SYSTEM REQUIREMENTS SPECIFICATION

for

PHI
(Promise House Inventory)

Prepared by
Group 3

January 25th, 2019

Table of Contents

1. Preface

The expected readership of this document is the employees of the Promise House and/or any layman that wants to use the PHI app. It expects people to know what database we make and the basic rule that lie therein. The purpose of this document is to list and prioritize all requirements set for the Otterbein Promise House. People will understand what we make and how the system works.

2. Introduction

We are designing an inventory system for the Otterbein Promise House. The clients have shown us a sample database that they would want us to keep in mind while working on PHI. The application will make a check in the database when the users scan the UPC barcode of the product. In the database, we will also create space for price and the quantity of the products. We want to make a ~~Java file~~ that connects with the server and gets the data from the database. Java also groups the UPC code into the server. Users can add and delete the data easily in the inventory. There wouldn't be a feature for the check out of the items from the pantry, since it is not a requirement for the client.

We will use UPC database to keep track of the inventory of the pantry in the Promise House since they only accept UPC products. For the GUI, we will design the interface. Users can easily find the data in the web server and modify the data conveniently. When users scan the UPC code of a product, it sends for MySQL, which in turn connects with Java. Java receives the data and sends the data to the webserver where users can view the information. This app can also be adjusted to work locally if the client does not want their information to be available online.

3. Glossary

UPC – Universal Product Code, it is the bar code that is used to track items

Database – a large collection of data organized for fast searches

GUI – Graphical User Interface, which is the interface that allows the user to interact the computer

JDBC – Java Database Connectivity, this is an API that allows Java to connect to a database

API – Application programming interface, A tool used to help build software

MySQL – An open source relational database management system

JFrame – an API that incorporates frames into the program.

Model View Controller Architecture – An architecture ~~that is separated its logic into~~ three separate parts; Model which defines data structure, View which defines the display/UI, and Controller which contains the control logic.

NADAMOO Bar Code Scanner – The Scanner that is used to scan the UPC bar codes of the products.

4. User Requirements Definition

<u>**Functional System Requirements:**</u>

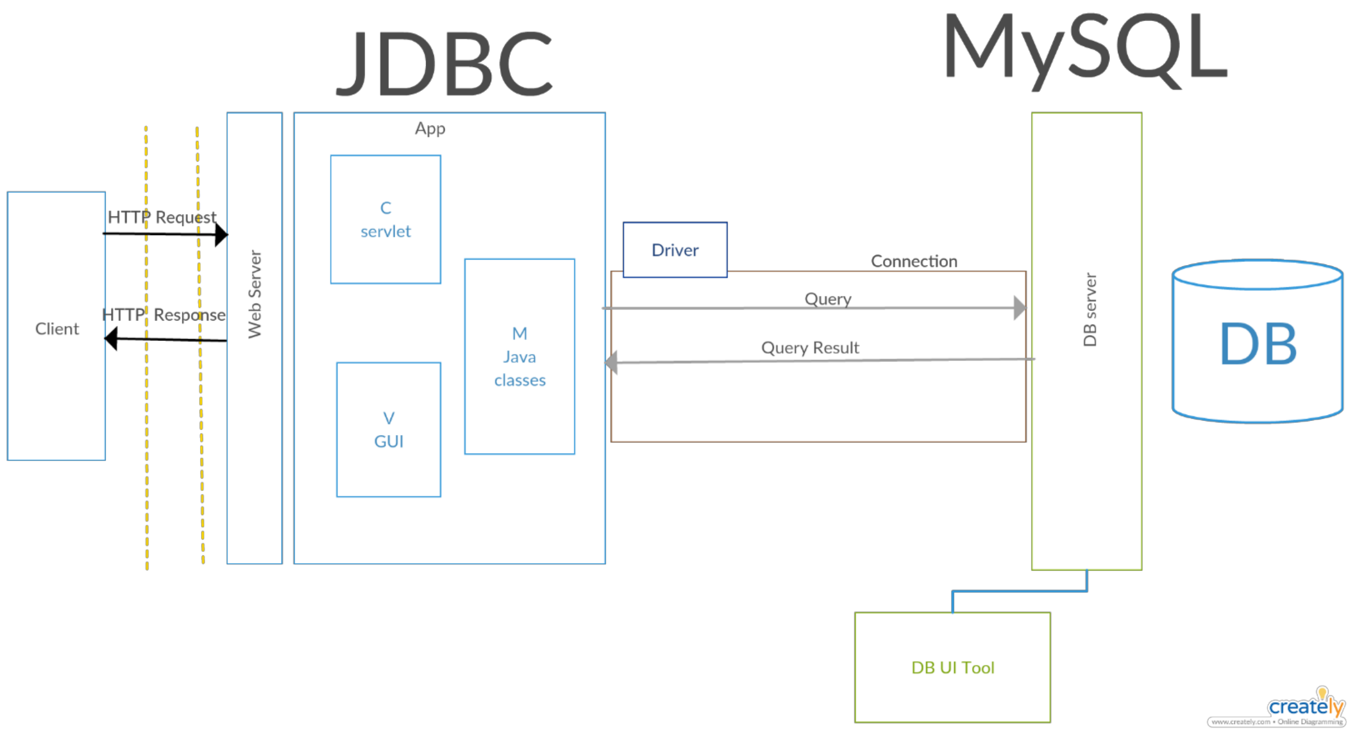
- Compatible with a NADAMOO bar code scanner
- Adds and subtracts items from the inventory.
- If item is not in the system, program will give options to create new item.
- A quarriable list of Items in the inventory.
- To categorize the items not by brand but the content of the item. Ex If you scan a Heinz ketchup bottle and a Hellman's ketchup bottle it won't categorize them as two different bottles, instead they will be both categorized as ketchup.
- To record the prices of the object based off the Promise House's price system.
- An optional note section when checking in an item.
- Compatible with any of Otterbein's laptops or desktops
- A simple GUI with a check in button, check out button and a search bar.
- To be able to generate a report of items in their inventory, cost, and when the item was donated

