**Project Requirements Documentation**

**Team:** CSM #2

**Project:** Machine Shop Electronic Access/Inventory System

**Client:** Dr. Kevin Moore

**Description / Vision**

The College of Engineering and Computational Sciences maintains a machine shop in the basement of Brown building. The machine shop is home to many machines which require specific training to ensure safe operation. In addition, the machine shop contains many other tools which are occasionally borrowed by students and staff for various purposes around campus.

Our project is an electronic access-control and inventory system which keeps track of which users are certified for which machines, keeps a record of all machines and tools, and allows students and staff to check out tools when needed. The CECS machine shop staff will be administrators with the ability to edit the certification status of users in the system, remove users, and update the inventory system (add/remove machines/tools from the system). In addition, a log will be kept which details the time in/out for all users, the machines they used, and any tools they checked out.

Our software will help create a safer and more organized environment in the machine shop by keeping track of machine safety certifications and allowing the machine shop staff to have fast and accurate access to certification information and the inventory database.

**Requirements**

**Functional**

* Basic User
  + Blastercard Login / Logout
  + Tool Check-in / Check-out
  + Machine Usage Certification Check
  + View Machine Certifications
  + View Checked Out Tools
  + View Available Tools
* Administration (Includes Basic User Functions)
  + Data Entry
    - Add / Remove Tools
    - Add / Remove Machines
    - Add / Remove Users
    - Add / Remove Admin
    - Update each user’s machine certification status
  + Lock Out Users
  + Generate Reports
    - View Log
    - Filter log by date, user, tool, machine, locked users
    - Generate statistics for each report generated

**Non-Functional**

* Use Magnetic Strip Card Reader
* Must be open to extension
* Install system in Machine Shop

**Potential Risks**

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| **Technology Risk** | **Proposed Solution** |
| Card Reader Failure | Keyboard Input / Replace |
| Touch Screen Driver Failure | Mouse Input |
| Monitor Failure | Replace |
| Database Failure | Server / Database Backup |
| User Failure | Instruction Manual |
| Access to Blastercard Data may be denied | Manual Data Entry For All Users |
| Access to Mines Server for Database Hosting may be denied | Host Locally |
| May experience issues installing touch screen driver and windows 7 | Continue with non-touch approach |

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| **Skill Risk** | **Proposed Solution** |
| Minimal MongoDB Experience | Research |
| No experience interfacing Java and touch screen | Research |