91.527 - Human Computer Interaction
User Interaction design plus a full mockup

Hardware Inventory Management System
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1 Introduction

I have been inspired by this course to create a user interaction design that would solve several problems with my existing method of managing our hardware inventory at work, i.e. currently using Microsoft Office Excel (Figure 1).

![Figure 1 – Using spreadsheet to manage hardware inventory](image)

At the place I work, almost every faculty and staff use Excel for some sort of function to manage their data. I can only speculate that they can’t find another application for their needs or they are looking for a cheap and fast way to do what they need with a tool they already have and know how to use. The later one was my reasons for using Excel.
Although Excel seems to be able to handle a variety of usage other than the financial spreadsheet which was the original intent for Excel, however, using Excel for general use does create problems when one goes beyond what an application was originally designed for. Please refer to my project proposal for details of problems I’ve found using Excel for managing my hardware inventory.

I recall the home improvement programs on PBS always say, “Make sure you use the right tool for the job” and “Never use or modify a tool to do something that it wasn’t designed for”. These statements were made by trade professionals on TV mostly for safety reasons when one is using a power or a hand tool. At first when you read this you might think, how is this related to the software user interface? My answer is, use this as an analogy to get inspired to design the right application for the right job. When an application is easy to use, its intuitive, does what you need, does it very well, and it’s enjoyable to use.
2 Login Page

My new inventory system will be designed to be a web application, accessible from anywhere that has internet access and a web browser. Since this application is available over the internet, I need to secure it with a login page (Figure 2).

![Login Page](image)

Figure 2 – Securing the inventory access with a login screen

Our icon lecture we had last week, has inspired me for using an icon (found by Google image search) for my project. This icon was a suggestion for inventory usage.
3 Main Page

After successful login to the inventory system, it displays the main page (Figure 3). The main page would consist of three items: drop-down menu, main display area, and secondary display area.

Figure 3 – Main page of the inventory system
3.1 Drop-down menus
The drop-down menus would allow the user in selecting which rooms to display the hardware for, display all hardware, add hardware and select in which category to display the inventory for. Basically, this is where a user starts interacting with the system, i.e. “Start Here”.

3.2 Main display area
The main display area would be used to display the inventory records saved in the database. This area would be populated with data based on user clicking on choices available under drop-down menu.

To display details of a record shown in main display area, user can click on a tag shown in blue located on the left hand side of each record. To edit or delete a record shown in the main display area, user can click the edit or delete icon. Once again the icon lecture we had last week has inspired me for finding icons for a specific task. I used the icon 📊 for editing the specific inventory database record, and used the icon ✗ for deleting the specific record from the inventory database. I searched Google images for icons, but then later found that the icons used by phpMyAdmin seems to be more appropriate to use for my application. Note: phpMyAdmin is a freeware web application for managing MySQL database which is available from http://www.phpmyadmin.net/home_page/index.php

3.3 Secondary display area
The secondary display area which is located toward the bottom of the page, would be used to display the details of each inventory records that user wants to display.
4 Editing or Adding Inventory Records

To allow efficient use of the screen and avoid directing user to a different page as user clicks items on the page, I would like to use page fade in and out feature for the editing or adding records to the database. This idea came to me from Netflix and other nicely designed web sites, which they do a great job for overlapping and fading the window behind it for maximizes screen usage.

Basically, the way I intend to design this section of the interface is that, when a user wants to edit or add a new record to the inventory, the current window would fade a bit, and overlay window is shown on top. This way, I have the whole screen for entering new data or editing existing data without having to either scroll the screen or directing the user to another page (Figure 4).

![Figure 4 – Editing or adding a new record to the inventory](image-url)