<u>**Non-Functional System Requirements:**</u>

- Identifies Items in less than 3 seconds
- Able to process at least 500 scans a day
- Simple enough to be used by a first-year college student
- An item in the inventory can't go in to the negative amounts

5. System Architecture

Our inventory scanning system is designed to run on any machine capable of executing .Jar files. The application should run on any Mac or Windows machine so long as they have the java virtual machine installed (JVM). We plan on implementing a Model View Controller Architecture. Our data stored in a MySQL database is the model. A GUI (Graphical User Interface) to view and modify the data is the view. Operations such as "Add to inventory", "Delete from inventory", "Search through the inventory", etc. that can be performed on the data will be in the controller.



6. System Requirements Specification

<u>**Purpose**</u>

The PHI will be a computer-based software that would allow the employees of Promise House to create an inventory of the goods donated to them.

<u>**System Description**</u>

PHI will operate only on Desktops and/or Laptops. It will be deployed as an application for the windows interface. It will currently not support any mobile devices. It will be primarily coded and run by using Java and MySQL

<u>**How it works**</u>

The PHI app is a desktop application that opens with a double click. It opens with the display of the Promise House Inventory. The inventory is going to be divided into broad categories like Vegetables, Fruits, Canned Goods, Frozen Food, Toiletries, School Supplies, etc. When the user scans the UPC code with the scanner, the application will prompt to make sure that it is the good that they intended to inventory. In the case that the item has never been scanned before, it going to allow the option of adding the item to the database and also allows the user to select the category under which the item will be represented. Each food item is going to be representing the content of the food rather than the brand. For example, popcorn of any brand is going to count towards 'popcorn' in the inventory, irrespective of it being 'Movie Butter Popcorn' or 'Act II Popcorn'. The user can alter the quantity of the item manually either in the inventory or while scanning the item itself. This feature allows the user to keep track of the items that are checked out of the pantry. An additional *notes* column is available in the inventory where the user can add any notes that they might intend for the particular item.

