CP476 Final Project Design Document

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Gluten Free Zone is a smart phone application that allows gluten free individuals to determine if a product contains gluten by scanning the products barcode. This project involved building the website for the product, as well as the web services and database system to integrate with the smart phone application

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Overview

Gluten Free Zone is a smart phone application that relies heavily on web services and a database to provide full function to the end user. For this project we focused on building the website and the web services associated with the application. The websites main responsibilities include showcasing the products value proposition, allow for account creation, allowing administrators to manage the products database, and providing product analytics to administrators. This document will describe each feature of the website and web services and explain how they are used.

How to Use It

Our project can be found on hopper at http://hopper.wlu.ca/~bull6280/gfz/index.php

Without logging into the website there 4 pages available to the user, these pages are titled home, how It works, our team, and contact us. The pages are not loaded in a traditional in the sense that the page functions more like a web application rather than a series of links. jQuery is used extensively throughout the project in order to give it a very fluid and modern feel. That being said all of the pages within the website are loaded using Ajax and so there is no actual navigation, the only content that changes is the content that needs to be swapped within the page.

To gain access to the two secured pages you need to be logged in as an administrator. Administrators have access to the products page, which allows users to manage the products stored in the database quickly and easily. They also have access to the analytics page which provides information about the usage of the app itself. You can log into the website using the credentials found below:

Email address: test@test.com

Password: test

Technologies

This project uses a variety of technologies to accomplish tasks. The backend system is based on a MySQL database hosted on the hopper server. To interface the database we use PHP for all of the web services and for any database dependent pages in the website. PHP provides functionality for easy database access and also works very well with Ajax and jQuery to make the entire web application run smoothly. For the front end all of the pages are coded in HTML 5 and use CSS3 to accomplish styling. For front end manipulation jQuery is used as well as some additional plugins such as ajaxForm, which allows for a standard HTML form to be used with Ajax and provides a callback to obtain the servers response. Project Features.

This project was a joint project between CP469 iPhone Application Programming. This means that all of the web services and technologies needed to be compatible with objective-c and the iOS libraries used within the app. All of the web services are accessible through post request and return different types of data based on the type request they make.

For both projects GitHub was used for version control, you can access each project from the following links:

Internet Computing Project: https://github.com/jakebuller/GlutenFreeZone

iPhone Project: https://github.com/jakebuller/GFZApp

Project Features

Account Creation

This service allows users to create accounts for Gluten Free Zone (GFZ). The sign up form is located on the home page of the website and requires the users enter their email address, and a password, with optional data including first name, last name, and their reason for using the service. If any incorrect information is entered or missed in the create account form then a modal popup will be shown to the user informing them of the errors that need to be fixed in order to continue. Accounts can also be created through the application with a very similar form. Both sign up forms work with the GFZ database and create accounts with a user level of 1. User level 1 means that the user has access to the home, how it works, our team, and contact pages. Specific users can be made administrators by manually increasing the user level to 2. Administrators have access to 2 additional pages called products, and analytics. Upon creating an account a random verification code is created for each user and is supposed to be emailed to them. Upon discovering that hopper does not support emailing I disabled this feature however the code is still there to re enable it. The aim of this product is to be released on a dedicated server, which will support mailing and allow for full functionality.

User Login/Sessions

User sessions are stored in cookies so that user do not need to login when navigating to different pages. This information is used to determine what pages to show. The user's session is valid for 1 hour at which point they will need to log in again. This login process also works on the iPhone application and is needed to gain access to the application. Within the application the user's usage is tracked based on their account, this is where the real functionality of the accounts is involved. User passwords are encrypted using a sha1 hash to make them secure. Upon entering incorrect information a modal popup will be shown to the user informing them that the login information was incorrect.s

Contact Us

Contact us is a contact form used for customers to be able to contact the business with any issues/concerns about the product or any other general inquiries. This service is coded to work with an SMTP server through a PHP interface, however hopper does not support email functionality and so the version on hopper will not actually send the mail. The aim of this project is to move it to a dedicated server for the product release, at which point the mail functionality will be available.

