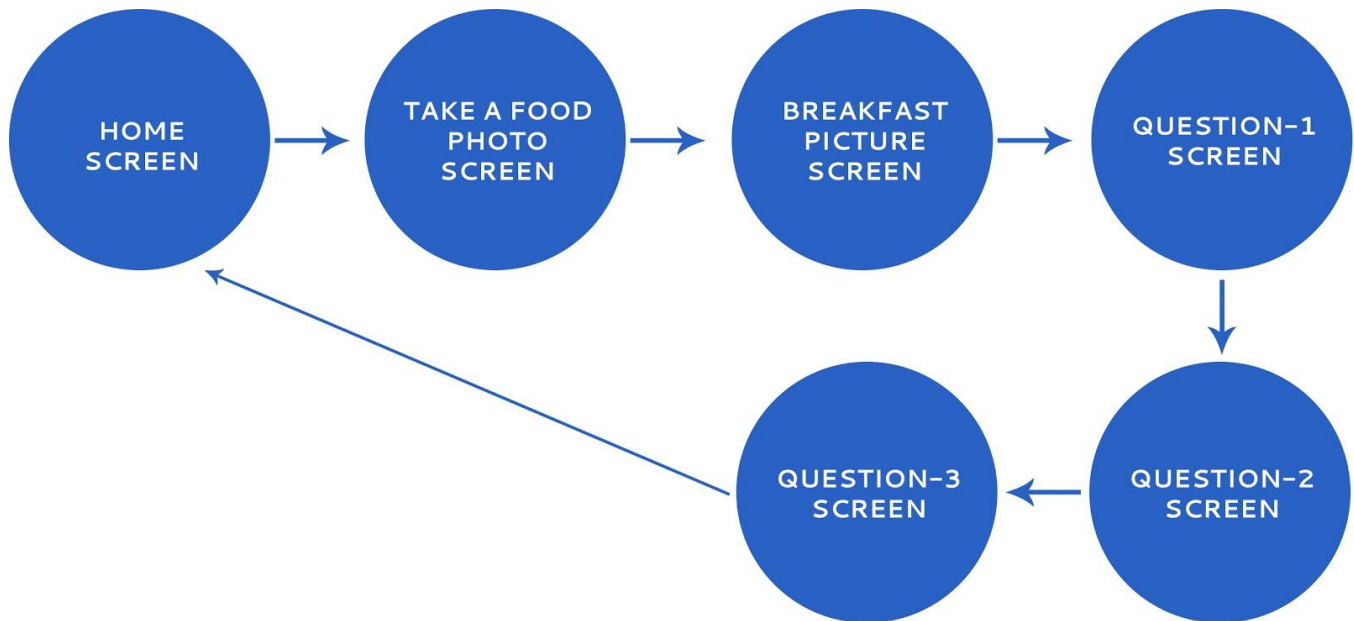
Task 4: It's the 8:30PM and you've received your daily reminder: you forgot to record lunch! Since you forgot to