MOBILE SYSTEMS FOR INSTITUTE OF HUMAN ORIGINS

SOFTWARE REQUIREMENT SPECIFICATION

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Arizona State University, Polytechnic

Version 2.0

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Revision History

Name	Date	Reason For Changes	Version
Software Requirement Specification	11/09/2016	Initial Draft	1.0
Software Requirement Specification	11/16/2016	Final Version	2.0

1. Introduction

1.1 Purpose

The purpose of this document is to list the requirements for Project ASU IHO. The documents list the Functional and Nonfunctional Requirements. This document provides a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

1.2 Document Conventions

The font used through the document is Times New Roman. Heading are in bold with size 14. Sub heading are in bold and font size 12. Rest of the text has font size 12.

1.3 Intended Audience and Reading Suggestions

This document is used by all the stakeholders as well as for future references. Stakeholders for this project include the members of team HackSlash and the sponsors Dr Timothy Lindquist, Dr Julie Russ, Prof Richard White House. **Just logout and log back in with your 'dnsknr' username. If you need to reset that password please just click here.** The rest of this document contains detailed project description, external interfaces, System Features and other non-functional requirements. It is first recommended to read the project charter to get a high level overview of the project. To get a detailed description of how the project was carried read project plan document.

1.4 Product Scope

This product is used by researchers, faculty members and end users who are interested in learning about Humans Sciences and its Origin. Also this is used by a system administrator who control the

content of the mobile application. The project is limited to mobile applications in 2 platforms - Android and iOS. Also a desktop application has to be developed which can control the contents displayed on the mobile application. The mobile applications on Android and iOS are in their second version i.e, version 2.0. The desktop application is in its first version i.e, version 1.0.

1.5 References

1. *Karl E. Wiegers, Software Requirement Specification Guideline, 1999*
2. *Mihir Bhatt, Arpit Jaiswal, Sweta Singhal, Gowtham Nayak, Senthamil Sindhu, Mobile Systems for IHO – Project Charter, 2016*

2. Overall Description

2.1 Product Perspective

This document contains the problem statement that the current system is facing which is legacy code and application running on an older platform. Further, the contents of the application cannot be changed dynamically. The only way to update the contents is to push an application update to the marketplace. Existing functionalities have to be improved and new functionalities have to be added. It further contains a list of the stakeholders and users of the proposed solution. It also illustrates the needs and wants of the stakeholders that were identified in the brainstorming exercise as part of the requirements elicitation meeting. It further lists and briefly describes the major features and a brief description of each of the proposed system. Essentially, the product is an enhancement to the existing application for the Institute of Human Origins at Arizona State University. It consists of three types of applications: iOS application, android application and the desktop application.

2.2 Product Functions

The functionalities of the applications are as follows:

- A desktop application will be developed where the owner can update the content which will be synced to reflect in the mobile applications.

- The android application will help us to obtain news and events about the IHO, gather information about the lecturers, connect with IHO etc. Currently, we are working on enhancing every feature that this application provides by organizing them as per the needs of the sponsor.

- iOS Application also operates similarly requiring changes as stated by the sponsor. Some of them include updating field notes, limiting the image size to be uploaded, adding labels etc.

2.3 User Classes and Characteristics

- One class of users are the researchers at the Institute of Human Origins who can use this application to gather information regarding the lecturers, connect with the institute, look up news and events and also learn about the travel program.

- The end users who are interested in human sciences also can use this application beneficially. They can get information on the trending news and also donate to ASU IHO.

- The other class of users is the owners of the application who can use the desktop application to update the content so that it is reflected in the mobile applications as well.

2.4 Operating Environment

- The mobile application will operate in Android and iOS mobile devices.
- The desktop application will operate on Windows systems.

2.5 Design and Implementation Constraints

- The tools used for the project are Xcode for iOS programming, Android Studio for the android application and the Eclipse IDE for Java Swing application.

- The languages used for iOS programming is Swift, Java programming language is used to develop the desktop application and the android application.
- One of the implementation constraints is that whenever content is entered into the desktop application, it should be submitted to the server.

2.6 User Documentation

The following are the documents that will be delivered throughout the course of development:

- Project Charter
- Project Management Plan
- Software Requirements Specification
- Software Design Document
- Milestone Report
- Software Test Report
- User Manual
- Final Report

2.7 Assumptions and Dependencies

- It is assumed by default that the application will run on mobile platforms with recent versions of iOS and Android.
- The project is a revision of the mobile applications developed previously. It involves shifting the codebase from the existing Objective C version to Swift. The Android application involves shifting of codebase from Eclipse IDE to Android Studio.

