<Nineteen Software Development>

Software Development Plan

Version <2>

Revision document History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| XX/XX/XX | 1 | Initial Version | Nineteen Software Dev. |
| XX/XX/XX | 2 | Made client requested changes | Nineteen Software Dev. |

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Software Development Plan

# Introduction

## Purpose

The purpose of this document is to develop a long-term plan for the development of the PayPal Mobile / E-Commerce App. This document includes references to the materials that would be necessary to bring a new person into the project.

## Definitions, Acronyms and Abbreviations

API – Application Programming Interface

UPC – Universal Product Code

## References

To gain a better understanding of the project view the Vision document and the SRS.

# SDP Overview

## Project Description

The project consists of a mobile application for the Android platform and an e-commerce website. The essence of the project is encapsulated in our Vision Document. The specifications for the project are outlined in our Software Requirements Specification (SRS) document. We believe that the activity diagrams in the SRS and the use cases that they are based on deserve the most attention.

## Domain Research

The team needs to understand the various types of barcodes.

<http://www2.wiwi.hu-berlin.de/institute/iwi/internetoekonomie/downloads/rfid/EPC/MIT-AUTOID-WH-004.pdf>

## Technology Research

Technologies that the team must know are the PayPal Button Factory API, UPC Database API, Android XML-RPC client, and Zebra-Crossing. The PayPal Button Manager relies on SOAP. Therefore, it is also a requirement that the team knows how to communicate using SOAP. The UPC Database relies on XML. This means that it is also a requirement that the team knows XML. For each required technology, the following table provides documentation, a learning curve estimate, and whether it is customer required.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Type** | **Documentation** | **Learning Curve** | **Customer Required** |
| PayPal Button Manager API | API | <https://cms.paypal.com/us/cgi-bin/?cmd=_render-content&content_ID=developer/e_howto_api_ButtonMgrAPIIntro> | 4/10 | Yes |
| UPC Database | API | [http://www.upcdatabase.com/xmlrpc.asp](http://www.google.com/url?q=http%3A%2F%2Fwww.upcdatabase.com%2Fxmlrpc.asp&sa=D&sntz=1&usg=AFrqEzd5zvtwIiqv1_wmQs8F4c70LopjLg) | 4/10 | No |
| Android XML-RPC client | Mobile Development | <http://code.google.com/p/android-xmlrpc/> | 5/10 | No |
| Zebra-Crossing (ZXing) | Mobile Development | <http://code.google.com/p/zxing/> | 6/10 | No |

## Prototype Overviews

We created a throw-away iRise prototype this Fall. The customer was moderately impressed with the prototype that we showed them. They suggested that we create additional scenarios from the consumer perspective for showing how purchases will look. This prototype is fully complete.

We also created a proof of concept using the actual technologies we plan to use for the project. At the end of Fall semester we had a functional mobile application that was able to scan a product, retrieve a description for that product from the UPC Database, and create a PayPal button. We believe that this proof of concept is about 50% complete.