take a photo of your lunch, record your meal, a hamburger, by searching through the food database.
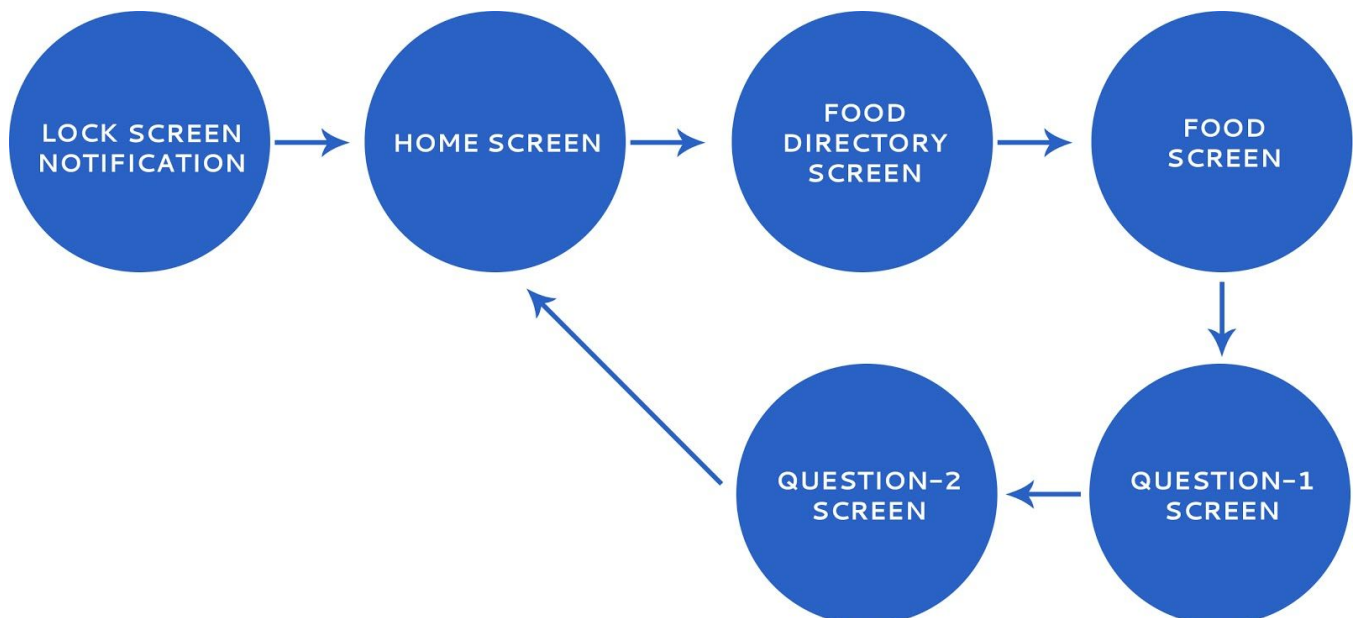
Style Guide