<u>**Hardware Requirements**</u>

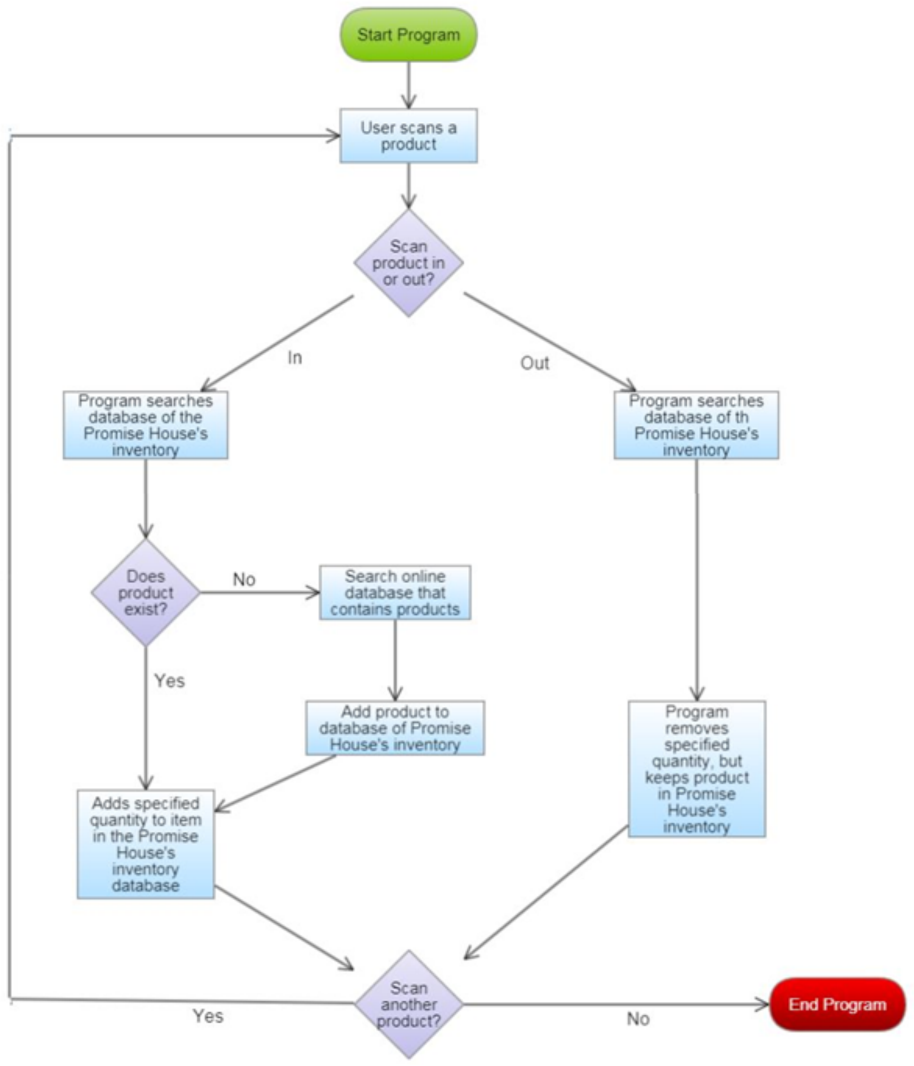
The hardware requirements to run PHI are very basic and should not be demanding. The minimum requirements are:

- <u>NADAMOO Barcode Scanner</u>: Just plug USB into USB port of the device and run the application and scan. The barcode is entered to the field the cursor is in.
- CPU : Intel Core 3.1GHz or equivalent
- RAM : 2GB

