

426 - Interface Design and Development, Professor Rick Scott

Blue: Smart Arm Band

Design Document: Smart Arm Band

Product Description


To help the everyday individual with various everyday tasks more conveniently than smart phones and other similar devices.

The Smart Arm Band device has an Android/iPhone hybrid platform. However, with our efforts it will be in PHP. It will be able to keep track of workout routines, muscle building, and calories burned. Furthermore, it will be able to keep track of calorie intake by means of a bar-code scanner and an amazing form of a food diary. The device is multi-touch, voice and image sensitive, and conveniently located on the individual's arm.

Eric has decided to eat healthier by keeping track of the calories he intakes. He decided to do this with the amazing smart arm band device. He made this choice because the product includes a health application with various tools to easily keep him healthier and more active. He is at a restaurant and wants to make sure he doesn't go over his calorie intake goal. Therefore, he uses the health application on the smart arm band to validate that his chosen meal is healthy and the total calories are under the specified goal.

Josiah Peterham's Design Document

Persona

<p style="text-align: center;">Eric Donahue intermediate</p>  <p style="text-align: center;">"A health body is a good environment for a healthy mind "</p>	<p>Personal Profile</p> <p>Gender: Male</p> <p>Age: 22</p> <p>Location: Rochester</p> <p>Marital Status: single</p> <p>Children: none</p> <p>Education: Bachelors from RIT</p> <p>Hobbies: Sports, Exercising, anything active</p> <p>Personality traits: Outgoing, strong-willed, hardworking, confident</p>
<p>Job Profile</p> <p>Current job: Manager of Development</p> <p>Company: FrogDesign</p> <p>Location: Rochester, NY</p> <p>Work history: Web Site Designer and Tennis Coach</p> <p>Etc.: Goal is to start his own business developing and redesigning websites.</p>	<p>Product Usage Profile</p> <p>Product Experience: None</p> <p>Product Goals: To be able to easily learn and apply the device in everyday life</p> <p>Product Expectations: To easily help him stay healthier</p> <p>Etc.: Worried that that it will be a cumbersome task of logging all the food he eats.</p>

Task Scenario

Critical task: Log food about to be eaten

Persona: Eric Donahue

Presently, Eric is at a restaurant ordering dinner and wants to make sure he stays under his daily calorie limit he has set. Therefore, he quickly resorts to his conveniently located smart arm band. Next, he selects the health application, quickly touches the restaurant choice, and navigates the alphabetized list of restaurants to his current location. Once his current restaurant is select he quickly chooses a medium

Pepsi from the drinks category and then selects the T-bone steak meal in the meat category of the restaurant. Once he has reconfigured the meal to fit what he is ordering, he reviews the total calories from his order and sees that the meal will keep the amount of calories under his set limit.

Hierarchical Task Analysis

Critical task: Log food about to be eaten

Persona: Eric Donahue

1. Log food from restaurant
 - 1.1 History
 - 1.1.1 Choose food from list of recently eaten items
 - 1.1.2 Review calories and ingredients of the selection
 - 1.2 Choose from alphabetized list of restaurants
 - 1.2.1 Choose from food and drink categories the restaurant offers
 - 1.2.2 Choose food or drink from chosen category
 - 1.2.3 Change size or ingredients to duplicate the food or drink ordered
 - 1.2.4 Review calories and ingredients of selection

2. Log food made at home
 - 2.1 History
 - 2.1.1 Choose food from list of recently eaten items
 - 2.1.2 Review calories and ingredients of the selection
 - 2.2 Choose from alphabetized categories of ingredients
 - 2.2.1 Select ingredient from chosen category
 - 2.2.2 Specify amount of ingredient
 - 2.2.3 Add ingredient
 - 2.3 Repeat 2.2 until all ingredients are included
 - 2.3.1 Review calories and ingredients of selection

Usability Goals

Critical task: Log food about to be eaten

Persona: Eric Donahue

Learnability metric: How many wrong selections are made before user completes task without instruction for the first time?

Acceptance criteria: One wrong selection is acceptable, anything more is not.