Font: Arial

Aa

Colors:

00608A	95AFBF	FDB400
PRIMARY COLOR	SECONDARY COLOR	BUTTON COLOR

Interaction Design Specifications
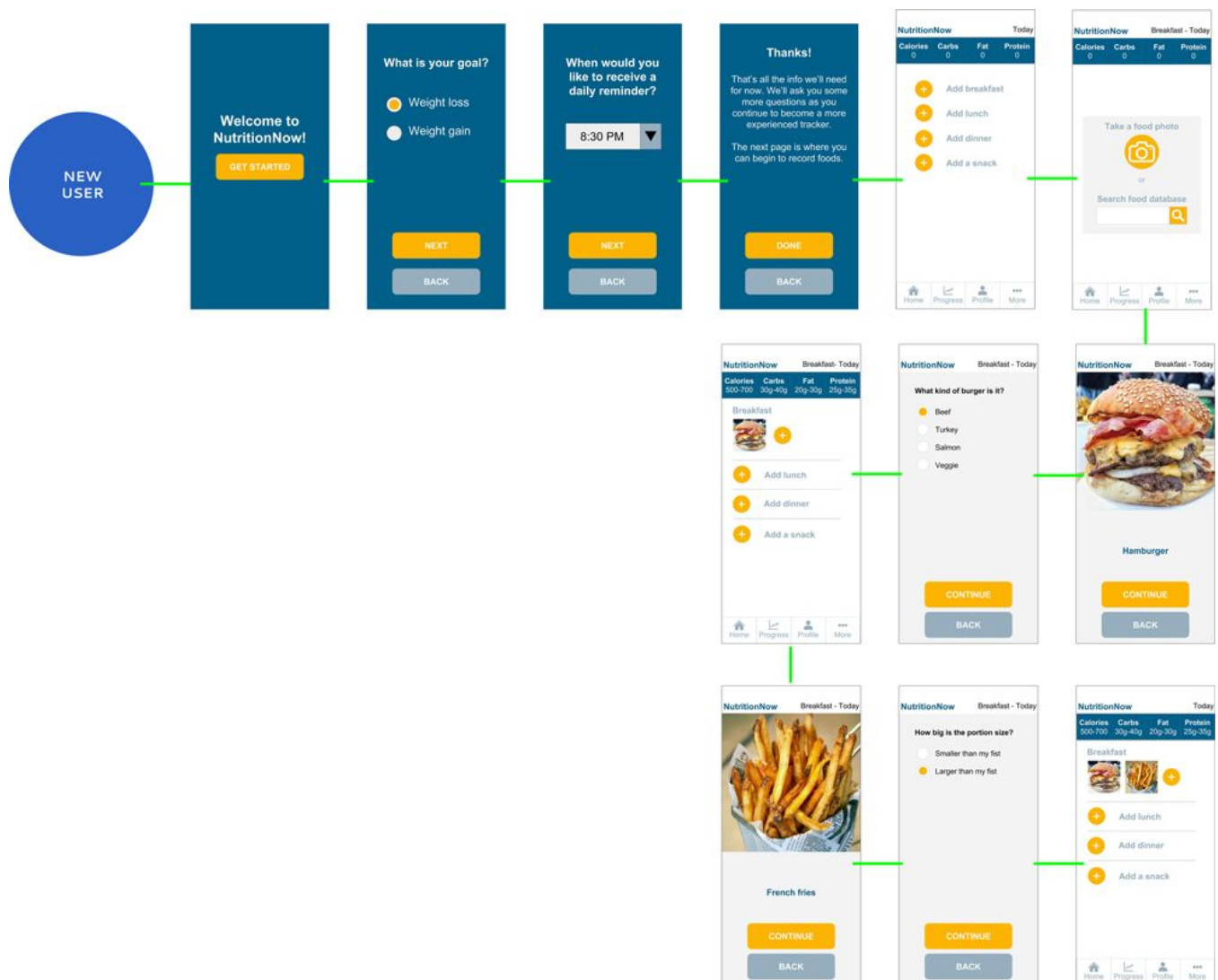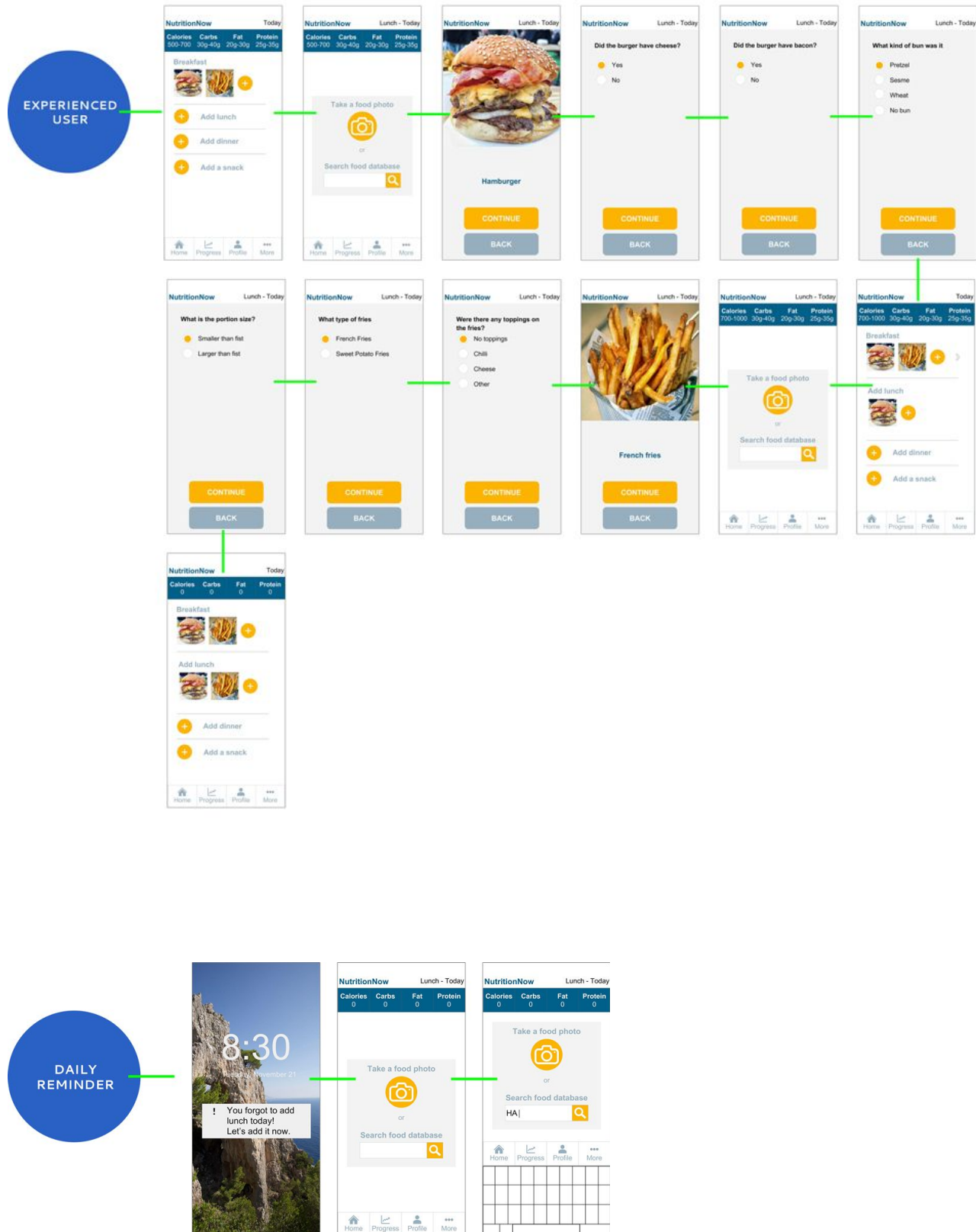
Technical Specifications

