Software Design Specification

Restaurant Fast Lane Release 1

Revision 1.0

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Revision History

Version	Name	Reason For Changes	Date
1.0	*Joe DeLuca*	*Initial Revision*	*02/09/14*

Approved By

Approvals should be obtained for project manager, and all developers working on the project.

Name	Signature	Department	Date

1. Introduction

1.1 Purpose

The goal of this design is to detail the implementation of Restaurant Fast Lane fulfilling the Software Requirements Specification.

1.2 System Overview

The Restaurant Fast Lane is a family of applications which work together to provide a POS solution designed specifically for restaurants and mobile ordering. The menu data is managed from a website application which communicates with mobile device endpoints. The endpoints can be the kitchen staff applications or the any number of mobile phone or tablet customer applications. Ordering can also be done directly from the website menu and shopping cart as well.

1.3 Definitions

RFL – Restaurant Fast Lane.
POS – Point of Sale.
CMS – Content Management System.

2. Design Considerations

There are no issues which need to be addressed or resolved before attempting a design solution.

2.1 Assumptions

The website front end and backend will be the wordpress blog content management system which will run on a shared server linux environment provide by an external vendor.

2.2 General Constraints

- Internet access is required for all endpoints.
- Website will be wordpress content management system.
- POS functionality provided through wordpress plugin or theme api.
- Mobile applications will be designed for Android 4.0 and newer devices only.

2.3 Goals and Guidelines

The main goal of the design is to be as simple as possible. The design should follow the KISS principle ("Keep it simple stupid!"). The user should know exactly what to do next without the need to read any instructions. Any on screen instructions or prompt text should be as intuitive and simple as possible without

being so simple it is cryptic. The design of the application should follow the same principle and be very logical. It should follow established principles for shopping cart functionality on mobile and web application.

2.4   Risks and Volatile Areas

None have been identified.

3.   Architectural Strategies

The system is designed with simplicity in mind. RFL should be intuitive and simple to the each user of the system. Then mobile applications should present information in a way that looks very easy with minimal features.

- Wordpress CMS was chosen for:
  - the large community of users
  - ease of developing plugins and themes
  - out of the box administration of data
  - out of the box functionality for web services and rss feeds
- The web application does not use any external database functionality. All database functionality that the applications use is supplied by the wordpress api.
- The android customer application will receive an rss feed from the CMS. It will be stored on the android device so if an internet connection is lost the user can still browse the menu. If the menu is updated on the CMS, then the customer application will download a current version when they open the application.

4.   High Level Design

4.1   Conceptual View

The Wordpress CMS provides the menu categories and menu items to the front end website as well as to the Customer Mobile Application. When a customer purchases from the shopping cart, an order is created in the wordpress CMS. The Kitchen Staff Application recieves the Order from the CMS to display all the current orders. The Kitchen Staff Application is responsible for marking an order complete.

Figure - Conceptual View
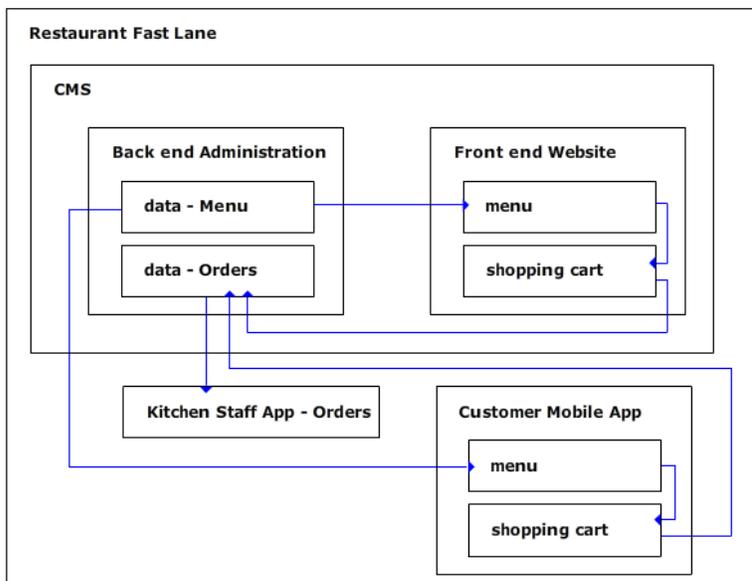
5.   Low Level Design