Efficiency metric: How quickly does it take for a user to log a full meal?

Acceptance criteria: At most fifteen seconds to reach the final "review" stage.

Memorability metric: After not using the device, how long does it take for a user to log a full meal?

Acceptance criteria: At most twenty seconds to reach the final "review" stage.

Error-handling metric: How many errors are made after one full task is complete. How quickly is the error resolved if it all?

Acceptance criteria: One error made is acceptable and it should be able to be resolved within eight seconds.

Accessibility metric: More accessible than a smart phone

Acceptance criteria: Able to perform all tasks solely with voice recognition

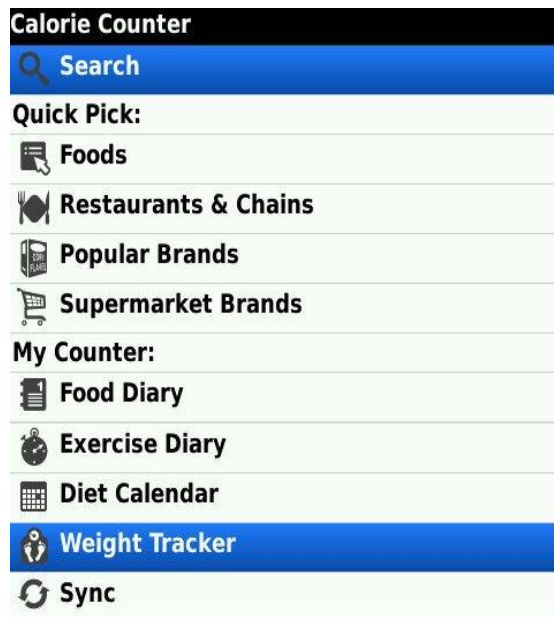
Satisfaction metric: Satisfaction after one week.

Acceptance criteria: One being very unsatisfied and ten being very satisfied

Mockup

Critical task: [Log food](#)

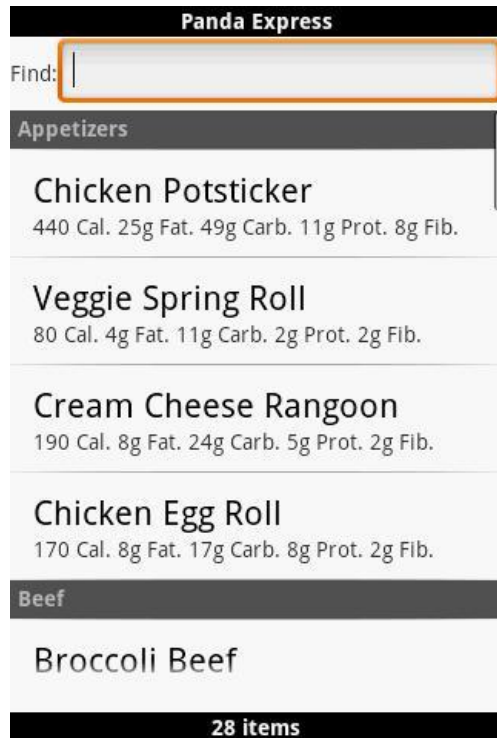
Persona: [Eric Donahue](#)



This is the main screen and it will have a list of health tools including, restaurants, foods, food diary, exercise diary, and a bar code scanner. This is just a mockup screenshot and not exactly what the program will look like.



This screenshot is very self explanatory; it has a list of current restaurants in the database. The list is alphabetized and updated frequently. For usability test only a few restaurants will be available to be selected. However, when selected categories based on the specific restaurant are shown and can be chosen to view the containing food products and their nutrition facts.



This screenshot shows the nutrition facts of each food product in each category of the selected restaurant. These nutrition facts include calories, fat, carbohydrates, protein, and fiber. Once the meal is selected, more nutrition facts can be viewed and ingredients can be altered as well.

