



Software Requirements Specification

Version 4.0

May 7, 2013



Revision Sign-Off

By signing the following, the team member asserts that he has read the entire document and has, to the best of his knowledge, found the information contained herein to be accurate, relevant, and free of typographical error.

Name	Signature	Date
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Revision History

The following is a history of document revisions.

Version	Date Revised	Comments
0.1	Oct. 14, 2012	Initial draft.
0.2	Oct. 17, 2012	Added content.
1.0	Oct. 23, 2012	Added content and organization.
1.1	Oct. 30, 2012	Added revisions based on client meeting.
1.2	Nov. 15, 2012	Revised document based on GoodNEWS and professor feedback. Added new UI mock ups.
1.3	Jan. 17, 2012	Removed Daniel Ducic.
2.0	Feb. 2, 2013	Revised document based on GoodNEWS meeting feedback. Updated document to reflect state of the project at the end of iteration 2.
4.0	May 7, 2013	Updated to reflect minor changes

Table of Contents

Revision Sign-Off	i
Revision History	ii
Table of Contents	iii
1. Introduction	1
1.1 Purpose	1
1.2 Intended Audience	1
1.3 Overview.....	1
2. Project Overview	2
2.1 Scope and Objectives	2
2.2 Background	2
3. Overall Description.....	4
3.1 Project Perspective	4
3.2 User Requirements	4
3.3 User Characteristics	4
3.4 Constraints	5
3.4.1 Time	5
3.4.2 Budget	5
3.5 Operating Environment	5
3.6 Assumptions and Dependencies	5
4. System Architecture	6
5. External Interface Requirements	7
5.1 User Interfaces	7
5.1.1 iOS	7
5.1.2 Android	7
5.1.2 Content Management System	7
5.2 Hardware Interfaces	7
5.2.1 Brazos Server	7
5.3 Software Interfaces	7

5.3.1 Database	7
5.3.2 GoodNEWS Application.....	7
5.3.3 Content Management System	8
6. Functional Requirements	9
6.1 General Requirements (GEN)	9
GEN 1	9
GEN 2	9
GEN 3	9
GEN 4	9
6.2 Content Management System (CMS)	9
CMS 1	9
CMS 2	9
CMS 2.1	9
CMS 3	9
CMS 3.1	9
CMS 3.2	9
CMS 4	10
CMS 5	10
CMS 6	10
CMS 7	10
6.3 Database (DB).....	10
DB 1	10
DB 1.1	10
DB 1.2	10
DB 2	10
DB 3	10
6.4 User Admin (CMS)	10
UA 1	10
UA 2	10
UA 3	10

6.5 Mobile Application (MA)	11
MA 1.....	11
MA 2.....	11
MA 3.....	11
MA 4.....	11
MA 5.....	11
MA 6.....	11
MA 7.....	11
MA 8.....	11
MA 9.....	11
MA 10.....	12
MA 11.....	12
MA 12.....	12
7. Non-Functional Requirements	13
7.1 Product Requirements.....	13
PR 1.....	13
PR 2.....	13
PR 3.....	13
PR 4.....	13
7.2 Organizational Requirements.....	13
OR 1.....	13
OR 2.....	13
8. Glossary of Terms.....	14
Appendix A. Use Case Models	15
Appendix B. User Interface Prototype – CMS.....	27
2012-09-27	27
2012-11-15	28
2012-09-27	29
2012-10-14	30

1. Introduction

1.1 Purpose

The purpose of this document is to fully describe the services and constraints of the HealthyFROGS' project. This document will include a set of use cases describing the GoodNEWS Fort Worth mobile application. In addition, UI mock-ups shall be included to show how the application and content management system will look and function.

1.2 Intended Audience

The target audience for this document is the development team from Texas Christian University, the UNT Health Science Center GoodNEWS Team, and TCU Computer Science faculty involved with Senior Design.

1.3 Overview

Section 2 provides the overall scope, objectives and project background.

Section 3 provides the system information in general, includes requirements and constraints.

Section 4 provides the system architecture.

Section 5 provides the user, hardware, and software interfaces.

Section 6 provides functional requirements for the system.

Section 7 provides the non-functional requirements.

Appendices will include user interface prototypes and use cases.

2. Project Overview

2.1 Scope and Objectives

The HealthyFROGS project will further the GoodNEWS Fort Worth initiative by giving community members direct access to current health information and resources provided by GoodNEWS. It is HealthyFROGS' intent for this project to improve the lifestyle of the Fort Worth community through health education and by providing access to local health resources.

The objective of the GoodNEWS Fort Worth project is to create a system that promotes healthy living for members of the Fort Worth community in addition to enabling better communication between GoodNEWS and community leaders. The project shall consist of a multiplatform mobile application and a content management system.

2.2 Background

The GoodNEWS (Genes, Nutrition, Exercise, Wellness and Spirituality Trial) is a Healthful Lifestyle Enhancement Program designed to provide a rationale, empowerment, and resources to help people to improve their own healthful lives and the lives of others in their living contexts or settings. The GoodNEWS Program builds on evidence-based holistic health and wellness principles, mechanisms, processes, and expected outcomes. The rich literature has shown that chronic diseases (e.g. cardiovascular, diabetes, cancer, obesity, and hypertension) can be prevented or reversed by modifying or enhancing a way to live life or lifestyles, and the CDC documents 85% of chronic diseases are preventable. The GoodNEWS program has served primarily underserved or vulnerable populations at risk of diseases or with diseases. The program has been developed and expanded by two professionals from public health and medical school (professors) while working with community leaders, faith based organizations, health care professionals, health organizations, etc. through a community-based participatory research strategy. The GoodNEWS Program's objectives are to: 1) improve individuals' knowledge, beliefs, values, attitudes, and behaviors in seven dimensions of health/wellness (spiritual, mental, intellectual, physical, social, environmental, and occupational); 2) modify disease risk factors and decrease disease prevalence through promoting healthful lifestyle practices; and 3) increase the capacity of communities to support community-based health promotion and disease prevention activities. The program is specifically designed to address the health needs of individuals and families living in high-risk communities, by preventing, reducing, and managing chronic disease. Technology available today enables communication of this nature.

The plan is to develop a mobile application on Android and iOS devices that will enable the leaders of the GoodNEWS program to get the message to people. The app will allow them to conduct surveys to see how people are doing and what improvements the City of Fort Worth can make to enhance the living experience of the people. The app will also allow the leaders to push updates out to everyone who has the app.