Each slide represents one iPhone X screen
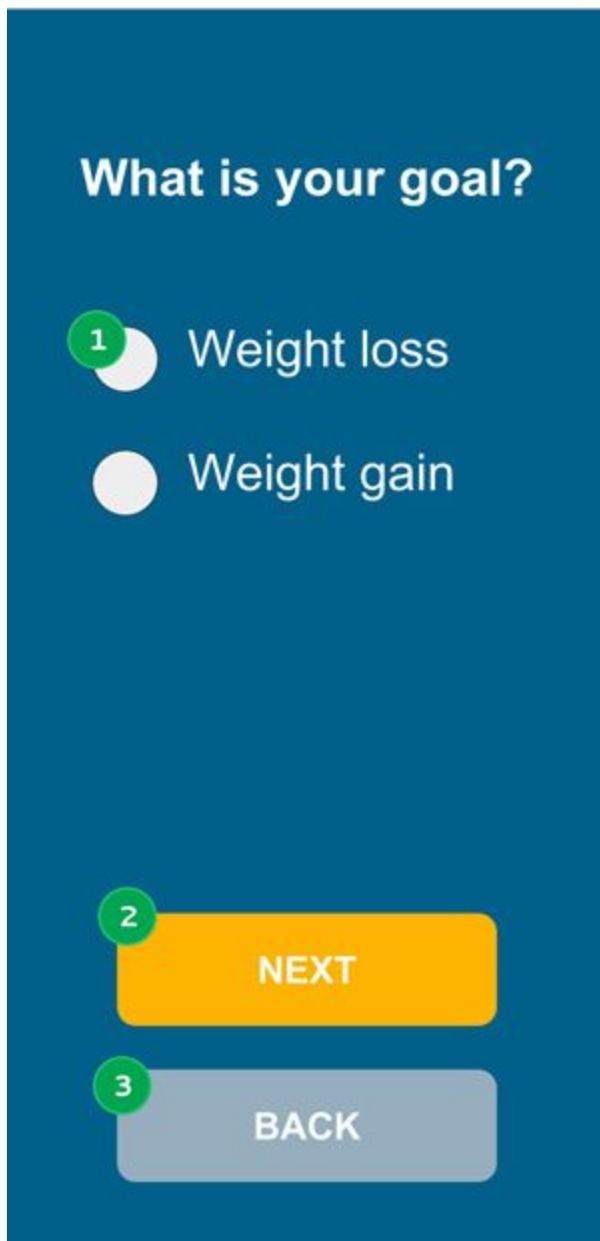
Welcome Screen
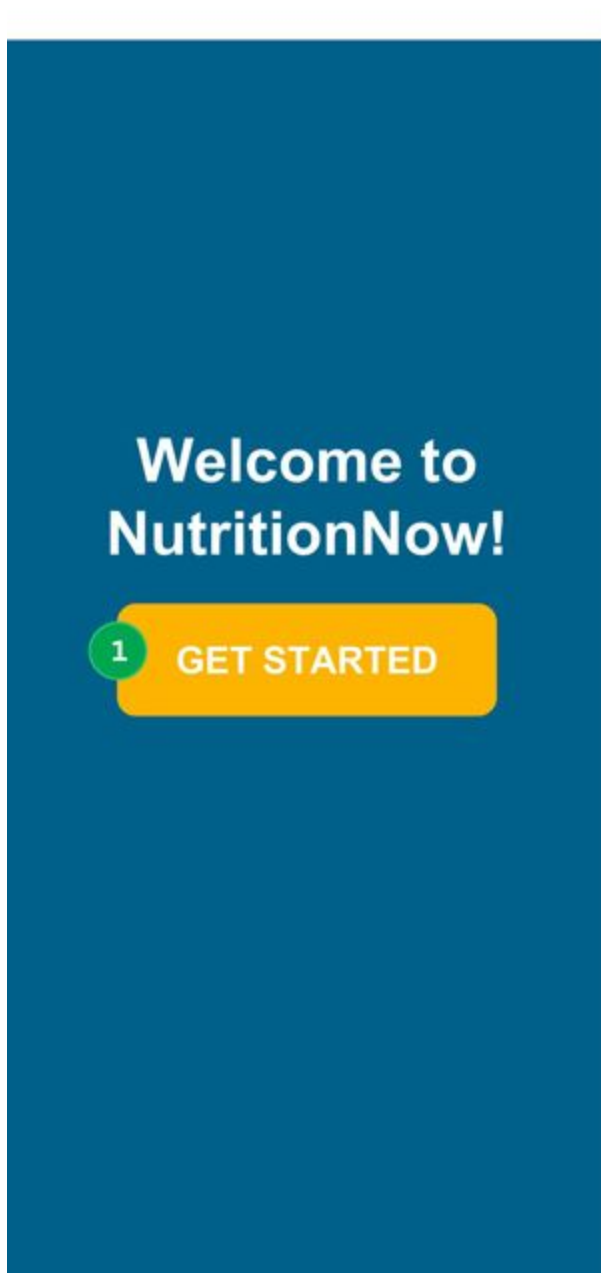
This is the 1st screen the user sees as he enters the app.
   (1) Button: Get started takes the user to the next screen