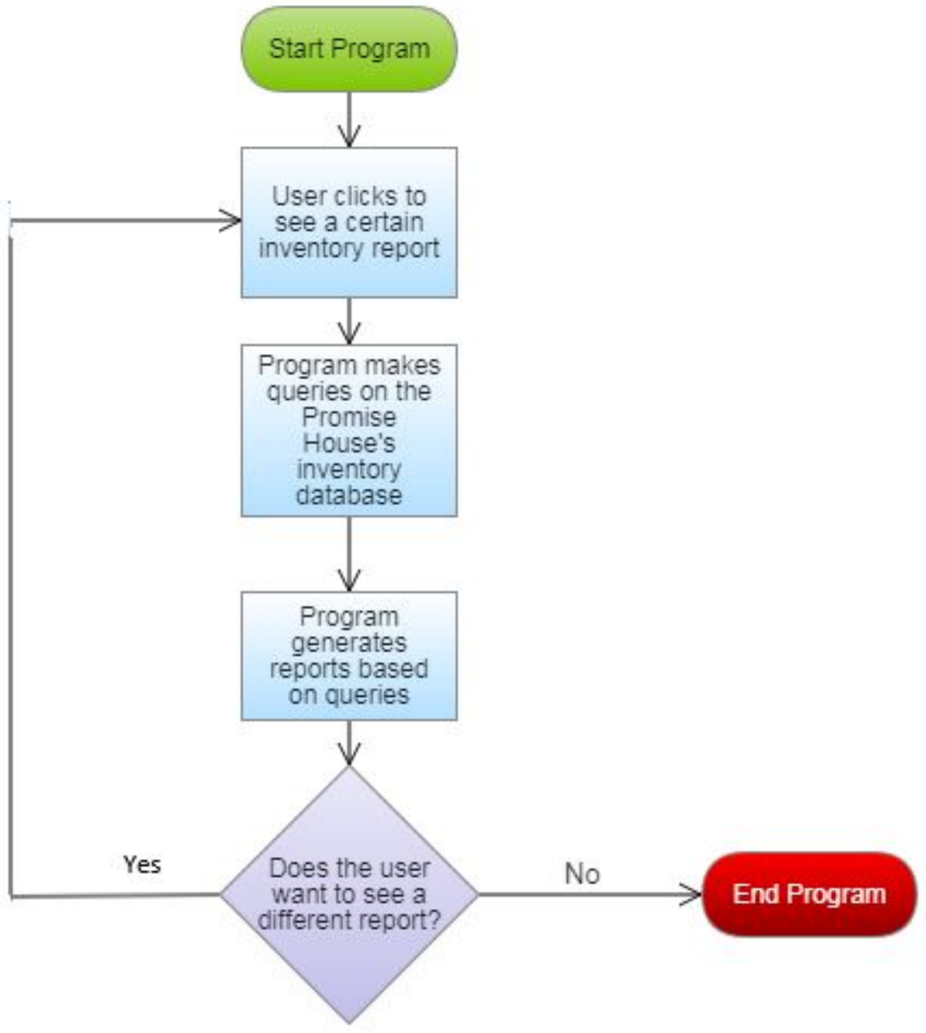
7. System Models

Below are two different activity models that show how the system will operate.

- The first model is showing how the system responds to the user scanning a product. The system will first check the database that contains the products in the Promise House's inventory. If the product is not in the inventory, the program will access the online database, perform various queries, and then add that product and its information to the Promise House's inventory. If the user is scanning the product out, they will be able to do so. The system will perform queries to find the item, then remove a specified number from the quantity that is in stock.


Start Program
User scans a product
Scan product in or out?
In
Out
Program searches database of the Promise House's inventory
Program searches database of th Promise House's inventory
Does product exist?
No
Search online database that contains products
Yes
Add product to database of Promise House's inventory
Program removes specified quantity, but keeps product in Promise House's inventory
Adds specified quantity to item in the Promise House's inventory database
Scan another product?
Yes
No
End Program

- The second activity model is showing how the system will react based on the user wanting reports of the inventory. They will be able to see the most and least popular items, how long the items have been in stock, and how many items were donated or given out daily, weekly, monthly or yearly. The system will perform queries on the database that contains the Promise House's inventory based on the specified report. Once completed, the system will then generate the specified report and display it to the user.


Start Program
User clicks to see a certain inventory report
Program makes queries on the Promise House's inventory database
Program generates reports based on queries
Does the user want to see a different report?
Yes
No
End Program

8. System Evolution

Some Additional features that can be added to PHI:

- Get PHI to work with a wireless barcode scanner, so that the user can have more mobility
- Use the UPC Database so that the user can have a wider range of search
- Create a website for the inventory so that it can be accessed from different places
- Create a scanner platform to directly scan things out of the inventory
- Automatically update the date and time of the item scanned in and out of the pantry