# Software Requirements Specification

For

## I3 Integrator

Version 1.0

In partial fulfilment of the requirements in CMSC 198 (Practicum)

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# Document Revision

| Date | Version Number | Document Changes |
|---|---|---|
| June 23, 2015 | 1.0 | Initial draft |
| June 27, 2015 | 1.1 | More detailed contents, updated referencing, screenshots, consistent formatting |
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# Table of Contents

# 1. Introduction

## 1.1 Purpose

*The project that this software requirement specification identify is the Imonggo and 3dCart Integrator or I3 Integrator version 1.0. I3 Integrator is a software that aims to integrate Imonggo (a free online web-based Point of Sale system) with 3dCart (an eCommerce site). It acts as the middle man between a user's Imonggo store and 3dCart store.*

*I3 Integrator aims to provide easy and efficient synchronization of the user's products, customers, invoices, and inventory levels between the user's stores (Imonggo store and 3dCart store) over the internet. This is made for the user not to manually enter and/or transfer the mentioned services from one store to another.*

## 1.2 Document Conventions

*The front page of this document is written in Cambria of font size 26, 18, and 14, with normal and bold font-weights. Main section titles are in Cambria of font size 18 with a bold face while sub section titles are in Cambria of font size 14 with a bold face too. All other texts are in Cambria of font size 12 with an italic face.*

## 1.3 Intended Audience and Reading Suggestions

*This document is intended for:*

- ***General Users*** *– The general users of the system will get a clear idea of the software and hardware requirements to be engaged when using I3 Integrator.*

- ***Developers*** *– The project developers will have an advantage of quickly understanding the product's methodology.*

*It is suggested that the reader go through the requirement section thoroughly before using the software. However, for readers with extensive knowledge of the system, he/she may skip the document's contents as desired.*

## 1.4 Product Scope

*The product aims to provide synchronization of the user's Imonggo store and 3dCart store in terms of the following features/services:*

- *Products*
- *Customer*
- *Invoices*
- *Inventory Levels*

*The overview of the functionalities of the enumerated features above are described in chapter **2.2 Product Functions** of this document.*

*All of the enumerated features take the user's Imonggo store as the general source of truth. Hence, all changes made in the user's Imonggo store shall be reflected in his/her 3dCart store. On the other hand, since the user's store is set as the general source of truth, not all changes made in the user's 3dCart store shall be reflected and transferred to his/her Imonggo store. Through this, synchronization conflicts and infinite circular flow will be resolved.*

## 1.5 References

- ***I3 Integrator User Manual (Version 1.0)** – this can be viewed and downloaded in the same location that this SRS was taken. It is also included in the assets/files folder of the github repository at https://github.com/camaeyeban/imonggo_integration*

- ***I3 Integrator (Version 1.0) Source Code** – this can be viewed and pulled at https://github.com/camaeyeban/imonggo_integration*

- ***Materialize CSS Documentation** – this can be viewed and downloaded at http://materializecss.com/*

- ***jQuery Documentation** – this can be viewed and downloaded at http://jquery.com/*

- ***Imonggo REST API** – this can be viewed at the link provided below: http://support.imonggo.com/help/kb/api/introduction-to-imonggo-api*

- ***3dCart REST API** – this can be viewed at https://apirest.3dcart.com/Help*

# 2. Overall Description

## 2.1 Product Perspective

*Imonggo aims to extend its services to retailers worldwide hence its developers proposed to integrate it to different ecommerce sites. 3dCart, providing a massively used shopping cart software, was chosen to be integrated with Imonggo. Thus, I3 Integrator was made.*

*Basically, I3 Integrator pulls services from the user's Imonggo store then posts those to the user's 3dCart store. Counter data flow (from user's 3dCart store to the user's Imonggo store) is also supported by the software. I3 integrator acts as the middle man between Imonggo and 3dCart data transfer. A simple illustration of the process' data flow is shown below.*


*Figure 1. Product Services' Data Flow*

## 2.2 Product Functions

*I3 Integrator functionalities are derived from the features/services that it would provide. These functions are as follow:*

- *Allow user authentication*
- *Allow user to update all of his/her products*
- *Allow product filtering upon updating user's stores*
- *Allow customers synchronization of user's stores*
- *Allow invoices synchronization of user's stores*
- *Allow inventory levels synchronization of user's stores*

