**Spring**

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ECE4220 Project Preliminary Report

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**Fall**

# Progress Summary

**University of Missouri**

My project is going great so far. I’ve bought the Raspberry Pi 2 that I plan on using to reset the board. I’ve also received the email from FairCom to download the database software. So far my project has had some changes, just as most projects do. I’d say that my project is about fifty percent completed. I have been able to successfully ssh into my Raspberry Pi and control it while being on the same network. I have tested it on the nfs1 server and did not have any success in connecting to the Pi. I will continue with testing on the system through my home network. I believe that the nfs1 server probably has some firewall components that affected the connectivity to the Raspberry Pi. I’ve also included a 4N33 optocoupler that will act as the reset button on the TS-7250.

# Changes/ Modifications

The largest change that I made to my project sense the proposal was the change to program a kernel module. I originally was going to program a kernel module that would check for a reset command. Since the proposal I have decided to incorporate the Raspberry Pi 2 into my project. This will allow the user to log into the nfs1 server and then from there, ssh into the Raspberry Pi. I will then place a program that will send the correct signals to a 4N33 this will then connect the two wires that are used as the reset button on the boards so far. I made the kernel module change because I realized that the module would have to be installed before it could be ran. This would require that a user be already logged into the board before they can reset the board. I have decided to use a 4N33 optocoupler that can be connected to a female headphone jack that can be used to reset the boards. I want to use the female headphone jack because most of the 7250 boards use a red button on the exterior of the box to reset the board. This button is connected to the board through a headphone plug. Thus, if I used a female headphone jack, then this circuit could be easily implemented and transferred to any of the boards. I’ve also decided to try and put the FairCom database software on the Raspberry Pi. This way passwords and user names could be checked before resetting the board.

# Achievements, Experiments, and Preliminary Results

This section will detail my progress thus far in my project. I will detail what hardware and software portions I’ve finished so far this semester.

## Software

So far I was able to successfully install the Raspbian operating software on the Raspberry Pi 2 and successfully boot the system. I’ve also been able to connect to the Raspberry Pi 2 through a ssh connection via the terminal while on the same network. I was also able to navigate the file system through the ssh connection. I’ve also downloaded the proper software that will help me implement the FairCom database system. I have emailed and been in contact with the FairCom support team that has been advising me on downloading the FairCom software to the Raspberry Pi.

## Hardware

I have not yet built any hardware components so far with my project, but I have been able to design in theory the circuit required for the Raspberry Pi to reset the TS-7250 board. I have found the 4N33 optocoupler and also been able to find the headphone jack component that I could use. I have acquired the 4N33, but because the headphone jack is a simple circuit component and could be unnecessary I have not acquired the jack. Both of these two hardware components will make up the entire reset circuitry.

# Things Left to Do

The things I still need to do to complete this project is actually building the hardware components and implement the FairCom database server. The item that will take up the rest of my time is trouble shooting, loading, and implementing the FairCom server on the Raspberry Pi. After this the project will be about ninety percent complete. The code that I will need to design on the Raspberry Pi is minimal.