3. Overall Description

3.1 Project Perspective

GoodNEWS Fort Worth is an ongoing project lead by the University of North Texas Health Science Center and Fort Worth community leaders. Currently, the GoodNEWS project surveys and analysis are done on pen and paper. This work is time consuming and they cannot reach out to as many people as they want. This project, GoodNEWS Fort Worth, with the help of the HealthyFROGS team aims to enhance their existing project with entry into smartphone technology.

The HealthyFROGS team, in collaboration with the GoodNEWS team, is developing a system which will allow a user to download an app, take surveys and assessments, and track their progress toward a healthier lifestyle. User data will be analyzed and sent to GoodNEWS staff to aid the citizens of Fort Worth in living a better lifestyle.

Currently, there are apps which allow users to track certain aspects of their lifestyle. For example, Loselt allows users to track their caloric intake so the user can monitor their eating habits. RunKeeper allows users to track their exercise by using the GPS in the phone to track how far the user has walked, ran, biked, and more. However, there is more to healthy living than eating habits and exercise, and that is what the GoodNEWS Fort Worth project is trying to target.

3.2 User Requirements

The GoodNEWS Fort Worth project is a system which shall promote healthy living in Fort Worth communities through a multiplatform mobile application made available to the public. The mobile application will run on Android and iOS devices. In addition, a content management system will allow GoodNEWS team members to maintain the resources made available through the mobile application. Through this CMS, the GoodNEWS team member can conduct surveys of users, post new content, and view reports on user activity.

3.3 User Characteristics

The GoodNEWS Fort Worth mobile application is to be used by two categories of users. The first is an individual in the community looking to assess, track, and improve their lifestyle. The second is a community leader who has partnered with GoodNEWS to promote healthy living where they hold influence. These users will use the mobile application to participate in surveys specific to the event or seminar they are attending.

The GoodNEWS Fort Worth content management system shall be used by members of the GoodNEWS team. These users manage content, collect user data, and run reports on survey/poll results.

3.4 Constraints

3.4.1 Time

The GoodNEWS Fort Worth project is to be completed within the 2012-2013 academic year, and shall be finished by May 2013. All HealthyFROGS team members are full-time students and hold part-time employment. Because of this, team members will not be able to dedicate full-time attention to the project.

3.4.2 Budget

The resources required during development, including but not limited to workstations, the Brazos server, and software, shall be provided by TCU. See the Resource Specifications section of the Project Plan for an exhaustive list of required resources. Following the delivery of the product, maintenance of the system shall be the responsibility of the GoodNEWS team. Resources which fall in this category are the developer accounts for iOS and Android required for publishing applications, hosting for the content management system and domain name registration for the content management system.

3.5 Operating Environment

The GoodNEWS Fort Worth mobile application will target Android (versions 4.1.1 and above) and iOS (versions 6 and above), and will be distributed using the app marketplace for each platform.

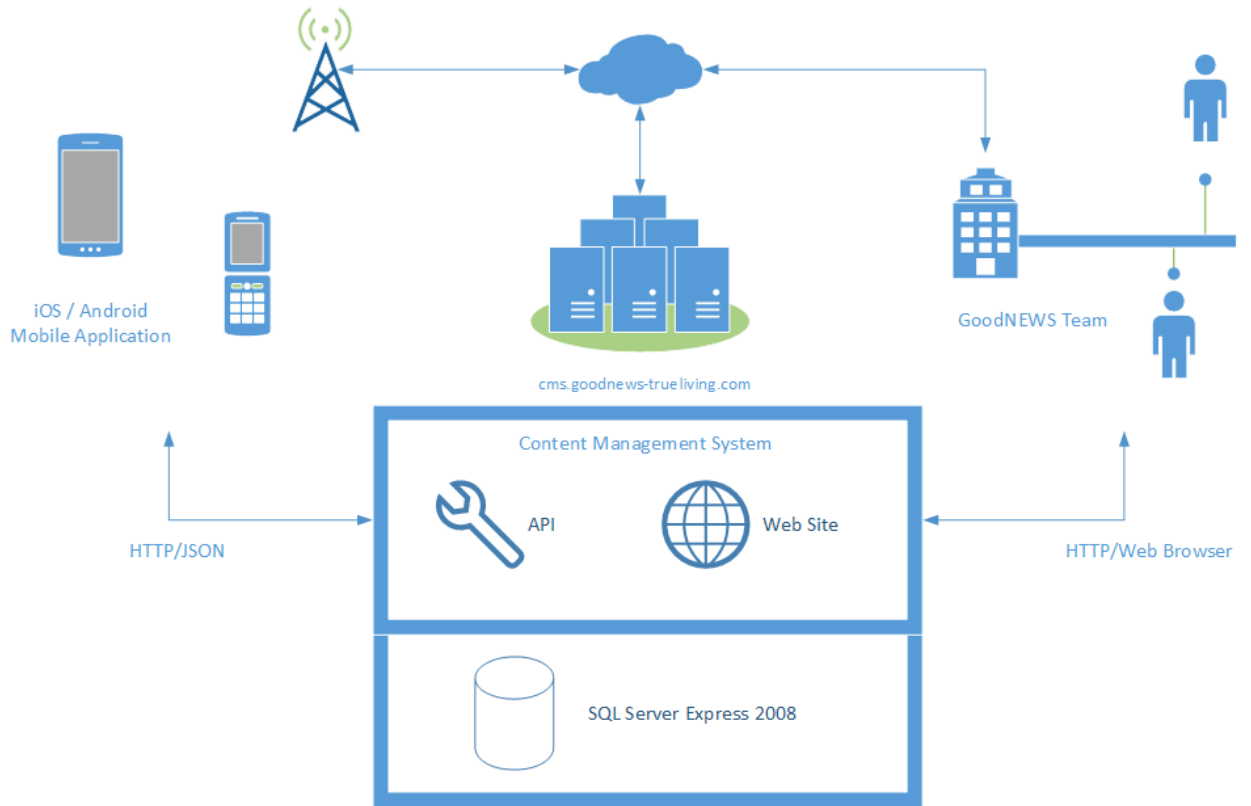
The content management system and database will target the .NET Framework Version 4, and shall run on a publicly accessible workstation running Microsoft Windows Server 2008 R2, Microsoft Internet Information Services, and Microsoft SQL Server Express 2008.

