Team Innovation

CEN4010

Team Project Proposal and Description

September 18, 2015

## 1. Executive Summary

The purpose of our project is to develop a professional website/mobile app that will assist Meals on Wheels Palm Beach in delivering meals to clients throughout Palm Beach County. Managing a large delivery network with hundreds of volunteers and clients is a huge task. Someone needs to keep track of all the clients and volunteers and map out the entire delivery route for each delivery. Without the help of software, these tasks can take a lot of effort. Our project is called Meal Router. Meal Router will help automate those processes and make managing a network of delivery volunteers easy and efficient. In a general sense, the project is useful in two ways.

First, Meal Router will make managing a delivery network easier by automating the route planning process. Using Meal Router, an administrator will be able to quickly view and update records for locations on the delivery route(s), as well as records of volunteers and when they are available. Since those records will be stored on the IBM cloud, they are available anywhere, anytime, and they are always up to date. Meal Router will use those records to automatically generate efficient delivery routes that minimize the distances volunteers travel to visit all their destinations. Just like the records, the routes are stored on the cloud, so they are always available and up to date. Most importantly, efficient routes save valuable time and money.

Second, Meal Router will act like a personal assistant for volunteers on delivery routes. Volunteers can log into Meal Router to view and manage their volunteer schedule instantly. Using the internet connection on their smartphone, tablet, or computer, they can see their personal delivery route on a particular day. Meal Router will display routes on an interactive, visually appealing map and provide a list of directions for volunteers in sequential order. At each stop on their route, volunteers will be able to see and add important information about the clients they are visiting.

## 2 – Competitive Analysis

|  |  |  |
| --- | --- | --- |
|  | Meal Router | ServTracker |
| Meal Planning Services | **X** | **X** |
| GPS Mapping and Delivery Routes | **X** | **X** |
| Home Care Tracking | **X** | **X** |
| Volunteer Friendly UI | **X** |  |
| Cloud Client Database | **X** | **X** |
| Volunteer Scheduling | **X** |  |
| Online Website | **X** |  |
|  |  |  |

Meal Router is planned to have all the key features required in running the Meals on Wheels program. We plan on having on creating a more volunteer friendly interface. ServTracker is a windows based program and lacks the ability for the volunteers to update their scheduling remotely. Our product would allow a volunteer to login and update their schedule when they are available and allow them to view their routes from a website which would be accessible from their phone or computers.

## Section 3: Overview and scenarios

When volunteers wish to check personal schedules or current routes we seek to enable them via mobile interfaces: namely a web-presence or native mobile application. The proposed user interface should be as parsimonious as possible so that ambient technological skill will not interfere with user experience. In considering these platforms, we note it would be advantageous to use a mobile application because the routing algorithm can interface with Google Maps or other similar API so that routes can be easily navigated via cellular GPS.

A typical use case would be as follows: Meals on Wheels would first acquire an additional volunteer willing to provide support for their cause. The user may lack technical skills but presumably has access to technology, preferably a smart phone. The volunteer would then download and install the mobile application and sign up for an account [or use account-interfaced automata for registration]. The application must be intuitive and easy to follow. After being brought to the splash screen, the interface will be similar to a calendar or a task log providing the days and times that the volunteer has agreed to work. When the user selects a particular day, potential drop off locations will be displayed in a list or graphical format. Finally, the touch of a button will provide navigation instructions for optimal routing to access the drop locations. Once a meal is delivered, the volunteer will check off that location virtually and the GPS will automatically navigate the user to the next location.

## 4 - Initial list of high-level functional requirements

1. Login - There will be a login window at the beginning of the web application. Members in Meals on Wheels organization, new volunteers and customers are able to use their login credentials to sign in. New volunteers and customers will be able to sign up.
2. Schedule - Volunteers and customers are able to see the schedule of meal deliveries. In the schedule, names of the volunteers will be displayed associated with the times of delivery of the meals.
3. Instruction list - Instructions for each volunteer will be displayed. The instructions will include specific information on how to handle each delivery. The volunteer will know exactly what to do because the instruction list will display step by step points on how to proceed in the delivery of the meals.
4. Map - The map will show directions to the address of the customer for each food delivery. Volunteers will use the map to ensure that they are going to the correct location.

## 5 - List of non-functional requirements

1. Usability - User interface will be clear and easy to use. There will be limits to the use of flashy and distracting colors. Navigation will be clear from point A to point B.
2. Accessibility - Users will be able to access the application via web browser either from their desktop to mobile smart phone device.
3. Storage - Names of volunteers and their delivery times will be stored. Login credentials of users will be stored as well.
4. Performance - Fast and responsive web application.

## 6 - System Development Infrastructure

Development

* + -Meal Router is being developed using IBM Bluemix
  + -Source Control through GitHub and Jazz

Backend

* + -Server-side code written with the IBM SDK for Node.js
  + -Database: mongoDB

Website

* + -HTML/CSS
  + -Javascript
  + -Supported in latest versions of Chrome, Firefox, and Safari
  + -Maps and map data will be acquired/displayed using the Google Maps API

Mobile

* + UI Written in HTML/CSS
  + Javascript
  + Using the IBM Mobile Data SDK
  + Compiled using Apache Cordova
  + Supported in Android, iOS, and Windows Phone

## 7 - Team Members

Michael Dhoman - Scum Master

Patorn Pongsanit - Product Owner

Michael Brown – Developer

Paul Morris – Develop

## 8 - Deliverables

September 23 – Test Build of Website

October 9 – Website UI and Demo

October 16 – Database Construction

October 23 – Finalizing Website

November 6 – Route Planning and Mapping API

November 20 – Mobile Application