# Implementation Outline

## Requirements Prioritization Matrix

The following table prioritizes the requirements in order according to business value, effort, and volatility.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name** | | **Volatility** | **Priority** | **Effort** | **Business Value** |
| **MOBILE APPLICATION:** | | |  |  |  |  |
| R1 | | Login authentication |  |  |  |  |
| R1.1 | | The system shall require that merchants enter login details including username and password to become authenticated which will allow access into the system | 0% | High | Low | High |
| R1.1.1 | | If the merchant enters incorrect login details then an error message will be displayed on the login page | 0% | High | Low | High |
| R1.1.2 | | If the merchant enters correct login details they will be directed to the Add/Manage items page | 0% | High | Low | High |
|  | |  |  |  |  |  |
| R2 | | Scan item |  |  |  |  |
| R2.1 | | The system shall allow merchants to scan product barcodes | 0% | High | High | High |
| R2.1.1 | | The system shall check whether the merchant has already added the product barcode to their list of items | 0% | High | High | High |
| R2.1.1.1 | | If the merchant has already added the product barcode to their list of items then send the merchant to the Manage Items page | 0% | High | High | High |
| R2.1.1.2 | | If the product barcode does not exist in the merchant's item list then the system shall check whether it exists in the UPC database | 0% | High | High | High |
| R2.1.1.2.1 | | If the product barcode number is found in the UPC database then the system shall retrieve the description | 0% | High | High | High |
| R2.1.1.2.1.1 | | When the description is retrieved it will be stored in the local database | 0% | High | High | High |
| R2.1.1.2.2 | | If the product barcode number is not found in the UPC database then the merchant will be directed to the Manual Entry page | 0% | High | High | High |
| R2.2 | | When a product is added to the local database a Buy Now button for that product is created | 0% | High | Medium | High |
| R2.2.1 | | The Buy Now button code is retrieved via the PayPal Button Manager API | 0% | High | Medium | High |
| R2.2.1.1 | | The system shall create a page using the PayPal button | 0% | High | Medium | High |
|  | |  |  |  |  |  |
| R3 | | Manual entry |  |  |  |  |
| R3.1 | | The system shall allow merchants to manually enter item details | 0% | Medium | Medium | Medium |
| R3.1.1 | | Merchants shall be able to enter item details including price, quantity, title, description, picture and publication status | 0% | Medium | Medium | Medium |
| R3.1.1.1 | | The system shall store the item details in the local database | 0% | Medium | Medium | Medium |
| R3.1.1.2 | | After successfully adding an item the merchant should be directed to the Manage Items page | 0% | Medium | Medium | Medium |
| R3.2 | | When a product is added to the local database a Buy Now button for that product is created | 0% | High | Medium | Medium |
| R3.2.1 | | The Buy Now button code is retrieved via the PayPal Button Manager API | 0% | High | Medium | High |
| R3.2.1.1 | | The system shall create a page using the PayPal button | 0% | High | Medium | High |
|  | |  |  |  |  |  |
| R4 | | View items |  |  |  |  |
| R4.1 | | The system shall allow merchants to view details about items that they have previously added | 0% | Medium | Low | Low |
|  | |  |  |  |  |  |
| R5 | | Edit item |  |  |  |  |
| R5.1 | | The system shall allow merchants to edit item details that they have previously added | 0% | High | Low | Low |
| R5.1.1 | | The system shall update the item details in the local database | 0% | High | Low | Low |
|  | |  |  |  |  |  |
| R6 | | Delete item |  |  |  |  |
| R6.1 | | The system shall allow merchants to delete item details that have previously added | 0% | High | Low | Low |
| R6.1.1 | | The system shall delete the item details in the local database | 0% | High | Low | Low |
|  | |  |  |  |  |  |
| **E-COMMERCE APPLICATION:** | | |  |  |  |  |
| R1 | Login authentication | |  |  |  |  |
| R1.1 | The system shall require that merchants enter login details including username and password to become authenticated which will allow access into the system | | 0% | High | Low | High |
| R1.1.1 | If the merchant enters incorrect login details then an error message will be displayed on the login page | | 0% | High | Low | High |
| R1.1.2 | If the merchant enters correct login details they will be directed to the Add/Manage items page | | 0% | High | Low | High |
|  |  | |  |  |  |  |
| R2 | Register | |  |  |  |  |
| R2.1 | The system shall require that merchants input their First name, Last name, Address, Zip Code | | 0% | High | Low | High |
| R2.2 | The system shall require that merchants input their email address that is preferably associated with a PayPal account | | 0% | High | Low | High |
| R2.2.1 | The system shall direct the merchant to PayPal to create a new monthly subscription for our service | | 0% | High | Low | High |
| R2.2.1.1 | After successfully subscribing to PayPal the merchant will be directed back to the registration page on our site | | 0% | High | Low | High |
| R2.3 | The system shall require that merchants specify the login details that they wish to use including a username and password | | 0% | High | Low | High |
| R2.3.1 | The system shall check whether the username is unique in the system | | 0% | High | Low | High |
| R2.3.1.1 | If the username is not unique then the system shall inform the merchant that they have chosen a username that is already in use and they will be asked to choose another username | | 0% | High | Low | High |
| R2.3.1.2 | If the username is unique then the merchant will be allowed to continue with the registration process | | 0% | High | Low | High |
| R2.3.2 | The system shall check whether the password is at least 8 characters in length | | 0% | High | Low | Medium |
| R2.3.2.1 | If the password is not 8 characters in length the merchant will be asked to specify an 8 character password | | 0% | High | Low | Medium |
| R2.3.2.2 | If the password is at least 8 characters the merchant will be allowed to continue with the registration process | | 0% | High | Low | Medium |
| R2.4 | When the Register button is pressed the registration process will be initiated | | 0% | High | Low | High |
| R2.4.1 | If the username was unique and the password met the requirements the merchant account will be created | | 0% | High | Low | High |
| R2.5 | The system will interact with the PayPal Button Manager API to ask permission to make third party API calls | | 0% | High | Medium | High |
| R2.6 | The system will redirect the merchant to the Add/Manage items page | | 0% | High | Low | High |
|  |  | |  |  |  |  |
| R3 | Manual entry | |  |  |  |  |
| R3.1 | The system shall allow merchants to manually enter item details | | 0% | High | Low | Medium |
| R3.1.1 | Merchants shall be able to enter item details including price, quantity, title, description, picture and publication status | | 0% | High | Low | Medium |
| R3.1.1.1 | The system shall store the item details in the local database | | 0% | High | Low | Medium |
| R3.1.1.2 | After successfully adding an item the merchant should be directed to the Manage Items page | | 0% | High | Low | Medium |
| R3.2 | When a product is added to the local database a Buy Now button for that product is created | | 0% | High | Medium | Medium |
| R3.2.1 | The Buy Now button code is retrieved via the PayPal Button Manager API | | 0% | High | Medium | Medium |
|  |  | |  |  |  |  |
| R4 | View items | |  |  |  |  |
| R4.1 | The system shall allow merchants to view details about items that they have previously added | | 0% | High | Low | Low |
|  |  | |  |  |  |  |
| R5 | Edit item | |  |  |  |  |
| R5.1 | The system shall allow merchants to edit item details that they have previously added | | 0% | High | Low | Low |
| R5.1.1 | The system shall update the item details in the local database | | 0% | High | Low | Low |
|  |  | |  |  |  |  |
| R6 | Delete item | |  |  |  |  |
| R6.1 | The system shall allow merchants to delete item details that have previously added | | 0% | High | Low | Low |
| R6.1.1 | The system shall delete the item details in the local database | | 0% | High | Low | Low |