3.6 Assumptions and Dependencies

The GoodNEWS Fort Worth system relies on the following:

- Workstation running Microsoft Server 2008 R2, Microsoft SQL Server Express 2008, and Microsoft Internet Information Services.
- Staff to maintain content through content management system.
- Google and Apple app marketplaces.

4. System Architecture



5. External Interface Requirements

5.1 User Interfaces

5.1.1 iOS

The user interface for the iOS devices will be designed to show all of the application's potential functionality on one screen of the application. The interface will be intuitive and similar to most standard health applications.

5.1.2 Android

The user interface for the android devices will be as similar to the iOS interfaces as possible to avoid any confusion between platforms. The interface will allow for the main functionality of the application to be accessed from the main screen.

5.1.2 Content Management System

The content management system(CMS) interface will allow for the GoodNEWS team to modify and update the content of the GoodNEWS Fort Worth application. The interface will allow for them to log in securely, push updates, analyze surveys, and modify the app as necessary. This interface will imitate the interfaces of similar web applications so as to be familiar and intuitive for the GoodNEWS team to use. The CMS will expose an API.

5.2 Hardware Interfaces

5.2.1 Brazos Server

The Brazos server is located in Dr. Payne's office in the TCU Tucker Technology building. It uses Windows Server 2008. This server will be used during initial parts of the development process. The database and CMS will be transferred to a server owned by the GoodNEWS team as soon as possible during the development process to avoid migration issues.

5.3 Software Interfaces

5.3.1 Database

Database access will limited to the CMS.

5.3.2 GoodNEWS Application

The GoodNEWS application will communicate with the Database through the exposed API of the CMS . It will reflect changes made by the GoodNEWS team through the Content Management System.

5.3.3 Content Management System

The Content Management System will update content for the GoodNEWS Fort Worth project.

6. Functional Requirements

6.1 General Requirements (GEN)

GEN 1

The Application will deliver content to its users about the GoodNEWS program.

GEN 2

The Application will serve as a mechanism for surveying users.

GEN 3

The Application will allow users to track their personal lifestyle habits and obtain health resources based upon the given information.

GEN 4

Application administrators will be able to view and modify system data through the browser driven content management system.

6.2 Content Management System (CMS)

CMS 1

The CMS shall support all modern browsers.

CMS 2

Access to the CMS shall require user login.

CMS 2.1

The initial window shall contain a login prompt with two fields, one for "User Name" and one for "Password". Password shall be a secret field, which will not display what the user types.

CMS 3

The user shall be able to access and modify content related to the GoodNEWS application.

CMS 3.1

The user shall be able to access and modify the database contents to deliver new content.

CMS 3.2

The user shall be able to post new content, including surveys for application users to complete.

CMS 4

Modification to the content will be synced automatically, and modification of multiple values will be included.

CMS 5

The user shall be able to log out of the system once changes are made.

CMS 6

A record shall be kept of all interaction with the CMS.

CMS 7

GoodNEWS will receive weekly and monthly averages of health assessment scores.

6.3 Database (DB)

DB 1

The SQL Server Express database shall store the information related to the GoodNEWS content.

DB 1.1

The database shall store information related to surveys of users.

DB 1.2

The database shall store news and resources.

DB 2

The database shall be accessed and modified via the CMS.

DB 3

Modifications will be synced automatically to the Application from the CMS (see CMS 4)

6.4 User Admin (CMS)

UA 1

Administrators shall be able to log in and change user privileges and roles.

UA 2

Administrators shall be able to create new users.

UA 3

Administrators shall be able to view and modify any and all data pertinent to the GoodNEWS Application.

6.5 Mobile Application (MA)

MA 1

The mobile application shall provide the ability to create user accounts.

MA 2

The user must be successfully logged in in order to utilize the “Health Assessment”, “Community Vote and Poll”, and “Track and Progress” sections.

MA 3

The application will provide a “Health Assessment” section. The health assessment will be a baseline assessment to give the user a starting point for improving their lifestyle. This assessment will be taken immediately following user account creation, and may be taken later to reestablish baseline evaluations.

MA 4

The Application will provide a “Track and Progress” section. This section shall allow the user to take daily assessments similar to the ones in the “Self-Assessment” section about their current daily progress. It will also allow them to view their progress over time on a line graph.

MA 5

The Application will provide an “Education Resources” section. This section will include links to published articles, documents, and other resources regarding why and how to improve your lifestyle.

MA 6

The Application will provide a “Fort Worth Resources” section. This section will provide links of resources to the user to give them information about places in Fort Worth where they can get better lifestyle options, like healthy places to eat, places to go in the city to exercise, and more. Also, the app will include businesses’ hours, and allow the built in maps applications to navigate the user there.

MA 7

The Application will provide a “Community Vote and Poll” section. This assessment will be an assessment taken by users when the GoodNEWS leaders want to take a vote from users on how aspects of life are going in Fort Worth, and what the users think need to be added. Polls specific to GoodNEWS events and seminars will also be made available through this section.

MA 8

The application will provide a GoodNEWS Overview button which will be prominently displayed in the app menu that provides an overview of the GoodNEWS Program.

MA 9

The application will provide the ability to log into the GoodNEWS Application.

MA 10

The application will provide the ability to create user accounts by obtaining the following personal information:

- Mandatory
 - Email
 - Password
 - Only a password hash will be stored.

- Optional
 - Gender
 - Education
 - Income Range
 - Ethnic Group
 - Age

MA 11

The Users will receive email notifications if they have signed up for a health program supported by GoodNEWS. These notifications will encourage users to take daily, weekly, or monthly assessments and polls (when they are available).

MA 12

The “Health Assessment,” “Community Vote and Poll,” and the “Track and Progress” tabs will consist of the following question types:

- Yes and No
- Numerical Scale (1 – 5, 1 – 10, etc.)
- Qualitative Scale (Never – Often, Strongly Agree – Strongly Disagree, etc.)
- Multiple Choice
- A letter grade evaluation will be given.

7. Non-Functional Requirements

7.1 Product Requirements

PR 1

The mobile application shall not exceed the limited resources available on targeted devices.

PR 2

The content management system shall be accessible from modern versions of popular web browsers.

PR 3

The mobile application shall support Android 4.1.1 and above.

PR 4

The mobile application shall support iOS 6.0 and above.

7.2 Organizational Requirements

OR 1

The mobile application shall be designed to be consistent with the branding of UNT and GoodNEWS.

OR 2

Due to the nature of the user information being acquired, HealthyFROGS will not be subject to any laws regarding the storing of personal data.