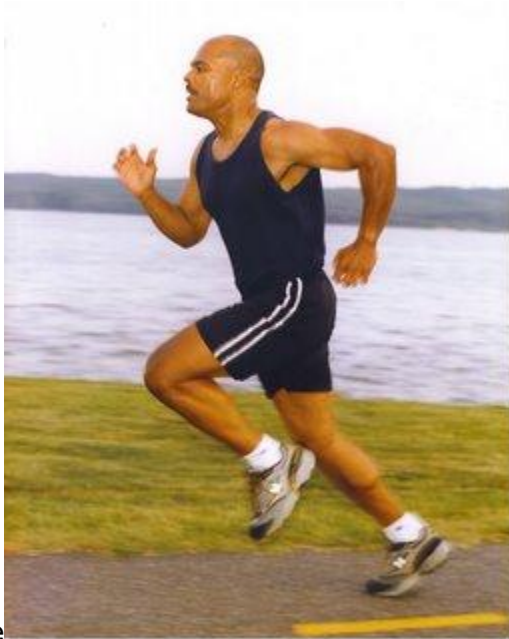
	Fat	Carbs	Prot	Cals
Total (11 Items)	40.43	431.45	82.01	2,286
Breakfast	6.08	68.62	19.39	404
1 mug Coffee				
1 cup Lowfat Plain Yogurt				
1 cup Orange Juice				
2 slices regular Toasted Rye Bread				
Add Breakfast Food				
Lunch	28.61	93.48	11	645
2 extra small Bananas				
1 oz Barbecue Flavor Potato Chips				
1 can Diet Soda				
1 cup Macaroni or Pasta Salad				
Add Lunch Food				
Dinner	5.74	269.35	51.62	1,237
1 can or bottle Beer				

This screenshot is a review screen that is shown after every meal is configured and added to the food diary. It shows the current total calories and other important nutrition facts. Furthermore, it has a history of all the past meals and their nutrition facts. This screen can also be found in the main menu of the health application under the tool named “Food Diary”.

Doug's Design Document

Persona

Mark Hamilton



Intermediate

"Strive for progress, not perfection "

Personal Profile

Gender: male

Age: 43

Marital status: married

Children: 2

Education: Bachelors in Kinesiology
(Physical Education) from California
Polytechnic State University

Hobbies: Basketball, running, exercising

Personal traits: Determined, hard-
working, humble, respectful, and open-
minded

Job Profile

Current job: Fitness Trainer

Company Name: Planet Fitness

Location: Fishkill, New York

Product Usage Profile

Experience: He previously owned a
smart phone and knows the day to day
capabilities

Goals: Mark is highly concerned about
his health and fitness, so he will be using
the heart rate monitor application
frequently. He hopes it can be of great
value to him.

Task Scenario

Critical task: Measuring heart rate with the SAB application

Persona: Mark Hamilton

Mark Hamilton is a fitness trainer at Planet Fitness. He has a busy schedule due to his job, exercise schedule, and time he devotes to his family. Mark starts every day with the same routine. He wakes up at 6:30am and goes for a jog then comes back home, eats breakfasts, showers, and heads to work.

Mark has been using this routine for years and he used to have to leave the house with his phone, iPod, and stopwatch. Now that he has the Smart Arm Band he only leaves the house with this device. He plays music while he jogs and if someone needs to contact him or vice versa the phone is at the sleeve of his arm. When Mark is curious about his heart rate, he simply launches the Heart Rate Monitor application and measures his heart rate. At the end of his jog he views all of his previously logged heart rate measurements that were all saved to his Smart Arm Band, in order to check his progress.

Hierarchical Task Analysis

Critical task: Measure heart rate

Persona: Mark Hamilton

1. Put Smart Arm Band on the sleeve of your arm
 - 1.1 Attach to arm
 - 1.1.1 Detach Velcro strap
 - 1.1.2 Tighten strap so it fits comfortably around your arm
 - 1.2.3 Push Velcro down
2. Go to Heart Rate Monitor Application
 - 2.1 Click on Applications
 - 2.2 Click on Heart Rate Monitor
3. Measure Heart Rate
 - 3.1 Click on Measure Heart Rate
 - 3.2 Wait while heart rate is being measured
 - 3.3 Click on display results
4. View previously saved measurements
 - 4.1 Click the back button
 - 4.2 Click View log files
 - 4.3 Look at log files
 - 4.3.1 Scroll up/down the screen with finger
 - 4.3.2 Click on measurement of your choice to view details

Usability Goals

Learnability – The Smart Arm Band is quickly learned by its users because it has a structure similar to most smart phones that are on the market today. The heart rate monitor is a simple critical task to learn because it only takes a few steps to do so.