Products

The products feature of GFZ is a restricted area only accessible to administrators. This page allows administrators to manage the products and their ingredients within the GFZ database. This product information is what is used by the iPhone application to determine a products safety. This page allows users to add new products, delete existing products, and edit products. Using Ajax allows this page to

run quickly and fluidly without refreshing to provide a good user experience. Multiple items can be selected from the table by holding control and clicking on the item. Active items are shown with a green highlight colour.

Analytics

The analytics page provides administrators with valuable analytical data about the products usage. The table is loaded with Ajax and can be refreshed using the refresh button located at the top right. The refresh also uses Ajax and uses a nice jQuery transition to make the table slide back in with the refreshed data. This data allows for administrators to track statistics from the app such as the number of active users or the number of scans with the last week.

Product Scanning

For the iPhone application to deliver results to the user a web service is used to check the contents of the requested product. The application makes a post request to the scan service; this service takes the users email address, and the products UPC. A query for the products ingredients is made, if the product is found then its ingredients are parsed (comma separated list) and checked against a list of gluten ingredients to determine if the product is safe or not. Once a result is found the scan time, user, upc and result are stored in the scans table for us in the applications history feature and for the analytics.

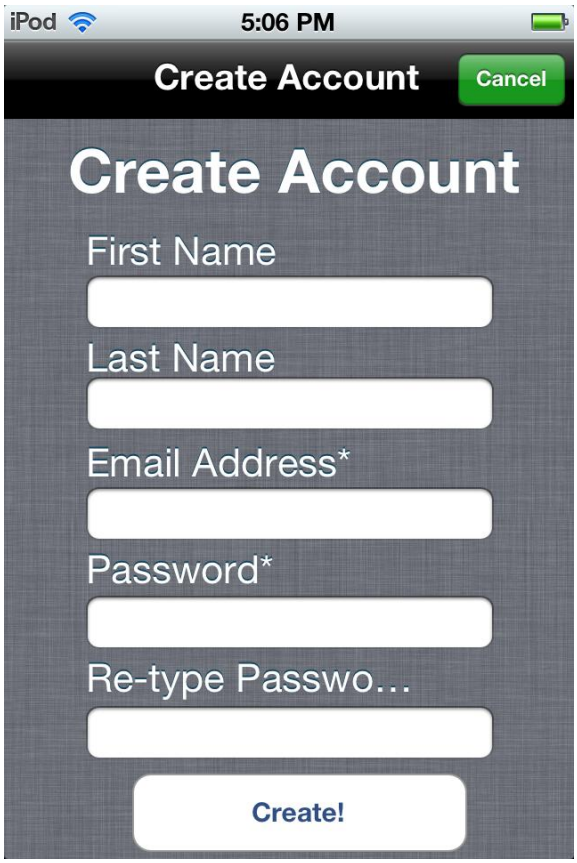
Scan History

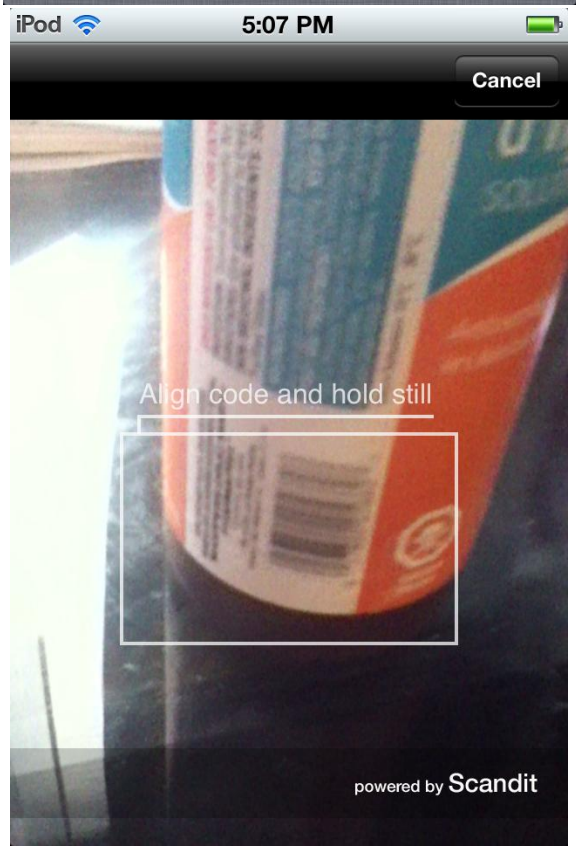
The scan history feature of the application is used to show the user items they have scanned and the result of those scans. To retrieve this data the application makes a request to the history service, the history service queries the database for the scan entries associated with that user. The results are then used to build a JSON string to send back to the device.