8. Glossary of Terms

Android – a mobile operating system developed by Google. Android is a targeted operating system for the GoodNEWS Fort Worth mobile application.

CMS – Content Management System

HealthyFROGS – the team name for the 2012-2013 senior design team responsible for the GoodNEWS Fort Worth project

iOS – a mobile operating system developed by Apple. iOS is a targeted operating system for the GoodNEWS Fort Worth mobile application.

GoodNEWS – part of the TPI, a program which works to reduce chronic disease and improve quality of life for Dallas and Fort Worth communities through educating individuals and community leaders on preventative medicine

GoodNEWS Fort Worth – the name of the system to be developed by HealthyFROGS for GoodNEWS as a senior design project for the 2012-2013 academic year

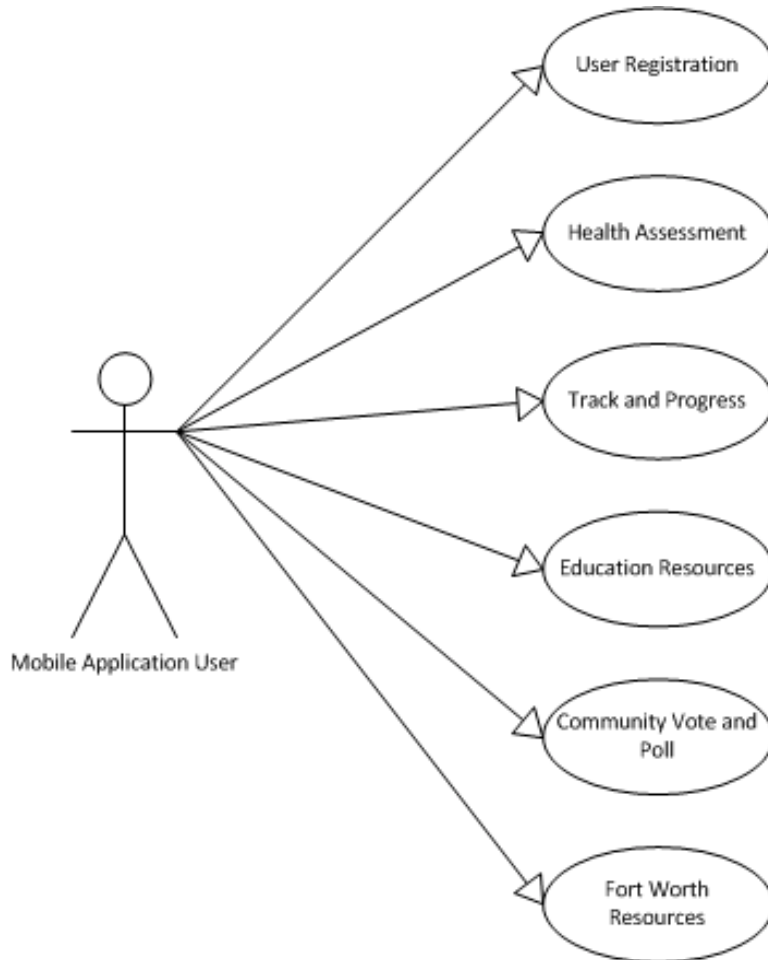
TCU – Texas Christian University

TPI – Texas Prevention Institute, part of UNTHSC

UNT – University of North Texas

UNTHSC – University of North Texas Health Science Center

Appendix A. Use Case Models



User Registration	Description
Actors	User
General Goals	For the user to create an account within the GoodNEWS Fort Worth system so that they can log in and use the app.
Pre-Conditions	The user must have the app installed on their mobile device.
Triggers	The User will activate the app for the first time.
Course of Events	<ol style="list-style-type: none">1. The user is asked to make a GoodNEWS Fort Worth account.2. The user account information is uploaded to the database.3. The user will be logged into the app.
Alternate Paths	If no connection to the database is present, an error message will be displayed.
Post Condition	The user will be prompted to take a health assessment screen, and the health assessment section will be displayed.

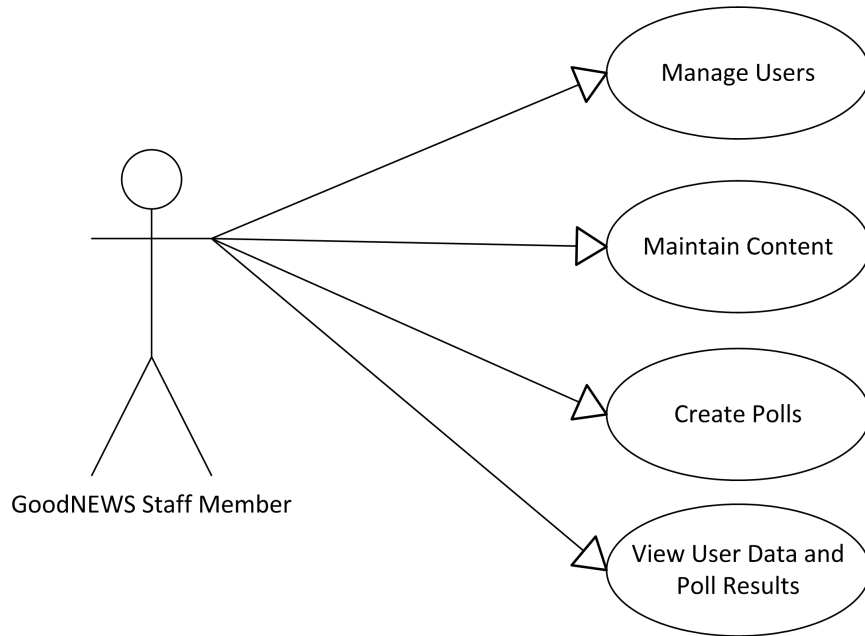
Health Assessment	Description
Actors	User
General Goals	To determine the user's health status and need and create a health 'score' based on analysis of the health assessment.
Pre-Conditions	The user must be logged in.
Triggers	<ul style="list-style-type: none">a) The user will finish creating an account and be prompted to take their first health assessment.b) The user selects the health assessment button from the main menu to reestablish a baseline assessment.
Course of Events	<ul style="list-style-type: none">1. The user is presented with a series of questions to answer.2. The assessment is graded on the local device.3. The health 'score' will be displayed to the user and uploaded to the database.
Alternate Paths	If no connection to the database is available, an error message will be displayed.
Post Condition	The user is informed of their score and then they are taken to the main screen.

