***HEAKEME WILLIAMS***

***PROGRESS REPORT***

**CRYSTAL FOUNTAINS**

*BACKGROUND*

In September 2017, a variety of projects were given to us from Prof. Kristian Medri to choose from, in which I chose crystal fountains. This was then developed into team work project with a classmate named Erick Kantos. We then had a discussion which subsequently lead us to an agreement of meeting every Tuesday at 10:00a.m. to 3:00p.m. in room D225 along with Prof. Kristian and Prototype specialist Vlad.

*PROJECT DESCRIPTION*

The crystal fountain uses a DMX-Generator which produces the DMX differential signals, this then travels to the DMX-Sender board through the XLR cables in which it is translated into single-ended signal for data in the module. The signal then travels to the DMX-Receiver board via the antennae. The receiver board then converts this single-ended signal back to differential using one the chips and then plugs it right back into the light, which results in the different light sequence based on what is being produced from the generator device.

*PROJECT SCHEDULE CONSIDERATIONS*

The project was broken down into main points which then contained subpoints expounding how the main ones would be achieved.

* Investigation (Deadline: 13th September, 2017)- In this point, breaking down of each project was done and when ONE was chosen. It was then discussed with the lecturer and also observation of the critical path was done here as well (**COMPLETED**).
* Analysis/Documentation (Deadline: 3rd October, 2017)- Project proposal and schedule were completed and submitted to professor in this milestone. After, parts and their specifications were analyzed and Budget was completed and submitted. (**COMPLETED**).
* Reading Week (Deadline: 10th October, 2017)- During reading week, Lynda videos for soldering and the Raspberry pi was completed. (**COMPLETED**).
* **UNFORSEEN STRIKE** (Deadline: 25th October, 2017)- Progress report was due in this point, also assembly and soldering of the PCB was suppose to be finished in this section but was postponed to a further date due to the strike however it completed.
* Welcome Back (Deadline: 24th November, 2017)-In this week, blog was placed in reverse chronological order and a report on what you did with your project during the 5 weeks of strike(**COMPLETED**).
* Build/Display (Deadline: 1st December, 2017)- PCB milestone was due in this week and was to be peer graded. We didn’t do the PCB but our individual milestone for our board was up to date(**COMPLETED**).
* Organizing (Deadline: 8th November, 2017)- Group Placard was submitted in this week and individual movie script was also due(**COMPLETED**).
* Designing (Deadline: 15th November, 2017)- The build video was due this week and was submitted on time(**COMPLETED**).

*PROJECT PROPOSAL CONSIDERATIONS*

In line with the project proposal objectives I am now 75% completed towards my main goal which is to finish the entire project however, some unforeseen errors have occurred which will be discussed in the following.

*PROJECT PROBLEMS/OPPORTUNITIES*

Since my choice was the crystal fountain, it meant that my board would be different than the occasional PCB board. This provided me with the opportunity of learning to use Eagle which would help me design my own DMX-Sender board. However, with an opportunity to learn something new means you will run into problems. The problems I ran into were

1. This first one occurred where I was making changes to the board while the schematic was off in eagle which was subsequently fixed by reopening the schematic and making the same changes on the schematic as I did on the board.
2. The second designing error occurred was an overlapping error which happened because the routing wires crossing over each other and it was fixed by rerouting that.
3. The third designing error occurred in which a connection wasn’t made to VCC, this was fixed during the soldering process by attach an external wire.
4. This error was a building error which occurred on me ordering the wrong module and was fixed by reordering the right series. I learned why the right module was needed.
5. **The last problem** I ran into is which my board in which the module was reversed in comparison to board. This was a major problem and was fixed by me redesigning the entire board.

*PROJECT BUDGET CONSIDERATION*

Budget started off to be $200 in which $90 was spent on my raspberry pi kit, and another $60 was spent on my parts needed for the DMX-Sender board. After, the module problem $40 was spent to get the correct module and now with the major problem another $60 dollars is needed. Hence, Budget left is -$50.