**Inventory System for Minor and Major Equipment**

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**Goals:** I) have the ability to read barcodes through a phone’s camera, utilizing the high resolution imagery that will link to equipment’s ID, II) have the app run across multiple platforms including Android, IOS, and website, III) create and maintain a database to store equipment information such as ownership, condition, location, etc., IV) create an auditing excel document to showcase all the current data for the equipment on hand, V) back up data at regular intervals, VI) connect with the current administrator that controls the inventory system to see where it needs improvement.

**Design Merit:** Currently the computer science department keeps track of its inventory in a series of excel documents. This makes the tracking and auditing of inventory difficult, increasing the chance of misplaced inventory or the loss of inventory data. By moving this information to a database, we will simplify the access issues associated with having the information in one file, while decreasing the chances of data being lost. Our database will be updated when the equipment is being added, removed, or changes location. Our GUI will be designed to be efficient and user friendly to display information clearly. It will be modeled after the university mobile application standards. We will be using the NDUS login page to verify login information, and then follow standard SQL security practices. In the past decade, high quality cameras have become standard on phones which has made it possible for a user to scan barcodes without the aid of an external device. We will be reviewing our options for existing barcode API’s such as Google Mobile Vision.

**Broader Impact:** Once in place, this project should make: tracking who is using inventory, what inventory is being used for, and where inventory is, easy within the computer science department. It also carries the potential to be used university wide, making equipment sharing between departments efficient. By leveraging this innovative technology, we can create a companion app that will allow users secured, yet simple access to the database while making it simple for them to update a piece of inventory’s status by scanning its barcode.

**Approach:** Our approach to this project starts with contacting the current administration that controls the inventory management system, to see how it operates. Next would be to contact John Nordlie to set up our database table and remote connections, then work towards getting it populated with existing data so we can have a test set. Afterwards we will work towards getting a functional prototype of our mobile application that would showcase some of its functionality with the database. Then more complex methods would be added as well as improving our user interface. Some of the basic functions will be: add, remove, editing, retrieve. The more complex methods include: moving locations, barcode scanning, and secure login. Eventually we will have a mobile application that we can test more extensively for special case errors. Then we will be able to release our product into a live system.