Track and Progress	Description
Actors	User
General Goals	To keep track of the user's daily health information.
Pre-Conditions	The user must have the app and be logged in.
Triggers	The user will select the Health Tracker button from the main menu.
Course of Events	<ol style="list-style-type: none">1. The user is presented with a series of questions to answer.2. The daily assessment shall be graded on the local device.3. The app will upload the assessment score to the database.4. The application will display a line graph showing assessment results over time.
Alternate Paths	If no connection to the database is present, an error message will be displayed
Post Condition	Once the user is finished reviewing the presented, they will return to the main menu.

Education Resources	Description
Actors	User
General Goals	To provide health resources to the user.
Pre-Conditions	The user must have the app and be logged in.
Triggers	The user will click the Health Resources button.
Course of Events	<ol style="list-style-type: none"><li data-bbox="813 810 1451 877">1. The user will be presented with a list of categories of resources.<li data-bbox="813 898 1451 966">2. Following selection of a category, the user will be presented with a list of resources.<li data-bbox="813 987 1451 1054">3. Following selection of a resource, the user will be directed to the resource in a new application.
Alternate Paths	Resources will be displayed in varying external applications based on the type of resource. For example, web sites will be opened with the mobile device's default web browser, a PDF resource will be opened with the mobile device's default PDF handler, etc.
Post Condition	If the user selects a resource they will be taken to the appropriate application. Otherwise they can exit to the main menu.

Community Vote and Poll	Description
Actors	User
General Goals	To give the GoodNEWS team a way to determine what is important to the community in relation to the seven dimensions of health.
Pre-Conditions	The user must have the app and be logged in.
Triggers	The user will select the Community Voting Poll button from the main menu.
Course of Events	<ol style="list-style-type: none">1. The user is presented with a list of available polls.2. Upon selecting a poll, the user will be presented a series of poll questions to answer.3. Their answers are uploaded to the database.
Alternate Paths	There are no alternate paths.
Post Condition	The user will be returned to the main page.

Fort Worth Resources	Description
Actors	User
General Goals	To give the user access to local Fort Worth Resources.
Pre-Conditions	The user must have the app and be logged in.
Triggers	The user will select the Fort Worth Resources button from the main menu.
Course of Events	<ol style="list-style-type: none">1. The user will be presented with a list of categories of resources.2. Following selection of a category, the user will be presented with a list of resources.3. Following selection of a resource, the user will be presented with the location, business hours, web site, and description of the resource.
Alternate Paths	There are no alternate paths.
Post Condition	<p>If the user selects the location information of a resource, they will be directed to the mobile device's default mapping application.</p> <p>If the user selects the contact information of a resource, they will be directed to the phone application of the mobile device.</p> <p>Otherwise, the user can return to the main menu.</p>



Manage Users	Description
Actors	GoodNEWS Staff Member
General Goals	To enable the user to create, remove, and modify user accounts associated with the GoodNEWS Fort Worth system.
Pre-Conditions	The user must be logged into the content management system.
Triggers	From the content management system home page, the user will click a link to navigate the user management page.
Course of Events	<ol style="list-style-type: none">1. The user will be presented with a list of user accounts.2. The user shall select an action (create, remove, or modify) for a particular user account.3. The user supplies necessary information based on the action being done (see alternate paths for possibilities).4. The user submits the user account change.
Alternate Paths	<p>Path may vary based on the action being performed on a user account.</p> <p>If a new user account is being created, the user must supply all information to be associated with the new user account.</p> <p>If a user account is being modified, the user will modify information in a form populated with user data.</p> <p>If a user account is being deleted, the user must confirm the delete.</p>
Post Condition	The modification made to the user account will be effective throughout the GoodNEWS Fort Worth system.

Maintain Content	Description
Actors	GoodNEWS Staff Member
General Goals	To allow the user to manage content to be distributed through the mobile application. Content includes questions to be asked in the “Self-Assessment” and “Track and Progress” sections. In addition, resources made available through the “Education Resources” and “Fort Worth Resources” sections will be managed.
Pre-Conditions	The user must be logged into the content management system.
Triggers	From the content management system home page, the user will click a link to navigate to the section to be updated.
Course of Events	<ol style="list-style-type: none">1. The user shall update the content through the web interface.2. The user shall submit the changes to be made.3. The exposed API will be used to update the database to reflect these changes.
Alternate Paths	The path may vary based on the section being updated.
Post Condition	The user shall be returned to the main page.

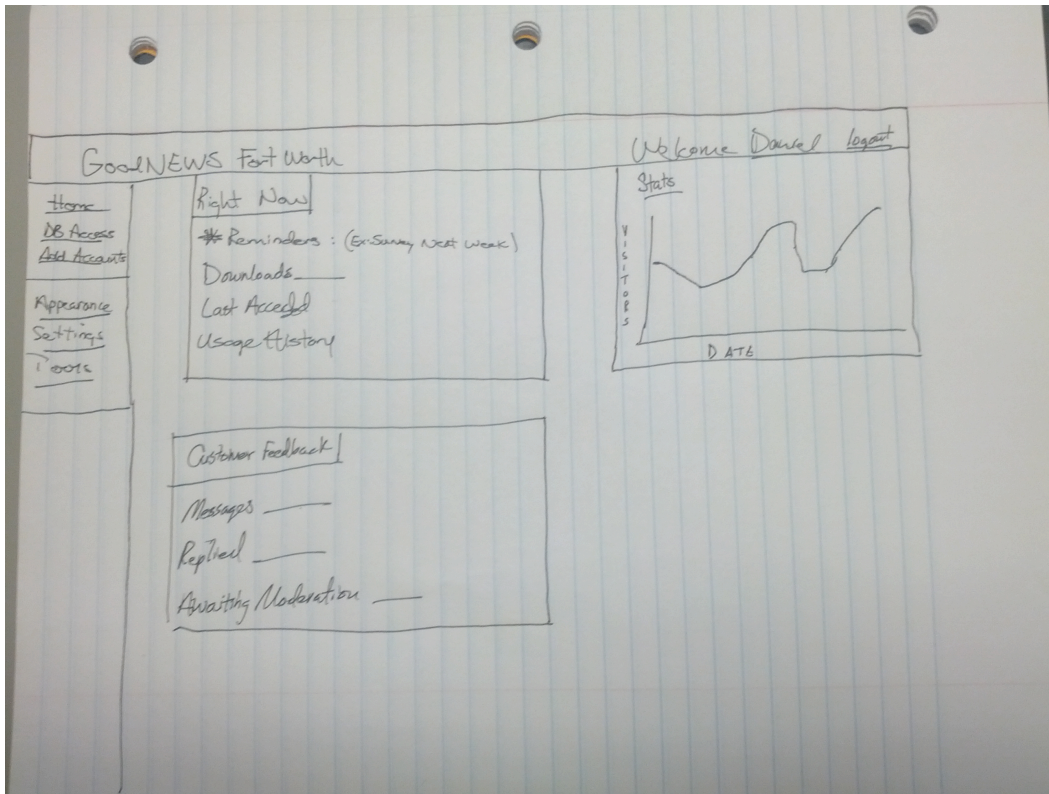
Create Polls	Description
Actors	GoodNEWS Staff Member
General Goals	To allow the staff member to create polls to be made available to users of the mobile application.
Pre-Conditions	The user must be logged into the content management system.
Triggers	From the content management system home page, the user will click a link to navigate to the polling section.
Course of Events	<ol style="list-style-type: none">1. The user will name the poll.2. The user will specify whether the poll is made available to the entire community or limited to attendees of a specific event or seminar.3. The user will enter a series of questions and responses to be included in the poll.4. The user will submit the poll.5. The CMS will update the database to include the new poll, which will be immediately available on the mobile applications.
Alternate Paths	There are no alternate paths.
Post Condition	The poll will be made available to users on the mobile application. The GoodNEWS staff member will be returned the main page.