*Details of the enumerated functionalities will be provided at chapter 4 System Features of this document.*

## 2.3 User Classes and Characteristics

*There is only one type of user for I3 Integrator. He/she must have his/her own Imonggo and 3dCart stores. He/she is given the opportunity and rights to use all of the software's full potential and utilize all available functionalities offered by the product.*

## 2.4 Operating Environment

*The software will run in all Windows versions, Linux, and MAC OS, with installed web browsers. Browsers to be used are preferably Google Chrome (any version), Mozilla Firefox (any version), Safari (version 5.1 or higher), Opera (version 30.0 or higher), or Internet Explorer (version 9, 10, and 11).*

## 2.5 Design and Implementation Constraints

*Developers might not be able to access the software if the application administrator sees an unfulfilled requirements or/and credentials. Execution time limitations might also be experienced if too many data shall be transferred from one store to another, especially if there is a slow internet connection.*

*Thorough benchmarking and testing of the implementation designs and constraints must be done to ensure the software's optimal reliability and availability.*

*The author will not be responsible for system deployment and maintenance.*

## 2.6 User Documentation

*A user manual will be provided along with the software. This will provide the software requirements, help the user in setting up the software, and give instructions in maximizing the software's functionalities and usage.*

*I3 Integrator User Manual link is provided at chapter* ***1.5*** **References** *of this document.*

## 2.7 Assumptions and Dependencies

*It is assumed and later agreed upon that the system must be web-based. It is also assumed that the server the system will be deployed to can handle file upload, download, and multiple user sessions.*

# 3. External Interface Requirements

## 3.1 User Interfaces

*The user interface of I3 Integrator will be minimalistic. User interface elements will be presented in a simple way for the ease of use of the software's users. Update products, update customers, and update invoices functions shall be executed upon a button click corresponding to the service while update inventories shall be executed automatically.*

*The following are the screenshots of the desktop view of the project:*


*Figure 2. Desktop View of Login Page*


*Figure 3. Desktop View of General Look*


*Figure 4. Desktop View of Update Product Filtering*


*Figure 5. Desktop View of Output Printing*

*Output messages are automatically colored according to their type and then prompted through a modal. Output message colors and their corresponding types are enumerated below.*

- ***Black** – if a service has been successfully added, posted, or updated*
- ***Grey** – if a service duplication occurred*
- ***Red** – if an internal server error occurred or if a deleted service is to be updated in one of the user's store*
- ***Blue** – if a disabled customer or an unshipped invoice has been encountered during service traversal*
- ***Orange** – if an out of stock product, a blank customer name, or an invalid input has been encountered*

*I3 Integrator's user interface have been made to be responsive to user's device. It coul d be viewed using a desktop, tablet, and mobile devices. It adopts resizing accordingly.*

*Screenshots shown in previous pages are of desktop view while the next batch of images are of mobile view. Tablet view will either look like its desktop view or its mobile view.*