Goal Setting Screen

The next screen is where the user would set his goal for using this app.
   (1) Radio buttons: The user can pick his/her goal by selecting either option
   (2) Button: Next will take him to the next screen
   (3) Button: Takes the user to the previous screen

Reminder setting screen
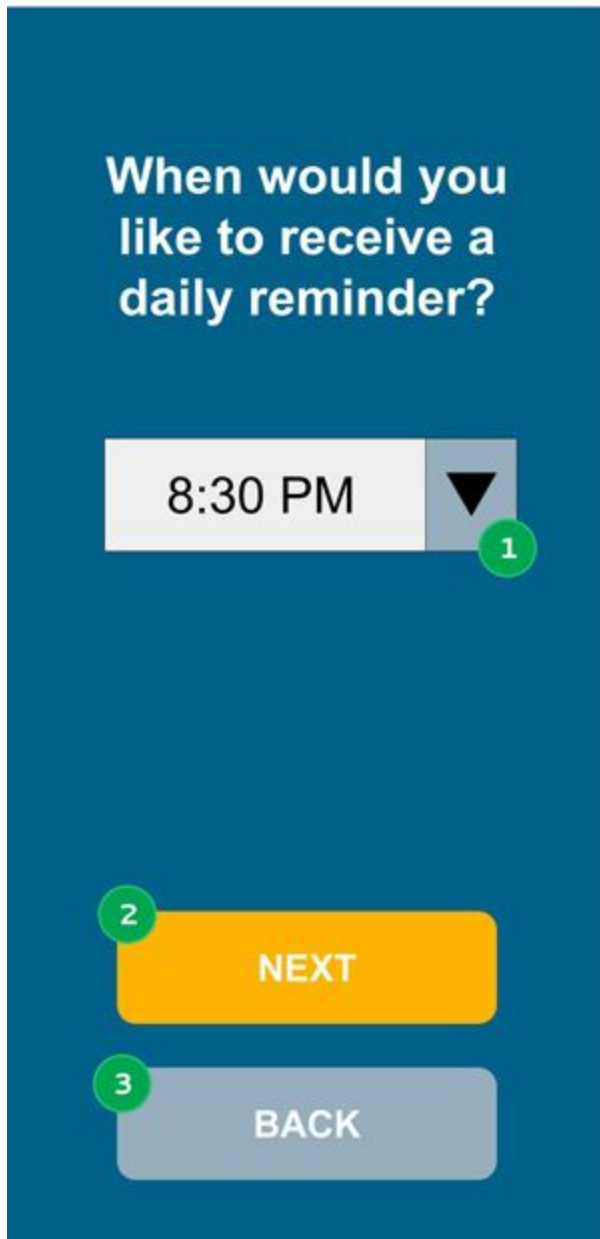
The app would ask the user to set a daily reminder in case the user forgets to log his or her food.
  (1) Drop down: the user can pick a time for daily reminder
  (2) Button: takes the user to the next screen
  (3) Button: takes the user to the previous screen

Confirmation Screen
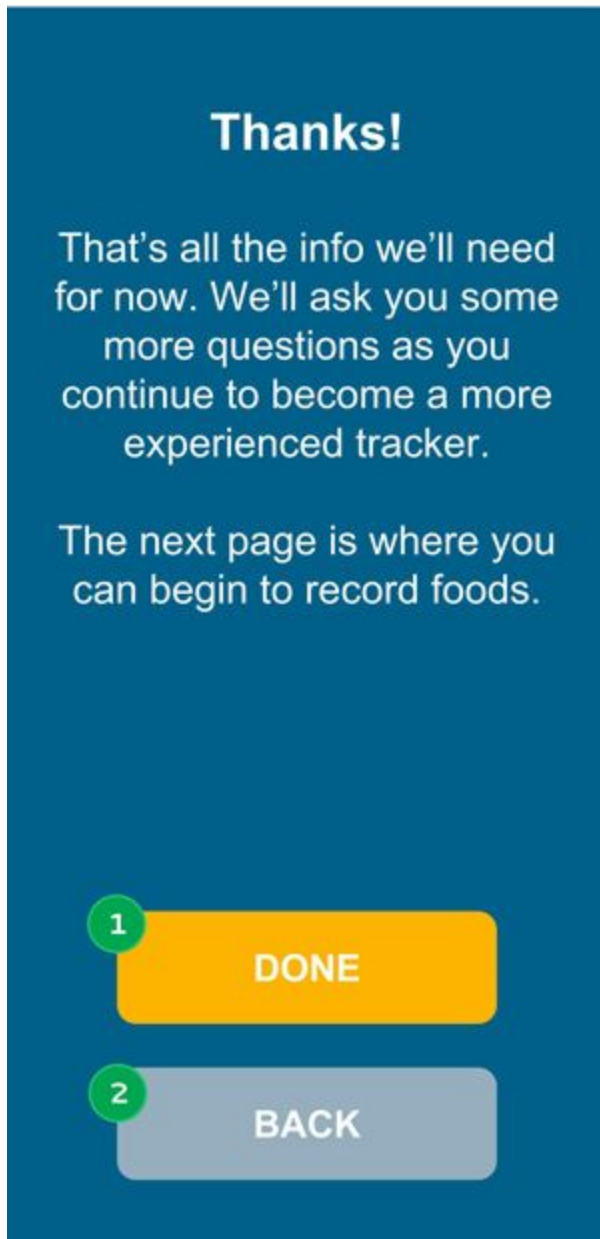
    (1) Button: This will get the user started
    (2) Button: WIll take the user back to the previous screen