View User Data and Poll Results	Description
Actors	GoodNEWS Staff Member
General Goals	To enable the GoodNEWS staff member to view data related to users, their activity, and poll results.
Pre-Conditions	The user must be logged in to the CMS.
Triggers	The user will navigate to the section he or she is interested in. For example, the "Health Assessment" section.
Course of Events	<ol style="list-style-type: none">1. The data will be visualized prominently with a graph or chart.2. The user can follow a link to see data behind the visualization.
Alternate Paths	The path can vary depending on the section the user chooses. Data for each section will be different, and therefore must be presented differently.
Post Condition	The user will be returned to the main page.

Appendix B. User Interface Prototype – CMS

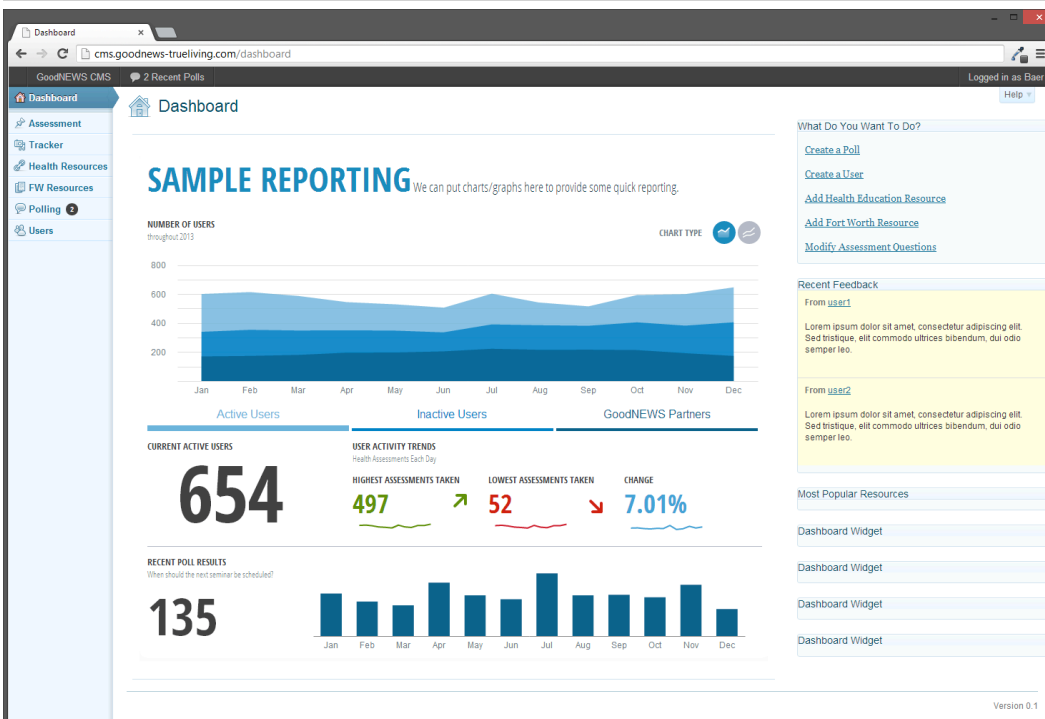
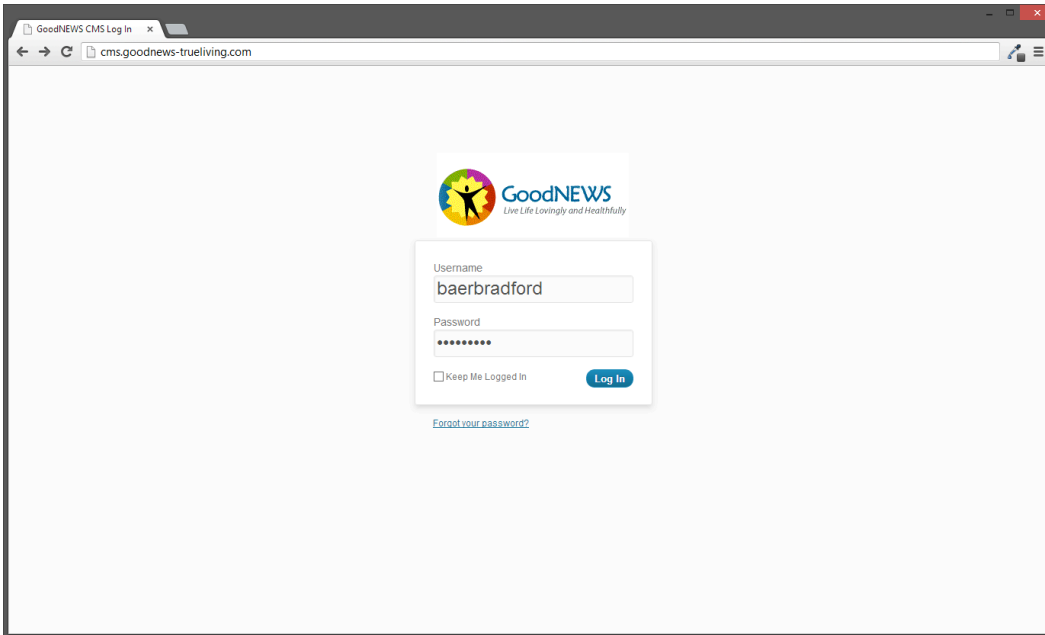
2012-09-27

Preliminary design idea from HealthyFROGS for the GoodNEWS Fort Worth Content Management System.