*Figure 6. Mobile View of Login Page*

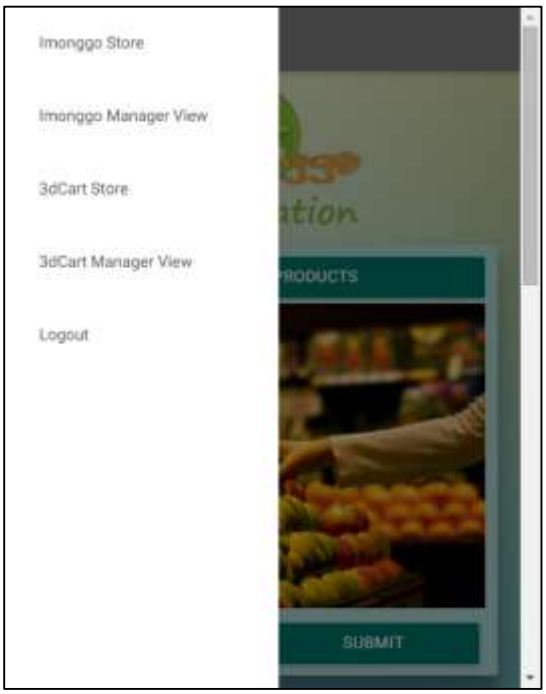


*Figure 8. Mobile View of Collapsible Side Navigation Bar*


*Figure 7. Mobile View of General Look*

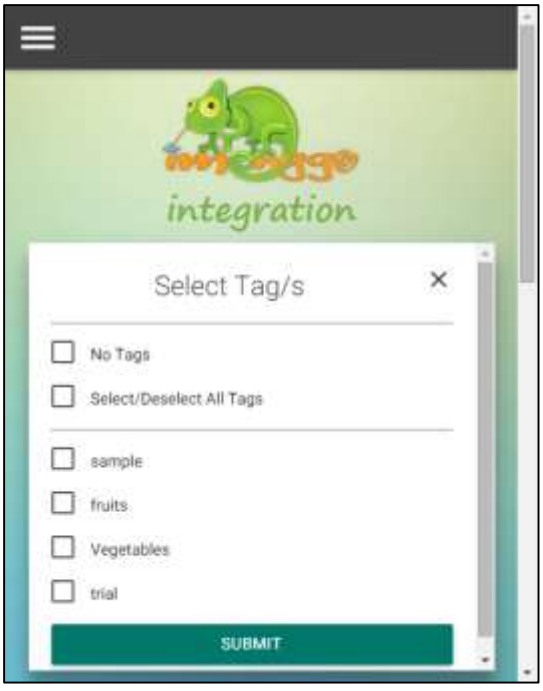


*Figure 9. Mobile View of Update Product Filtering*

## 3.2 Hardware Interfaces

*The system is currently running in localhost, but will soon be deployed in a server once further studies, reviews, and tests have been made.*

*The server will be directly connected to the client systems. The client will have access to the database through the server, but will only be 'read only'. The client has no power to modify the database directly.*

*The interaction between the user and the system will be catered by the front end design of the system while the database operations and queries will be carried by the back end implementation on the server side.*

## 3.3 Software Interfaces

*The data management tool used by this software is MySQL. Its back-end is developed using PHP (version 5.6.8) while its front-end used HTML 5, jQuery (version 1.10.2.min), and Materialize CSS (version 0.97.0) elements. No framework will be used in developing the software.*

## 3.4 Communication Interfaces

*Email functionalities provided by 3dCart's shopping cart software will be utilized for customer order notification. Standard HTTP protocol will be applied. Basic Authentication will be used when communicating with the user's Imonggo store while OAuth will be used when communicating with the user's 3dCart store.*

*Product images shall be transferred through base64 encoding.*

# 4. System Features

## 4.1 User Authentication

### *4.1.1 Description and Priority*

*In order to use I3 Integrator, the user have to authenticate to his/her Imonggo account and provide necessary details of his/her 3dCart store. This feature is of low priority because user authentication implementation is still subject to changes.*

### *4.1.2 Stimulus/Response Sequences*

*Step 1* *System shows a log in form*
*Step 2* *User enters credentials*
*Step 3* *System directs user to corresponding page depending on the user's input*

### *4.1.3 Functional Requirements*

*REQ4.1-1* *There must be a login form.*
*REQ4.1-2* *All the fields of the login form must be required. Prompt a message if at least one of the fields is left blank.*
*REQ4.1-3* *Redirect to login page if the supplied credentials are invalid*
*REQ4.1-4* *Direct the user to homepage if login was successful*

## 4.2 Update All Products

### *4.2.1 Description and Priority*

*This feature is a one-way process. It allows the user to update his/her 3dCart store products based on his/her Imonggo store products. Basically, the software will pull the user's Imonggo store products then post the pulled products to the user's 3dCart store. By default, all of the user's products will be updated. Since the main goal of this software is services synchronization, this feature is of high priority.*

### *4.2.2 Stimulus/Response Sequences*

*Step 1* *User logins to I3 Integrator through the **4.1 User Authentication** feature of the system*
*Step 2* *System shows user homepage (assuming login was successful)*

*Step 3* *User clicks the SUBMIT button in the first panel which has "UPDATE PRODUCTS" heading*