5.1   Wordpress Administration

Once the admin user logs into the wordpress CMS admin, the will have several navigation items which will help them administer categories, menu items, and orders. They will be called RFL Categories, RFL Menu Items, and RFL Orders. The wordpress CMS has an api for custom post types which has comes with well supported administration functionality for creating and managing them. RFL Categories, RFL Menu Items, and RFL Orders will each be a custom post type.

5.1.1 RFL Category Items

The RFL Category Items plugin will list all the the RFL Categories. The RFL Categories will represent menu categories like appetizers, entres, salads, beverages, and deserts, etc. The plugin gives the admin user the ability to create, read, update, and delete RFL Categories.

5.1.2 RFL Menu Items

The RFL Menu Items plugin will list all the the RFL Menu Items. The RFL Menu Items represents each individual menu item. The Menu Items is dependent upon an RFL Category Item. A RFL Menu Item must be a child to an RFL Category Item, The plugin gives the admin user the ability to create, read, update, and delete RFL Menu Items.

5.1.3 RFL Orders

The RFL Orders plugin will list all the the RFL Orders. The RFL Orders represents an order that was placed. A RFL Menu Item must be a child to an RFL Category Item, The plugin gives the admin user the ability to create, read, update, and delete RFL Menu Items.

5.2 Customer Mobile Application

Once the customer opens up the mobile application, it downloads the categories and menu via rss feed. The xml will be saved to the device and then the menu will be read from the device xml. This will ensure that if there is no internet connection the customer will still be able to operate the application and view the menu. To complete an order the mobile customer application must have an internet connection.

5.2.1 Get Menu Items and Categories

Gets the menu items and categories from the CMS as an XML rss feed. The xml is saved to the device and the saved version is what populates the menu.

5.2.2 Add Menu Item to Cart

Adds a menu item to the shopping cart.

5.2.3 Delete Menu Item from Cart

Removes a menu item from the shopping cart.

5.2.4 Update Quantity

Adding the same item to the shopping cart from the menu increments the quantity of items. It may also be updated from the cart.

5.2.5 Proceed to Checkout

The proceed to checkout button sends the customer to the payment processing gateway such as paypal. Paypal is not going to be implemented in the version so it will directly create an RFL Order within the CMS.

When an order is placed, it will calculate the estimated time of order completion time. So the app can display a count down timer. This order completion time will be taken from the estimated cook time of all the items in the order.

5.3   Kitchen Staff Application

Once the kitchen staff opens up the mobile application, it displays all the current orders in the system. The user can navigate to completed orders which are the orders completed within the past 4 hours. This allows for the kitchen to mark a completed order incomplete to put it back into the queue to be completed.

5.3.1   Get Orders

The kitchen staff application will be designed with a polling mechanism which will get orders every 10 seconds. The orders will be retrieved as an XML rss feed.

5.3.2   Current Orders Table View

The current orders table view will display all current orders in a table. Each row of the table describes one order. There is a view detail button and a mark complete button associated with each row.

5.3.3   Detail View

The detail view will display an individual detail of the order.

5.3.4   Mark Complete

The mark complete button will mark an order complete which moves it from the current orders list to the completed list. This can be done from the list view or from the detail view. It will notify the customer application that the order has been completed.

5.3.5   Completed Orders Table View

The completed orders table view will display all completed orders within the past 4 hours. This allows for the kitchen to mark a completed order incomplete to put it back into the queue to be completed. Each row of the table describes one completed order. There is a view detail button and a mark incomplete button associated with each row.