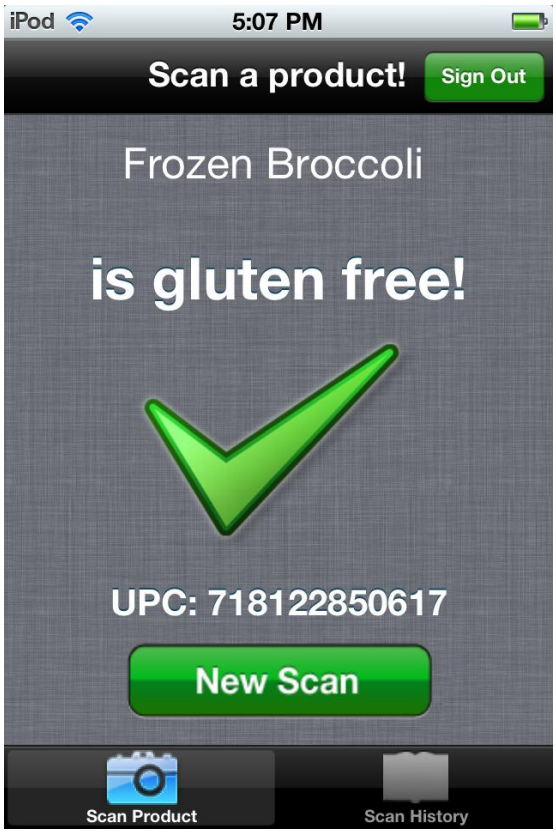
The iPhone App

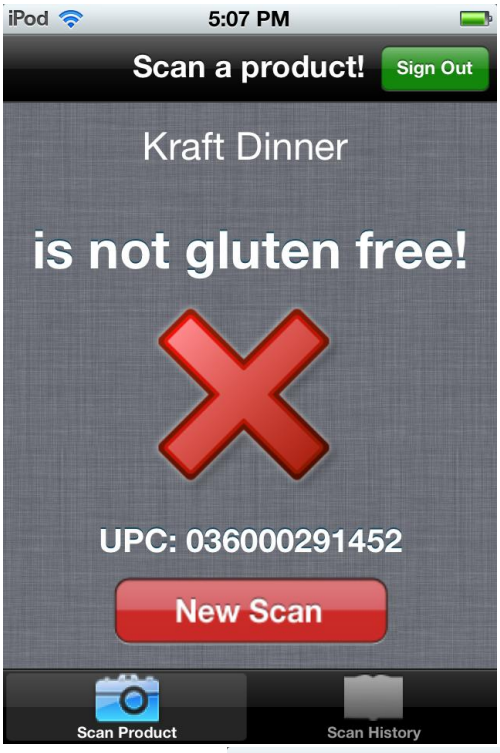
Since this is a duel project for the iPhone course we have built an iPhone application that integrates with the services described in this document. For a full understanding of the application a presentation will be given on Thursday April 11th, 2013 in BA 208 at 1:00pm. Screen shots of the application are provided below so you can get a glimpse of what the app looks like:

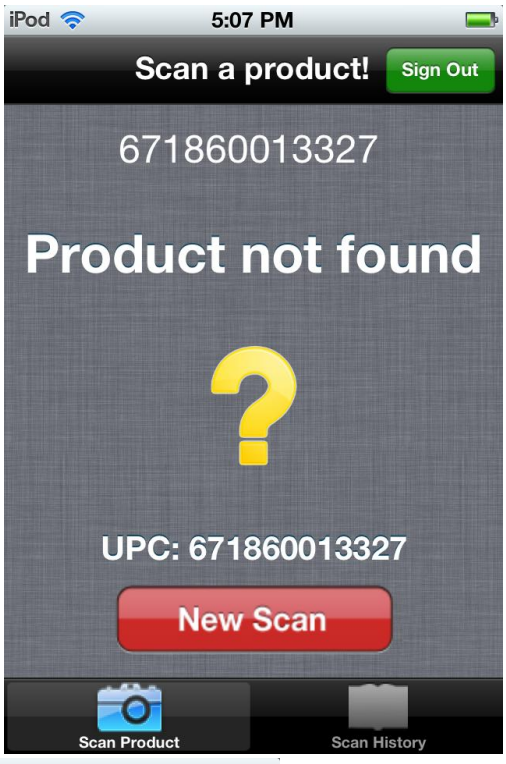

iPod
5:05 PM
Welcome to,
Gluten Free Zone
Please Sign In
Email Address:
Password:
Sign In
Create Account

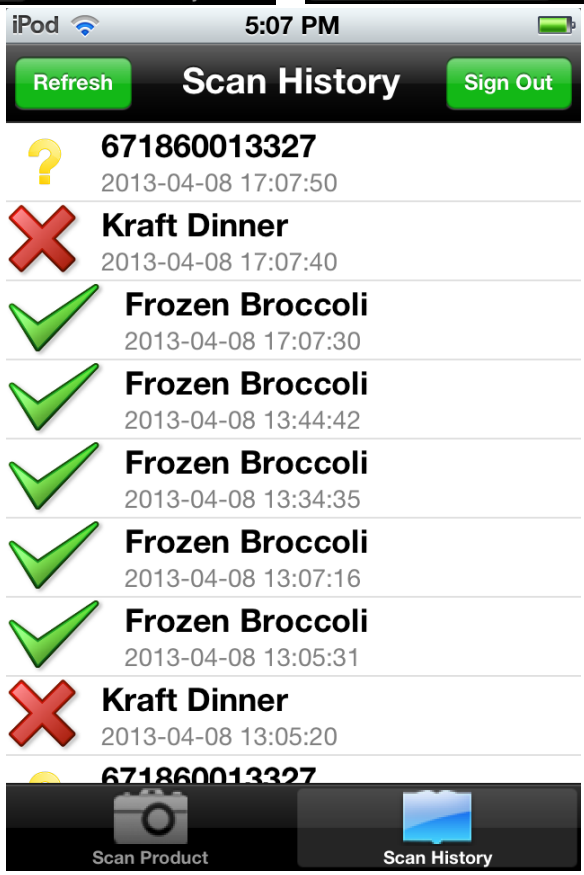

iPod
5:06 PM
Create Account
Cancel
Create Account
First Name
Last Name
Email Address*
Password*
Re-type Passwo…
Create!


iPod
5:07 PM
Cancel
Align code and hold still
powered by Scandit


iPod
5:07 PM
Scan a product!
Sign Out
Frozen Broccoli
is gluten free!
UPC: 718122850617
New Scan
Scan Product
Scan History


iPod
5:07 PM
Scan a product!
Sign Out
Kraft Dinner
is not gluten free!
UPC: 036000291452
New Scan
Scan Product
Scan History


iPod
5:07 PM
Scan a product!
Sign Out
671860013327
Product not found
UPC: 671860013327
New Scan
Scan Product
Scan History


iPod
5:07 PM
Refresh
Scan History
Sign Out
671860013327
2013-04-08 17:07:50
Kraft Dinner
2013-04-08 17:07:40
Frozen Broccoli
2013-04-08 17:07:30
Frozen Broccoli
2013-04-08 13:44:42
Frozen Broccoli
2013-04-08 13:34:35
Frozen Broccoli
2013-04-08 13:07:16
Frozen Broccoli
2013-04-08 13:05:31
Kraft Dinner
2013-04-08 13:05:20
Scan Product
Scan History