*Step 4* *System processes update request*

*Step 5* *System opens a modal containing request results*

### *4.2.3 Functional Requirements*

*REQ4.2-1* *The system must not allow the user to immediately redirect to homepage without proper authentication*

*REQ4.2-2* *The system must redirect the user to login page if session has expired.*

*REQ4.2-3* *The system should print a message in orange text if the user has no active (products with status which is not 'D') products in Imonggo.*

*REQ4.2-4* *The system must prompt a message in black bold text if the product was successfully transferred.*

*REQ4.3-5* *The system should update products which were edited after the last product updating.*

*REQ4.2-5* *The system must not transfer a product if its stock is less than 0. It must prompt a message in orange text.*

*REQ4.2-6* *Products deleted in user's Imonggo store which have been previously transferred to user's 3dCart store must be hidden in the latter mentioned store. It must also prompt a message in red text.*

*REQ4.2-7* *The system will not post products if they have been posted before. It will just prompt a message in grey text.*

*REQ4.2-8* *The system must catch other errors regarding XML's syntax and contents. It should prompt a message in orange text too.*

## 4.3 Update Filtered Products

### *4.3.1 Description and Priority*

*This feature is just like **4.2 Update All Products** feature which is mentioned earlier except that it allows the user to choose which group of products he/she wants to update. This is done through the use of the tag list field of Imonggo. Since this feature only provides partial updating, it is considered as a subset of the **4.2 Update All Products** feature. All that it could do can also be done using the earlier mentioned feature, hence it was given a low priority.*

### *4.3.2 Stimulus/Response Sequences*

*Step 1* *User logins to I3 Integrator through the **4.1 User Authentication** feature of the system*

*Step 2* *System shows user homepage (assuming login was successful)*

*Step 3* *User clicks the ADD FILTERS button in the first panel which has "UPDATE PRODUCTS" heading*

*Step 4* *System shows available filters in the same panel*

*Step 5* *User checks desired product filters*

*Step 6* *User clicks the SUBMIT button below the shown filters in the same panel*

*Step 7* *System processes update request*

*Step 8* *System opens a modal containing request results*

### *4.3.3 Functional Requirements*

*REQ4.3-1* *The system must not allow the user to immediately redirect to homepage without proper authentication*

*REQ4.3-2* *The system must redirect the user to login page if session has expired.*

*REQ4.3-3* *The system should print a message in orange text if the user has no active (products with status which is not 'D') products in Imonggo.*

*REQ4.3-4* *The system must prompt a message in black bold text if the product was successfully transferred.*

*REQ4.3-5* *The system should update products which were edited after the last product updating.*

*REQ4.3-6* *The system must not transfer a product if its stock is less than 0. It must prompt a message in orange text.*

*REQ4.3-7* *Products deleted in user's Imonggo store which have been previously transferred to user's 3dCart store must be hidden in the latter mentioned store. It must also prompt a message in red text.*

*REQ4.3-8* *The system will not post products if they have been posted before. It will just prompt a message in grey text.*

*REQ4.3-9* *The system must catch other errors regarding XML's syntax and contents. It should prompt a message in orange text too.*

## 4.4 Update All Customers

### *4.4.1 Description and Priority*

*This feature is a one-way process. It allows the user to update his/her Imonggo store customers based on his/her 3dCart store customers. Basically, this software will pull the user's 3dCart store customers then post the pulled customers to the user's Imonggo store. Since the main goal of this software is services synchronization, this feature is of high priority.*

### *4.4.2 Stimulus/Response Sequences*

*Step 1* *User logins to I3 Integrator through the **4.1 User Authentication** feature of the system*

*Step 2* *System shows user homepage (assuming login was successful)*

*Step 3* *User chooses where to get the customer information to be saved in Imonggo*

*Step 4* *User clicks the SUBMIT button below the shown filters in the third panel which has "UPDATE CUSTOMERS" heading*

*Step 5* *System processes update request*

*Step 6* *System opens a modal containing request results*

### *4.4.3 Functional Requirements*

*REQ4.4-1* *The system must not allow the user to immediately redirect to homepage without proper authentication*

*REQ4.4-2* *The system must redirect the user to login page if session has expired.*

*REQ4.4-3* *The system should print a message in orange text if the user has no enabled customers in Imonggo.*