5.3.6   Mark InComplete

The mark incomplete button will mark an order incomplete which moves it from the completed orders list back to the current orders list. This allows the kitchen staff to control the issue of accidental marking complete. It will notify the customer application that the order is not complete yet and that it was marked complete by accident.

6.   User Interface Design

The RFL system has a user interface design specific to the application

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6.1   Wordpress Administration

Figure - Interfaces Wordpress Administration

RFL Categories   Add New

Title	Order	Date
☐		

RFL Menu Items   Add New

Title	Order	Price	Date
☐			

Edit RFL Categories   Add New

Title

Description

Publish

Update

Attributes

Order

Edit RFL Menu Items   Add New

Title

Description

Extra Attributes

Price

Publish

Update

Attributes

Order

RFL Orders   Add New

Title	Order	Price	Date
☐			

Edit RFL Orders   Add New

Title

Description

Extra Attributes

Price

Publish

Update

Attributes

Order

The RFL Categories, RFL Menu Items, and RFL Orders are all custom post types within the wordpress CMS so they each have the same look and feel of a standard wordpress plugin. Pressing on any of the custom post types will bring the admin user to a table which shows all of the items of that type. Selecting an item will take the admin user to a detail view where the post type can be updated.

6.2 Mobile Application for customer

Figure - Interfaces Mobile App Customer
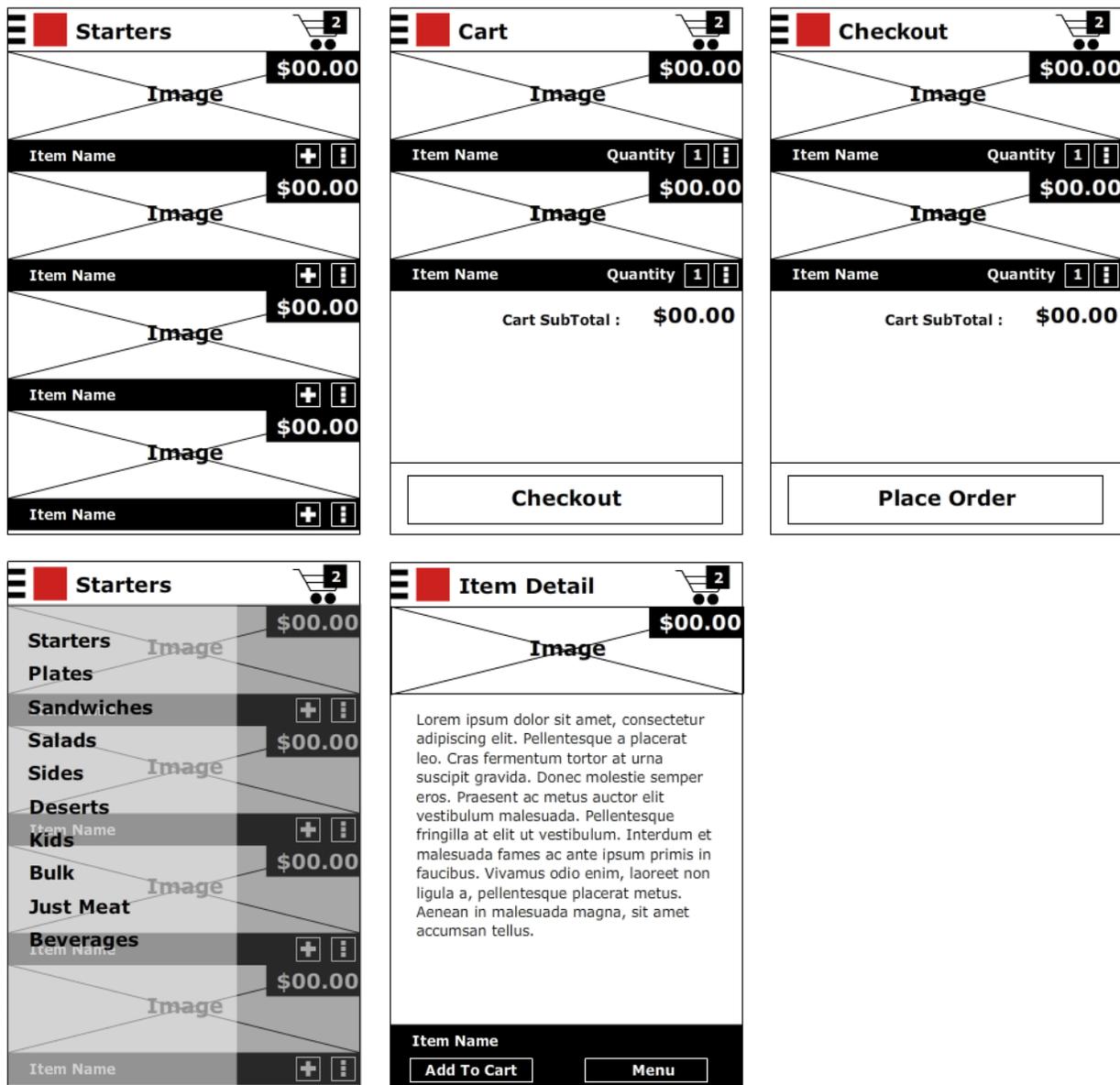
The mobile application for customers is essentially a menu and shopping cart. The main view of the application will be a list view that is the menu. Each list item will display the an image, name, cost,