Efficiency - The Heart Rate Monitor application can be put on the home screen of the device so that it is more easily accessible and a finger touch away.

Memorability – The Heart Rate Monitor can be memorized even if it has not been used for a while because there are only a few steps and they are broken down into different screens with language familiar to the user.

Error handling – The Smart Arm Band is a touch screen device which can be susceptible to errors by accidental touching, so we have implemented confirmation screens which help users with errors.

Accessibility – This device will be used equally well amongst most people except for people with arm disabilities who can't use their hands and arms as a normal person may. For people with these disabilities the heart rate monitor application will incorporate a command prompt, which incorporates voice commands.

Satisfaction - The device is very enjoyable for its users because it incorporates all of the capabilities of the latest smart phones but it always a finger touch away because the device is on your arm. The heart rate monitor application is a huge benefit for users who are concerned about their health and fitness.

Critical task: Measuring heart rate
Persona: Mark Hamilton

Learnability metric: How long does it take the user to measure heart rate?
Acceptance criteria: 1 minute 15 seconds or less pass, else fail

Efficiency metric: How many clicks to measure heart rate?
Acceptance criteria: 3 clicks or less pass, else fail

Memorability metric: How much longer does it take the user to measure their heart rate compared to the last time they used it?
Acceptance criteria: more than 15 seconds longer fail, else pass

Error-handling metric: How many times did you accidentally click something and even with the confirmation screen still went to the wrong place?
Acceptance criteria: 2 or more fail, else pass

Accessibility metric: How much longer does it take someone with a disability to get access to the heart rate monitor than the average user?
Acceptance criteria: 20 seconds or less pass, else fail

Satisfaction metric: How many times per month does the user use the heart rate monitor?
Acceptance criteria: 6 or more pass, else fail

Mockup

Critical task: Measure heart rate



Persona: Mark Hamilton

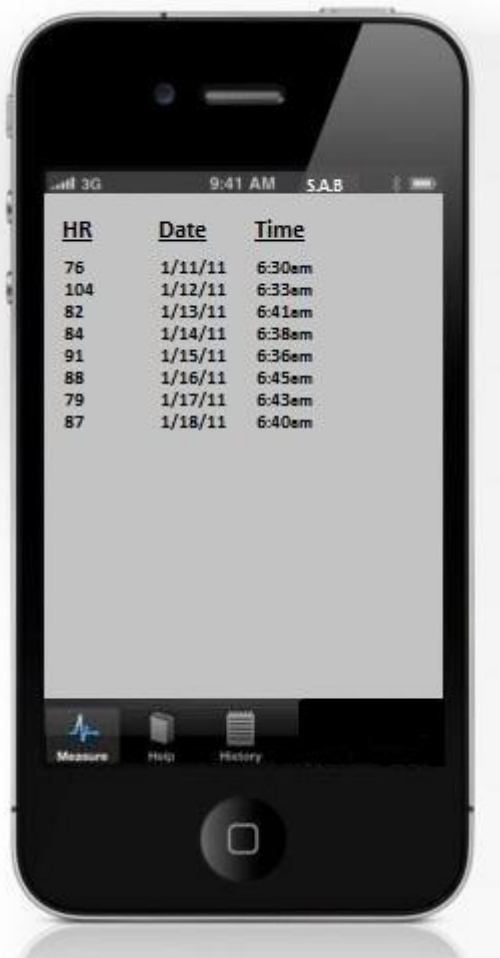
Mark Hamilton who is an owner of the Smart Arm Band will view this screen as his home screen. As displayed in the picture the home screen has many different icons, which represent different applications. Mark wants to measure his heart rate so he will click on the



icon that has a heart image.

