GNG1103 Group 9 : Deliverable B

The client wishes for something in the CEED faculty to be automated where by minimal human assistance and input is necessary for its function. It is desirable that it provides as much information about the space as possible to make life easier for the employees in the space. It is important to the client that the DashBoard panel is intuitive for an inexperienced, non-savvy user and is as simple, yet the client would like the DashBoard panel to be attractive.

The client mentioned that Sunday was the busiest day of the week due to several contributing factors (Open to the public and last day of the weekend,etc). Being able to predict busy hours of each day during the week would be a nice addition to the space, as well as encouraging people to come when it's not busy, this would help to dissipate the traffic in the space and encourage a more uniform flow of people throughout the week. Doing so would alleviate pressure from the employees and the space in general by providing information on the hours and days that tend to be the busiest. A feature that would help the space is being able to predict if equipment is reserved or not prior to getting into the space.

The Client has many problems with keeping track of inventory present in the building, especially when the client(s) are not able to be in the space for a prolonged period of time, being able to track shortages and the overall inventory of the space would ease the burden placed by the current method of tracking inventory.

There is a tendency for most people, especially those who are new to the building and the workshops to be unable to find components and tools around the shop. A means to track the location of components and tools in the space should allow for the space to be more productive for those in it.

SD cards go missing often in the CEED spaces which becomes a problem as the current solution is now for the employees to now manually hand them out and track those who are currently using them. As a more general option it would be helpful to be able to track all the tools/machines and components that are being used and by whom, in order to be able to hold people accountable for loss and damages.

Benchmark parallels to this project would include self-serve check-in/check-out machines and online pizza tracker. Both these examples include a small to large level of automation, allowing the user to interact with the system with ease and allowing the employee to focus on other tasks.

In conclusion CEED employees that maintain and optimize the CEED building would like us to automate something in the space using Ross Dashboard and a microcontroller that will help them with any of their problems. The automation could include several things of just a few of the above mentioned problems such as: Being able to track components, tools, and machine use, tracking the number of people that enter the space in a day for each day of the week, etc.

Problem Statement

A need exists for the CEED employees that optimizes the CEED building through automation using Ross Dashboard and a microcontroller; that is under the $100 budget and easy to operate and maintain.