an icon for adding item to cart, and an icon for a detail view. The detail view will show the image, a brief description of the item, the cost, an add to cart button, and back to menu button.
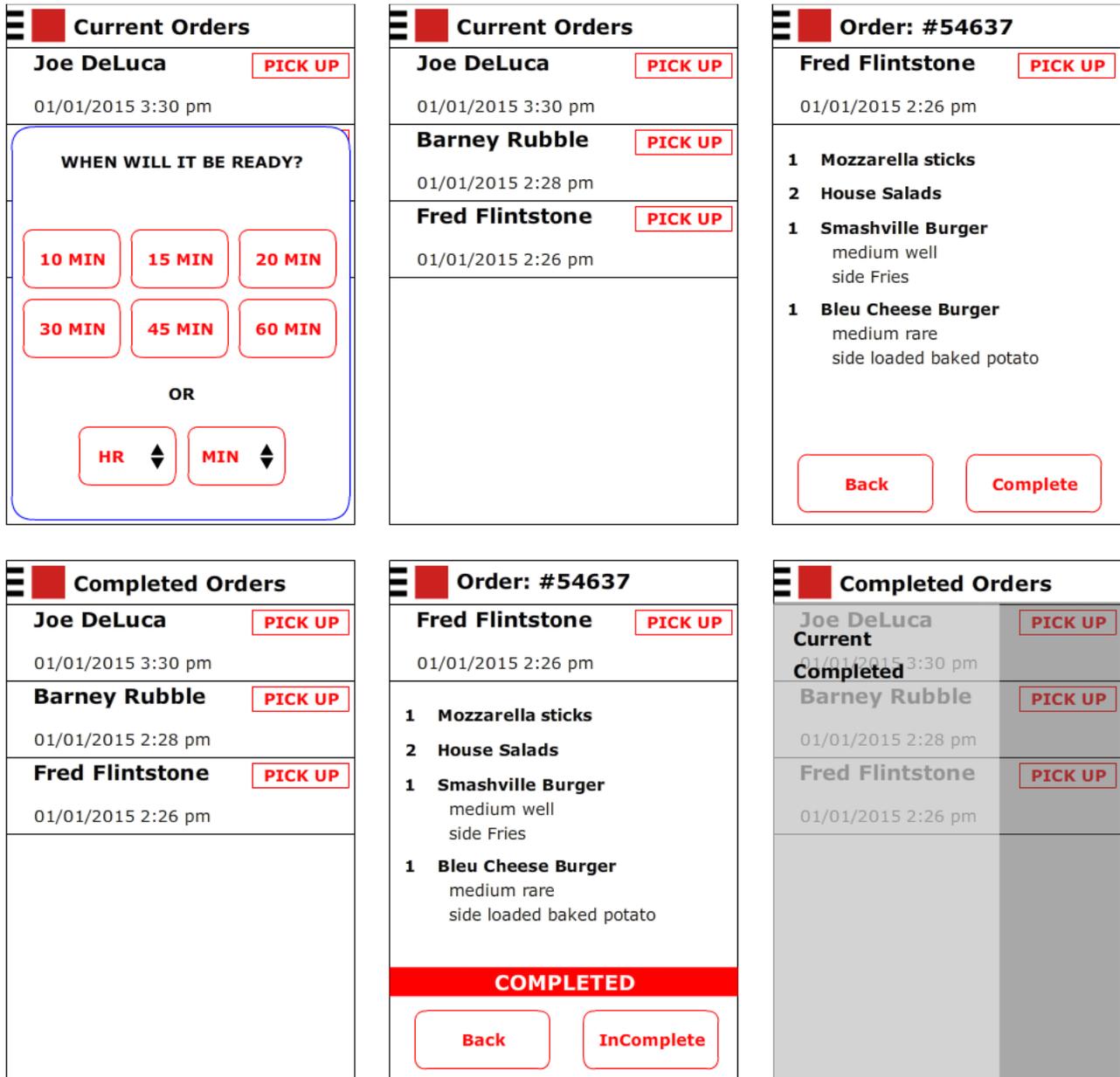
6.3   Mobile Application for Kitchen Staff