2012-11-15

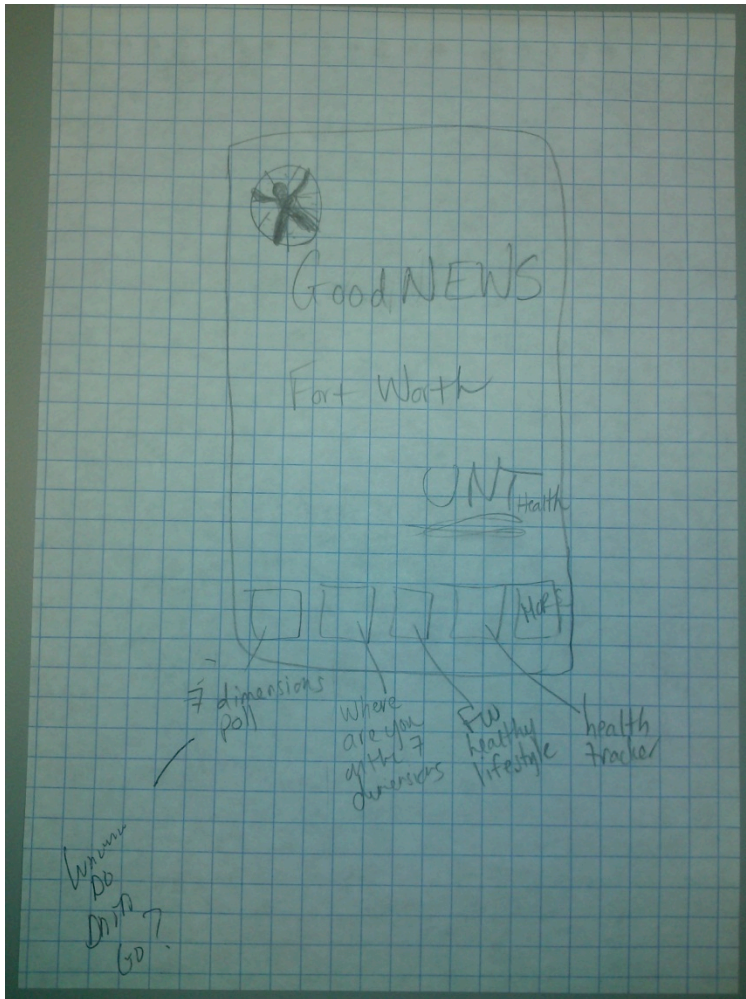
Mockups for CMS.



