**Team NaCl**

Software Requirements Specification

Group Leader: Martin Bacala

Members: Nick Manolov, Hung Nguyen

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**Introduction**

* Purpose
  + To develop an Android mobile application environment that will keep track of inventory of the School of Natural Science’s lab equipment.
* System Overview
  + The product will be on the Zebra MC330M Android handheld scanner that will connect to wi-fi and is a mobile application that is connected to both a barcode scanning system and a database. We will use the Zebra Android EMDK. For the database, the application

**Overall Description**

* Product perspective
  + System interfaces
    - We will create a barcode scanning system that will propogate information into a database
  + User Interfaces
    - User will interact with the Android operating system and mobile application user interfaces.
    - The application must be user-friendly and feel intuitive/natural to use
  + Hardware interfaces
    - User will interact with the Zebra mobile scanner. It is a barcode scanning system integrated with an Android mobile device.
    - User will potentially plug Zebra device into its dock and the scanned data will sync into a database
  + Software interfaces
    - User may use wi-fi or bluetooth to sync the data stored on the Zebra device to the database
  + Communication interfaces
    - Zebra device will communicate with the database
    - Barcode scanning system will locate lab equipment’s serial number, location, and description
  + Memory constraints
    - User will be constrained to using the Zebra device’s local storage to collect the data
  + Operations
    - User will be able to collect data and make sure that inventory counts match previous reports from past semesters
    - User will be able to report to IU and organizations such as OSHA of how much equipment has been purchased
  + Site Adaptation Requirements
    - It may be difficult for user to navigate through all 56 labs in the School of Natural Sciences
  + Product functions
    - The end product will function as an inventory management system which will keep track of lab equipment. User will be able to use the mobile application in addition to the barcode scanner that will query the data into a database
  + Constraints, assumptions, and dependencies
    - Constraints
      * User will be confined to using the Zebra mobile scanner
      * Must use IU’s server or third party server
    - Assumptions
      * There may be documentation we must set up for the user
      * Training to use the application may be required
    - Dependencies
      * Application will use the Zebra EMDK as well as either mySQL or MongoDB depending on which database will work with Android better.

**Specific Requirements**

* External Interface Requirements: Program is designed to be used only by John Norman so it will only has an Admin UI (gives admin ability to view and edit data)
* Functional Requirements: The admin will be using the app and its internal function of barcode scanning to take user input in the form of querying the data through scanning the barcodes. Outputs will be displayed in the database depends on the information imprinted in the barcode.
* Performance Requirements: The product will be accessible through the form of an android application. The product should not take a lot of processing power because its main function of barcode scanning is built into the zebra device.
* Design Constraints: Some of the fully fledged function such as instant porting to a database might not be possible, the set of data we are encapsulating might have to be normalized at some points if it’s something that’s not in whole.
* Standard Compliance: All of the codes we are writing will be either open source of creative common licenses.
* Logical Database Requirement: We have to put this on IUS hosting services so two possibilities are mySQL and MongoDB.
* Security: Since the database will be hosted on IUS servers, security partly falls onto IUS’ side but we are also thinking of implementing some standard security measures (not determined at this time.)
* Maintainability: Any tweaks and maintenance will have to go through the admin or in this case Jon Norman. It will be accessible through Admin UI in our chosen database.
* Portability: Since the device is portable the user must have a consistent connection to the database, meaning it must be always connected to the server around Life Science and Physical Science.