## Sprint Plans

Each sprint consists of 21 days. Quality analysis would be done at the end of each sprint to ensure that all goals have been met to the customer’s satisfaction and if not measures which need to be taken to achieve customer approval would be taken immediately.

Sprint 1 – Construction (*<date-start to date-end>*)

The goal of this sprint is to complete R1 of the Mobile Application and R1 & R2 of the E-Commerce Application.

Sprint 2 – More Construction (*<date-start to date-end>*)

The goal of this sprint is to complete R2 of the Mobile Application.

Sprint 3 – Even More Construction (*<date-start to date-end>*)

The goal of this sprint is to complete R3 of the Mobile Application and R3 of the E-Commerce Application.

Sprint 4 – Transition (*<date-start to date-end>*)

The goal of this sprint is to complete R4, R5, R6 of both the Mobile Application and E-Commerce Application.

Sprint 5 – Transition / Maintenance (*<date-start to date-end>*)

This sprint is reserved for maintenance tasks. Integration testing would be performed by combining the individual modules and testing them as a group. Non-functional documentation requirements NF-6, NF-7, NF-8 (see SRS) should be completed in this sprint.

## Change Management Plan

Depending on the impact level of a change, we require approval by the project manager, faculty mentor or the client. Before approving a change various issues such as the technical feasibility of the change, cost to benefit ratio and overall change impact must be taken into consideration. Following this a plan for the implementation of the change will be drafted and updates would be made to the relevant documents. Irrespective of the impact level of the change, it must be communicated to all relevant stakeholders.

|  |  |
| --- | --- |
| **Change Impact** | **Approval Required By** |
| Low | Project Manager |
| Medium | Faculty Mentor |
| High | Client |

## Risks and Impediments

The following items represent the risks and impediments we may face in our project:

1. Technical complexity - We may have underestimated the complexity of the project in the Inception and Elaboration phases, which may make our future deadlines difficult to meet.
2. Workload – There may be conflicts with our other commitments such as classes and work.
3. Changing requirements – The scope of the project and/or the business needs of the client may change.

## Other recommendations