3. External Interface Requirements

3.1 User Interfaces

The user interface for the software shall be compatible with any mobile device running on Android Api 19 and greater or iPhone. Also the desktop app will run on any machine that has JRE 7 or higher installed. The user interface shall be implemented using Java, Swift, XML and Java Swing.

3.2 Hardware Interfaces

The hardware devices required are Android Mobile Phone, Apple iPhone, A Server. Since the application must run over the internet, all the hardware required to connect to the internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

3.3 Software Interfaces

There are three components in this project. The Android app has it own user interface with which the user can interact with the application. The iOS application has its own user interface. The Swing desktop application has a User Interface with which the administrator can control the contents displayed on the mobile applications. This interface looks similar to the interface on the mobile applications.

3.4 Communications Interfaces

The applications system shall use the HTTP protocol for communication over the internet. The data exchange format is XML.

4. System Features

4.1 Java Swing Application

4.1.1 Description and Priority

This part of the system is a desktop based application which would be used to modify/update the iOS/Android Application information content and push the same to the server.

Priority – High

4.1.2 Stimulus/Response Sequences

- Stimulus: The user will navigate through the UI, similar to that of mobile application, and will enter the news/events/gallery images content to be updated on the mobile application and submit the same.

- Response: The entered UI component content will be visible on the mobile application UI component.

4.1.3 Functional Requirements

- REQ-1: The user should be able to login and logout of the desktop application.

- REQ-2: The user should be able to navigate back and forth in the application, similar to that of mobile application navigation.

- REQ-3: The user should be able to enter the new/modified content in the given UI component corresponding to that of the application.

- REQ-4: The user should be able to save the newly added content without submitting to the server.

- REQ-5: The user should be able to submit the newly added content to the server.

- REQ-6: The user should be able to submit pictures in landscape and portrait mode, restricted to pre-decided optimal sizes, to the server.

4.2 Android/iOS Mobile Application Enhancements

4.2.1 Description and Priority

Listed below are the enhancements, which need to be incorporated in the existing Android and iOS version of the mobile applications.

Priority - Medium

4.2.2 Stimulus/Response Sequences

NA

4.2.3 Functional Requirements

- REQ-7: Field Notes – Inside New Science tab all latest publications must be visible on top of the list.

- REQ-8: Who is Lucy - Fix problems with Who is Lucy tab. Need to fix the pop-up issue and alignment with Lucy.

- REQ-9: Connect - The Connect tab must have all social media handles at one place – Twitter, Facebook, Vimeo, YouTube, Instagram.

- REQ-10: Becoming human - Need to add "Ask an anthropologist?" label to this tab. Also reduce the bar size.

- REQ-11: Donate - Need to update the Donate link.

- REQ-12: News and Events - Need to remove the interim page and directly point it to the link of news and event website of IHO.

- REQ-13: News and Events – Add a feature story page, which goes to an interim page and then a IHO website link.

- REQ-14: Travel and Learn – Need to remove Scroll. Add read more which points to the IHO travel page link directly.

- REQ-15: One challenge posed will be the change of URLs since the IHO website is undergoing change.

- REQ-16: Student Blog – Need to reformat and remove the ambiguity.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The performance depends on the user's mobile devices in which the application is running. It is assumed that the hardware components of the user's device support our application.
- A steady network connection is required for the smooth functioning of the application with access to external web pages.

- The application will require recent versions of PC platform, iOS and Android devices to support all the functional features that are designed.

5.2 Safety Requirements

- The safety requirements involves connecting the users to ASU IHO through a secure internet connection. This entirely depends on the user's internet connection.

- Since there is no user credentials involved, there is no risk involved for user-related data.

5.3 Security Requirements

5.3.1 Data Transfer

The data transfer between the server and the mobile application happens using plain text. There is no encryption for this data since this not confidential. But donate link uses secure connection to complete the payment. The users is redirected to payment page which provides security. This page is not developed by our team.

5.3.2 Data Storage.

The data stored on the server is secure and can be changed only authenticated users. While communicating with the server with the Java Swing application, the user has to first authenticate himself. One the user is authenticated he can modify the files stored on the server.

5.4 Software Quality Attributes

The system is aimed to be availability, correct, flexible, interoperable, maintainable, portable, reliable robust, and usable. The availability, flexibility, maintainability, reliability and robustness can be provided by hosting multiple servers. The desktop application is portable because it's developed in Java. The applications are developed in respective platforms using platform specific features. Hence its usable by the users in respective platforms. Also the screens, navigation and functionality are same in the applications in both the platforms.

Appendix A: Glossary

<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>

Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>