FINAL PROJECT REPORT

Due Date: Tuesday, 12/10, by 11:59pm
Team Assignment
Points: 35

Your Task:
Create a final report and prototype instruction manual for your project.

What to Submit?
Submit a Word or PDF file that includes the following as separate sections within the document:
1. An executive summary at the beginning of your report, which states your project objective (design goals, constraints, criteria) and how you achieved it. [There are examples of two well-written executive summaries from previous EGR 201 reports posted on the course Canvas site with this assignment.]
2. A complete user's guide for your teacher client to assemble, operate, and troubleshoot your prototype. Include all important information your teacher client will want / need to know about your prototype in order to use it, including any code that is required to update / operate the prototype.
3. A description of the user feedback you obtained during the final project demonstration, and any potential future changes / iterations you might recommend for your prototype
4. A table of overall expenses

Submit your report electronically to the course Canvas site. Late assignments will not be accepted for course credit, but will be evaluated for learning purposes.

How Will You Be Graded?
20 points: systems thinking (S)
- (5 pts) Executive summary clearly and concisely describes the overall project
- (12 pts) User guide provides all the information needed to assemble, operate, and troubleshoot the prototype
- (3 pts) The table of overall expenses includes all expenses for the project and demonstrates that the project met the budget constraint of $200

8 points: research, testing, & evaluation (RTE)
- (4 pts) A complete description of obtained user feedback is provided.
- (4 pts) Ideas are provided for future changes/iterations

7 points: communication & organization (CO)
- (3 pts) The report is organized in a clear and logical way
- (2 pts) The report is free of grammar, spelling, and punctuation errors.
- (2 pts) All figures / tables / diagrams in the report are captioned, numbered, and referred to within the text of the report

Cochlear Implant Simulator
Final Report & Prototype Instruction Manual

Team Members:
Student 1, Student 2, Student 3, Student 4

Figure 1. An image of our prototype.

Executive Summary:
The objective of our project was to create a device that would allow high school students the ability to more easily understand the cochlear implant. More specifically, where it is, and how it works. We took this goal and decided to take a more hands on approach for the students. We decided to make a cochlear implant simulator that would allow the students to try to insert a cochlear implant, just as a doctor would. For our project we had many constraints, one of the biggest constraints was a $200 budget. Furthermore, the design had to be safe for the classroom, and be able to be easily stored when the teacher was not using it. Since students will use the device, it also had to be durable and user friendly. In order to meet our criteria, we decided to make the box of a smaller size (Figure 1), allowing us to use less of all of the components. Additionally, this would allow the simulator to be more easily stored while still being easily seen by the students as they are using the simulator.

Particle Demonstrator

Student 1, Student 2, Student 3, Student 4

Executive Summary:

For our final project, we were tasked with making a Particle Demonstrator. The particle demonstrator is a tool used to show how particles move through the different stages of matter. It needed to show how particles vibrate in place as a solid and then start vibrating faster as energy increases, representing a liquid. In the final stage, the particles bounce around like a gas. The display was to include a clear cylinder and a type of ball that would represent the particles. It also needed to be aesthetically pleasing and be large enough for the students in the back of a classroom to see. Some other constraints were to use a microcontroller and our budget was $200.

In order to satisfy the structural needs of the project, we purchased a clear beverage container that would serve as the cylinder in which the particles are displayed, two different sizes of ping-pong balls to represent the particles, and a subwoofer as the base that was used to move the balls. We used the display piece of the drink dispenser as the bottom of the cylinder. We had to cut out the lip on the inside of the display piece and screwed that down to the top of the subwoofer right over the speaker. We then put hooks on the display piece and the drink dispenser and secured the two together by using rubber bands.