Home Screen
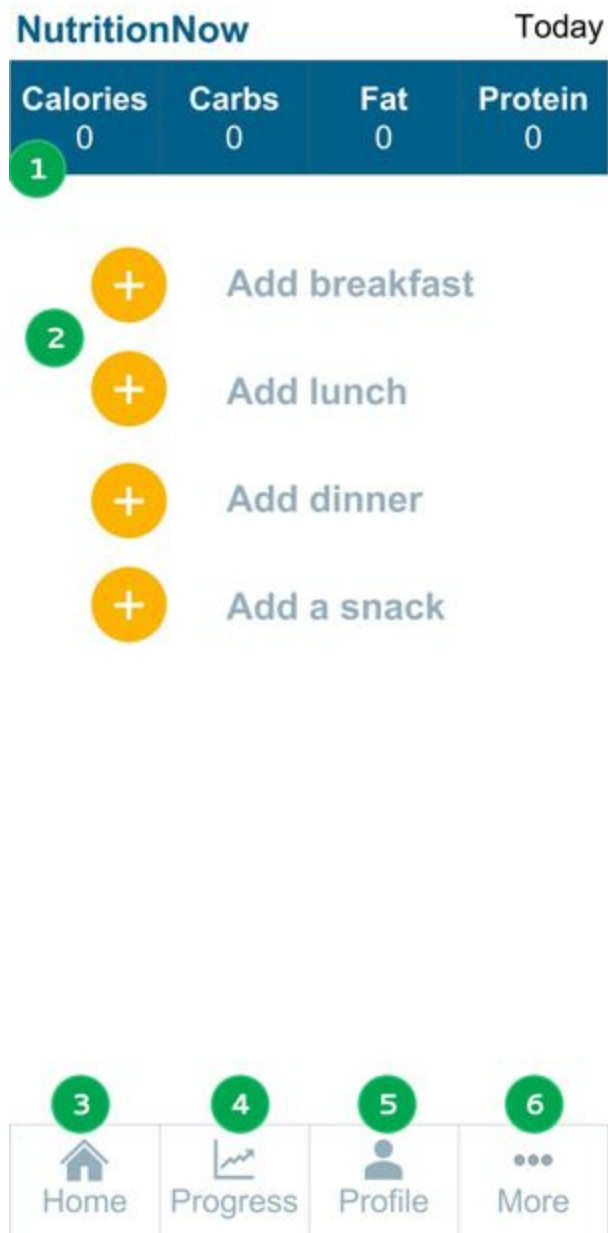
(1) Information bar: Here the user can see his daily nutrient consumption.
(2) Button: User can add his meal here
(3) Home Button: Tapping this will take the user to the home page
(4) Progress: Here user will be able to see his progress
(5) Profile: Users profile
(6) More: Other features of the app

Food Capture Screen

(1) Button: This will activate the camera on the user's phone. The user can take a picture of his food
(2) Text Field: the user can search for food in the food database

