**Inventory System for Minor and Major Equipment**

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***Abstract:*** *Currently the University of North Dakota Computer Science department (UND CSCI) tracks its equipment via an Excel spread sheet. Under the current system each piece of equipment is given a barcode representing a unique identification number which then then must be manually added to the inventory spread sheet. This is a time-consuming task combined with the access issue presented with storing this information in a single spread sheet file makes the current system inefficient and to an extent risky to use. This project is aimed at replacing the current system with one that will allow multiple users appropriate access to the inventory data, as well as speed up the entry process by scanning each items barcode with a phone camera. To accomplish this, a web application was built to provide an interface for the user to access the different functions. From this application, they will be able to create, delete, view, update, and locate inventory given the correct permissions.*

**INTRODUCTION:** The departments at the University of North Dakota (UND) have two broad categories of inventory that must be kept track of: Major inventory, which consists of inventory costing over $5,000, and Minor inventory, consisting of inventory under $5,000. The Computer Science department currently handles tracking its inventory by giving each item a unique identification number and manually adding it with all the relevant information about the item to a spreadsheet in an Excel spreadsheet. Some of the other information currently includes the room number, serial number, description, quantity of the same item, date purchased, original costs, and replacement costs.

The lack of user access control and inventory tracking accuracy creates a security and logistics issue. With the current system, there is one central copy that can be copied to others, but only the original will be used to track any changes. If the spreadsheet should become corrupted, then the department could lose inventory records if they are not backed up.

The goal of this project is to create a similar centralized database where multiple users can securely access inventory information and update the database in a controlled method. The user will also be able to utilize the barcodes that already exist on current inventory to locate and update inventory in the database. This will improve the speed and accuracy of inventory management.

The previous year’s team had built a series of applications which had worked, but due to the lack of documentation and segmented source code, it was not possible to continue work on their project. So this year’s team decide to rebuild the system from scratch, and document the source code to provide an easy platform for future developers to maintain and update the system.

The first attempt at a solution was based around the idea of building a separate application for Android, iOS, and Web-based platforms. This introduced a development challenge in finding and building something that would work well between all platforms. The team eventually decided to pivot directions and focus on one web-based application that would work across all platforms and feed off of the same code base. This

This is not the first attempt at this project at least two previous attempts were made both starting from scratch. The second of the two attempts used a website in order to allow any devise with a web browser to access and update the inventory information. At the beginning of this project the original plan was to continue building off of this website. Unfortunately do to lack of documentation this was not possible forcing this incarnation of the project to scratch. A new goal to provide enough documentation to allow someone else to pick up where this project ends.

How successful were we with our goals?

One sentence descriptions of the other sections of the paper

**RELATED WORKS:** rip the good ones from the paper we did in semester one

**APPROACH:** discuses why we chose to work in visual studio

Why didn’t we continue of the work of previous years?

This project has been attempted at least twice in the past. We would have liked to build off of what they started but do to lack of documentation we could not.

Why did we try to build a standalone app first?

Why did we abandon that approach?

Why did we switch to a website?

Why did we use the ASP frame work?

**IMPLEMENTATION:** explain how we broke the project down in to three parts.

How did we set up the website part of the project?

How did we set up the database portion of the project?

How did we set up the scanner portion of the project?

What would someone need to know to run our project?

**RESULTS:** Do the web pages work on mobile? On desktop?

Does the database receive, return, and store what it needs to?

Can barcodes be scanned under reasonable conditions and in a resemble period (i.e. less than two seconds turnaround time)?

Is there enough documentation for others to continue working on this.

**FUTURE WORK:** Spit ball ideas on where to host this web page.

Features could be stream lined or added?

**CONCLUSION:** Acknowledge success or failure.

Highlight how we set this up to be built upon.