Background

Anyone with a large collection of books, electronics, or other material that is often loaned out to others has had to deal with the tracking of such loaned items. Further, keeping track of what, exactly, does what is another hassle at times. Does that Atom based system have 2GB of RAM or 1GB of RAM? Which system has an SSD?

Details such as these, as well as keeping track of who has each piece of equipment is a challenge, one which lends itself to the use of a software tool.

Project Description

The purpose of this project is to develop a system for tracking loaned out items. These items take the form of computer hardware, electronics components, mobile devices, books, and games. All items have some sort of unique identifier associated with them (IMEI, ISBN, serial numbers, etc.).

The tool developed will be either a web application or a mobile (Android or Windows Phone only – no iOS) application (preferred), and should allow for the following:

- Scanning of barcodes on each item (if mobile application)

- Storing attributes of the item

    - unique ID
    - special features
    - Any accessories it comes with
    - pages, if a book
    - OS installed, if computer
    - other useful information

- Check-out system, with both date out and date in

- Historical information retained

- List of available items, searchable

Database

The database will live on the `mysql.engr.oregonstate.edu` server. No specific layout or engine are required, and should be chosen for solid technical reasons. This database will be remotely accessible by the clients, of which there can be many. For an Android application, local database caching is allowed, to deal with offline check-ins or check-outs.

User stories

The following are some use cases for the final product:

- Kevin has the following piece of hardware to add to the database:

  An Atom D510 based Mini-ITX industrial control board, part number AIMB-212D-S6A1E. 2GB of RAM, 32GB CF card for storage. Comes with 12v power cord, 3 external serial port cables, 2 SATA power cords, and 2 SATA data cables. Serial number AKB2519374. In box.

  After authenticating as an admin user, he enters the above information in to the appropriate fields, scans the barcode, and creates the new entry.

- A student comes to Kevin, and wants to borrow an Android phone. Kevin pulls down one of the devices off the shelf, enters the check-out screen on the application, and enters the IMEI of the device, as well as the student's username. The system automatically tags the entry with today's date.

- The same student finishes with the project, and returns the device. Kevin enters the check-in portion of the application, and enters the IMEI of the returned device. The device is again listed as available for checkout, and the student who borrowed it is removed from the list of outstanding loans.