Food Picture Screen
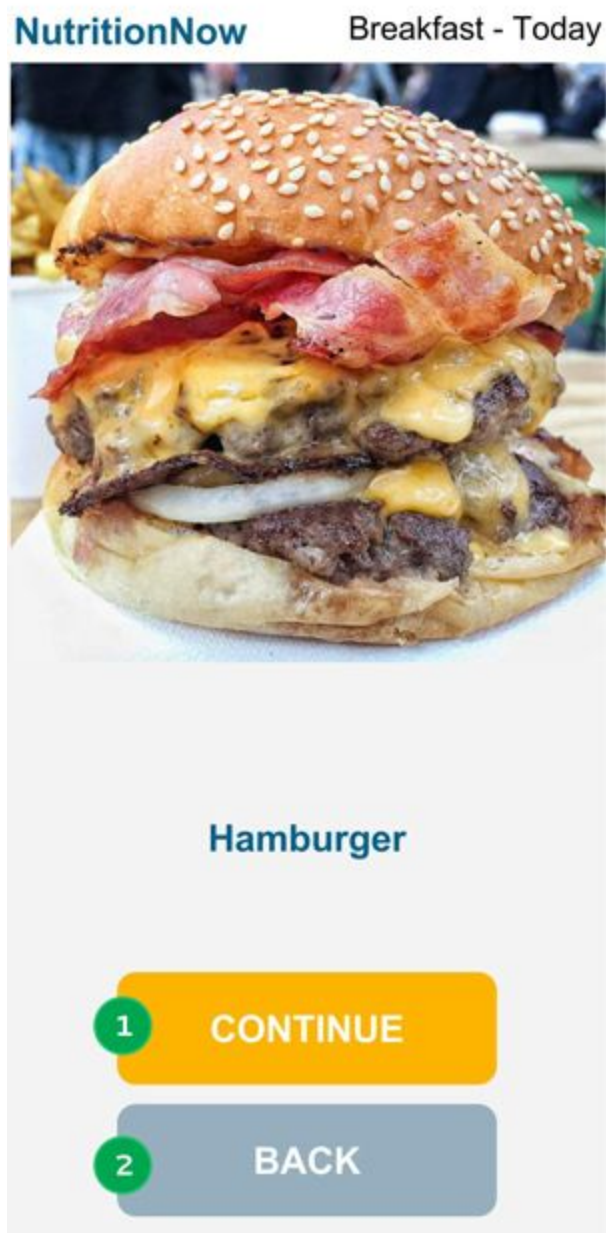
(1) Button: This will take the user to the next step of food documentation
(2) Button: WIll take the user to the previous screen

Questions Screen
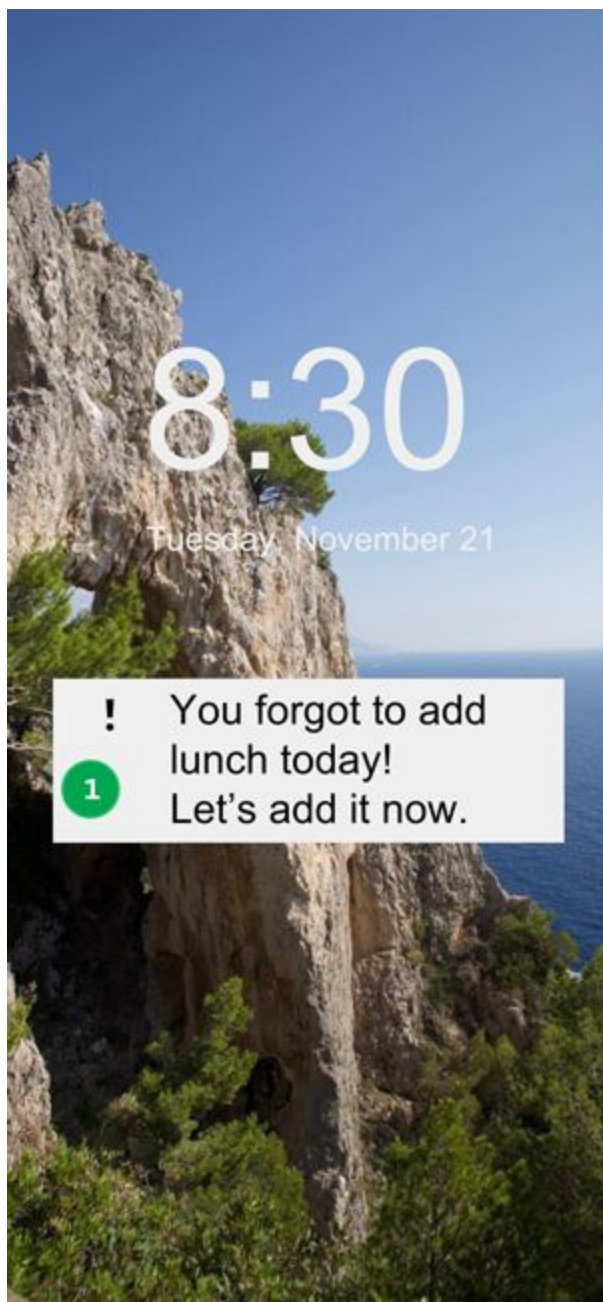

(1) Radio Button: The user should pick an option about his mean
(2) Button: Takes the user to the next step
(3) Button: Takes the user to the previous screen

Notification Screen

    (1) Notification on home screen