Appendix C. User Interface Prototype – iOS & Android

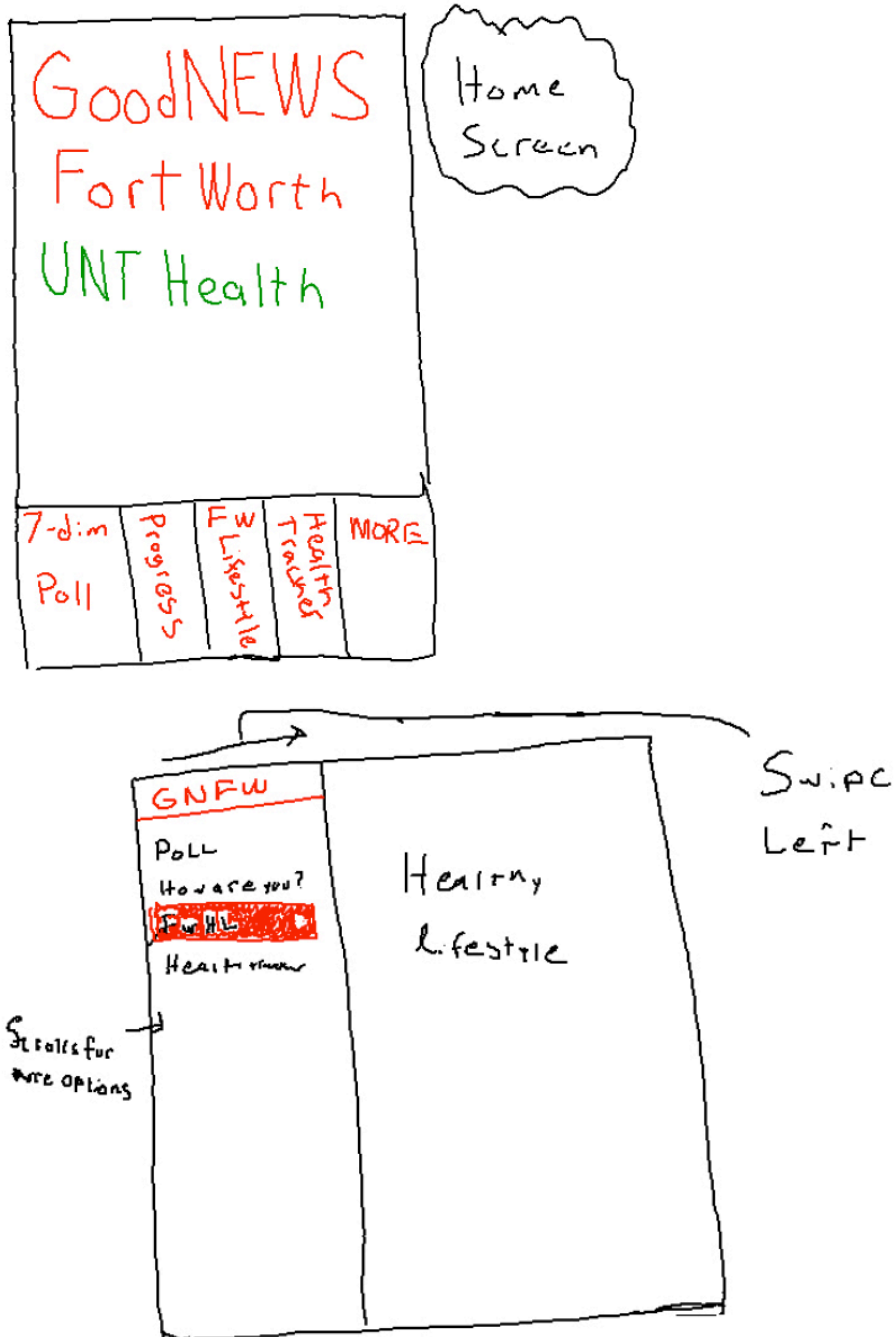
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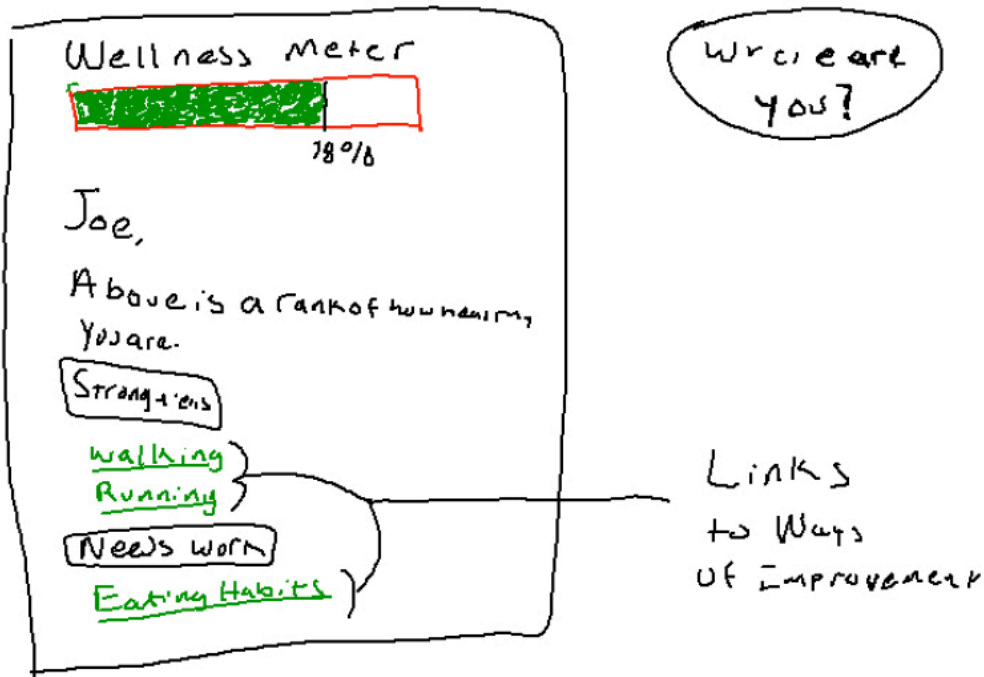
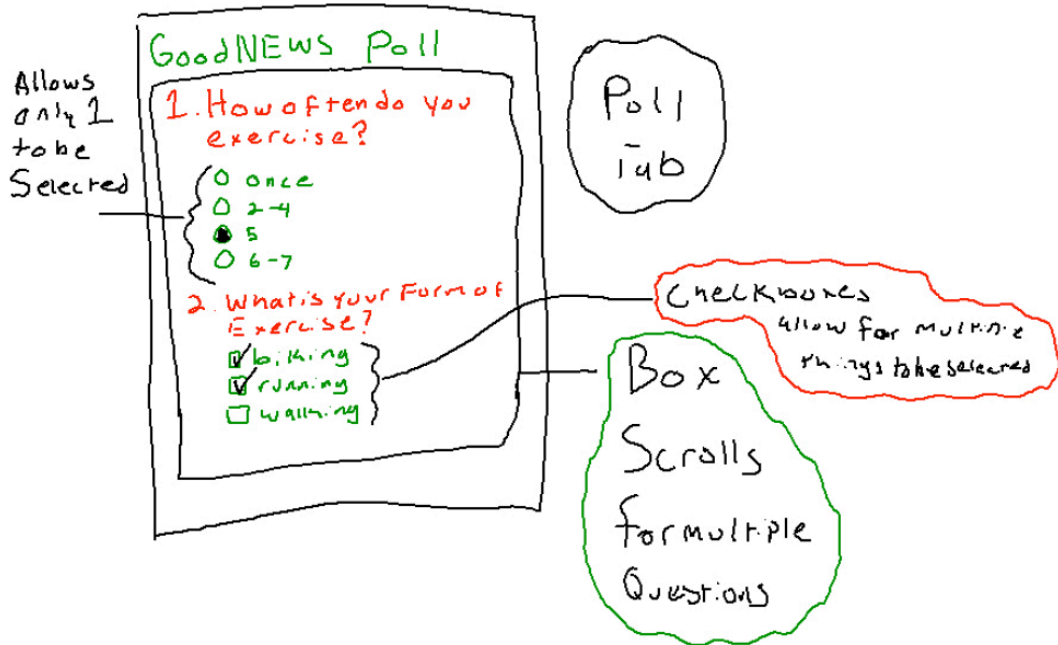
Preliminary design idea from GoodNEWS for GoodNEWS Fort Worth app interface.

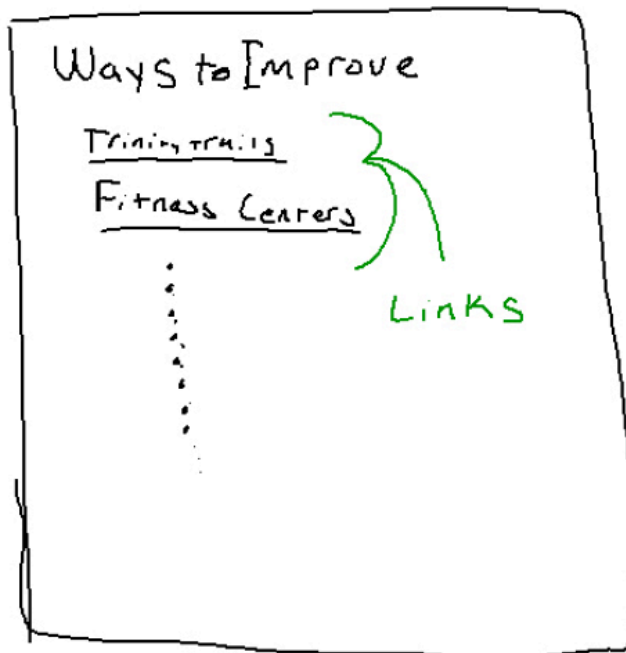


2012-10-14

UI Mock-ups presented to GoodNEWS and faculty advisor for feedback.







FW Healthy Lifestyle



2012-11-15