*REQ4.4-4* *The system must prompt a message in black bold text if the customer was successfully transferred.*

*REQ4.4-5* *The system should update customers which were edited after the last customer updating.*

*REQ4.4-6* *Customers deleted in user's Imonggo store which have been previously transferred to user's 3dCart store must be disabled in the latter mentioned store. It must also prompt a message in blue text.*

*REQ4.4-7* *The system will not post customers if they have been posted before. It will just prompt a message in grey text.*

*REQ4.3-8* *The system should not post a product if the supplied alternate code already exists in the user's 3dCart store. It must show a duplication message in grey text.*

*REQ4.3-9* *The system should not post customers with blank names.*
*REQ4.3-10* *The system must catch other errors regarding XML's syntax and contents. It should prompt a message in orange text too.*

## 4.5 Update All Invoices

### *4.5.1 Description and Priority*

*This function is a one-way process. It allows the user to update his/her Imonggo store invoices based on his/her 3dCart store invoices. Basically, the software will pull the user's 3dCart store invoices then post the pulled invoices to the user's Imonggo store. Since the main goal of this software is services synchronization, this feature is of high priority.*

### *4.5.2 Stimulus/Response Sequences*

*Step 1* *User logins to I3 Integrator through the **4.1 User Authentication** feature of the system*
*Step 2* *System shows user homepage (assuming login was successful)*
*Step 3* *User clicks the SUBMIT button below the shown filters in the second panel which has "POST INVOICES" heading*
*Step 7* *System processes update request*
*Step 8* *System opens a modal containing request results*

### *4.5.3 Functional Requirements*

*REQ4.5-1* *The system must not allow the user to immediately redirect to homepage without proper authentication*
*REQ4.5-2* *The system must redirect the user to login page if session has expired.*
*REQ4.5-3* *The system should print a message in orange text if the user has no available invoice in Imonggo.*
*REQ4.5-4* *The system must prompt a message in black bold text if the invoice was successfully transferred.*
*REQ4.5-5* *The system will not post invoices if they have been posted before. It will just prompt a message in grey text.*
*REQ4.5-6* *The system should not post a product if the supplied reference already exists in the user's Imonggo store. It must show a duplication message in grey text.*
*REQ4.5-7* *The system should only post invoices which were already shipped.*

*REQ4.5-8* *The system must catch other errors regarding XML's syntax and contents. It should prompt a message in orange text too.*

## 4.6 Update Inventory Levels

### *4.6.1 Description and Priority*

*This function is a two-way process. It allows the user to update his/her inventory levels through product posting and order shipping. This software increases products' inventory levels upon product transfer while it decreases products' inventory levels upon processing the customer's orders. Since the main goal of this software is services synchronization, this feature is of high priority.*

### *4.6.2 Stimulus/Response Sequences*

*As mentioned earlier, this function is automatically performed along with product transfer and invoice posting, hence no additional action is required and no button or any UI element is necessary.*

### *4.6.3 Functional Requirements*

*REQ4.1-1* *The product's inventory level must be updated upon posting it.*

*REQ4.1-2* *The stock of the product should automatically decrease if it was ordered.*

# 5. Other Nonfunctional Requirements

## 5.1 Performance Requirements

*The system must provide reflective and real data based on either/both Imonggo store or/and 3dCart store.*

## 5.2 Safety Requirements

*Having a limited time, hacking and other malicious intents is not ascertained to be prevented.*

## 5.3 Security Requirements

*The user will be required to authenticate to his/her Imonggo and 3dCart account. Through successful authentication in both sites, I3 Integrator shall be accessible. There will be no separate authentication for the software, instead it will use both sites' authentication.*

## 5.4 Software Quality Attributes

*The system prioritizes availability and correctness over other quality characteristics. However, emphasis on maintainability and reusability shall also be observed. Hence, the source code shall be open and well documented. It will be free for further modifications and improvement.*

## 5.5 Business Rules

*Having no user classification, all available functions shall be accessible to all of the software's users.*

# Appendix A: Glossary

*PHP - Hypertext Preprocessor*

*HTML – Hypertext Markup Language*

*SQL - Standard Query Language*

*CSS – Cascading Style Sheets*

*UI – User Interface*