This screen will be shown when Mark's heart rate is being measured. The middle of the image shows Mark's heart wave and his beats per minute. Mark knows which function is

occurring because “measure” is highlighted in red text. He also has other options to go to such as stored rates and at the bottom of the screen are other options for help and



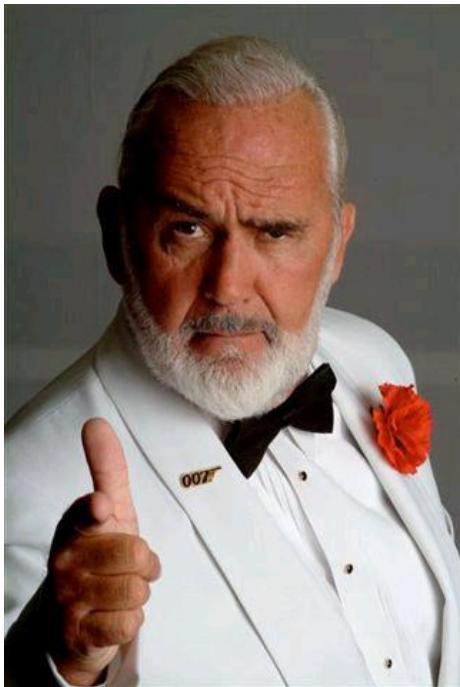
history.

Mark wanted to view the history of his heart rate measurements. This screen shows all of his previous heart rate measurements, which are automatically saved each time he measures his heart rate. There is a column for his heart rate, date, and time. Also at the bottom of the screen he has options for measuring his heart rate and help.

Justyn's Design Document

Persona

Sean Connery
user type (beginner.)



"We meet again trabeck"

Personal Profile

Male.

Age: Old as dirt but still kicks ass.

Occupation professional ass kicker

Notable triumphs: insulting Alex Trebeck on a regular basis.

Job Profile Overall god among man (captain, movie star, assassin,)	Product Usage Profile <i>Expects product to help him navigate to he locations of interest faster.</i>
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Task Scenario

Critical task: locating current location

Persona: Sean Connery

Sean mumbled to himself as he looked around the forest he was dropped at. "Where the bloody hell am I!?" he cried out before looking over to his SAB and powering it on. Quickly clicking on the map icon he was prompted with two new icons. 'hmmm' he thought before locating the location button that contained a picture of a map with a question mark in it. Tapping his foot as the screen signal flashed a few times he was presented with a local map with longitudinal and latitudinal coordinates

Hierarchical Task Analysis

Critical task: Locate Current Location

Persona: Sean Connery

1. Activate the where am I application
 - 1.1 Click on the where am I button
 - 1.1.1 Wait for the locations coordinates to load.
 - 1.1.2 Review the displayed coordinates to locate your current whereabouts etc.
2. Activate the directions program
 - 2.1 Enter the name of the desired location
 - 2.1.1 Click find and select from the list of close locations.

2.1.2 Read detailed directions to desired location

2.2 Enter the street address of the desired location and click enter

2.2.1 Review detailed instructions on how to arrive at the desired location.

Usability Goals

Critical task: Locating current location

Persona: Sean Connery

Learnability metric: How many wrong selections are done before the user finishes the process?

Acceptance criteria: One selection is allowed anything above one is not.

Efficiency metric: How long does it take for a user to locate their current location?

Acceptance criteria: About fifteen to twenty seconds for a user to locate their current location.

Memorability metric: For a user to never use the device how long should the location take?

Acceptance criteria: Thirty seconds max for new users.

Error-handling metric: how many possible errors are displayed in one locating process?

Acceptance criteria: a possibility of two errors.

Accessibility metric: More accessible than a GPS or smart phone.

Acceptance criteria: Able to perform more actions than any other device.

Satisfaction metric: Satisfaction after one use.

Acceptance criteria: 9/10 people satisfied with the process after one testing.

Mockup

Critical task: [Locating self location](#)

Persona: [Sean Connery](#)