Current Orders	Current Orders	Order: #54637
Joe DeLuca PICK UP	**Joe DeLuca** PICK UP	**Fred Flintstone** PICK UP
01/01/2015 3:30 pm	01/01/2015 3:30 pm	01/01/2015 2:26 pm

WHEN WILL IT BE READY?

10 MIN   15 MIN   20 MIN

30 MIN   45 MIN   60 MIN

OR

HR ▲▼   MIN ▲▼

Barney Rubble PICK UP
01/01/2015 2:28 pm

Fred Flintstone PICK UP
01/01/2015 2:26 pm

1 Mozzarella sticks
2 House Salads
1 Smashville Burger
    medium well
    side Fries
1 Bleu Cheese Burger
    medium rare
    side loaded baked potato

Back   Complete

Completed Orders

Joe DeLuca PICK UP
01/01/2015 3:30 pm

Barney Rubble PICK UP
01/01/2015 2:28 pm

Fred Flintstone PICK UP
01/01/2015 2:26 pm

Order: #54637

Fred Flintstone PICK UP
01/01/2015 2:26 pm

1 Mozzarella sticks
2 House Salads
1 Smashville Burger
    medium well
    side Fries
1 Bleu Cheese Burger
    medium rare
    side loaded baked potato

COMPLETED

Back   InComplete

Completed Orders

Joe DeLuca PICK UP
Current
01/01/2015 3:30 pm
Completed

Barney Rubble PICK UP
01/01/2015 2:28 pm

Fred Flintstone PICK UP
01/01/2015 2:26 pm

The mobile kitchen staff application is designed for the window. When a new item enters the list, a popup will ask for the estimated time till complete. The default view will have a list of current orders. The kitchen user can press on an individual item in the list to view a detail view. The detail view gives the kitchen user the ability to go back to the current orders list or mark the order complete. The kitchen user can also press on an item in the completed orders list view to view a

detail of the completed order. On the detail page, they have the option to go back to the completed orders or mark the order incomplete. The kitchen user can navigate between current orders and completed orders.