

**Milestone 6 –Final Project Detailed Design Report**

In this document, your group is to expand the report submitted with Milestone 4. The intent is that your entire product can be recreated by using the information contained in this report.

Overview:

- Should reflect the entire completed project with enough detail so that your product could be recreated.
- Submitted to Gradescope as a PDF before 11:59 on 5/3/19
- This is a group project. Only a single document per group.

Submission to Gradescope **MUST INCLUDE THE FOLLOWING!**

- Names, NetId's and Email address of ALL team members
- Name of your project
- Abstract of your project (HARD LIMIT of 100 words or LESS!!!)
- Detailed Project Ideas
  - **3 Required Sections**
    - 1. Details Project Description**
      - **Information of Project as a Whole**
      - **Information of the Sub-Parts of your Project**
    - 2. Project Design including Expected Inputs/Outputs, EXPANDED**
    - 3. Communication Details for inter-Arduino Communication**
  - No limit on size of each section
  - Each section **MUST** be at least a paragraph long (multiple paragraphs preferred)
- **REQUIRED Supporting Materials**
  - **Timeline of Development**
  - **List of Materials Needed**
  - **List of References**
  - **Sketches/Diagrams**
    - **These are to help identify your project and its design.**
    - **High Level Diagrams of the Project as a Whole**
    - **Lower Level Diagrams showing what is connected to EACH Arduino**
      - **One Diagram per Arduino**
      - **All Input/Outputs Devices are to be shown**
    - **Code (.ino files) for each Arduino**
  - Description of the original work being attempted by your project.

**When submitting to Gradescope, this will be submitted as a Group Project. You will need to specify/select ALL MEMBERS of your group at time of submission. It will be the responsibility of the group to ensure that this is properly done.**

**Original Requirements for the Project**

Must work in groups of at least 2 people, but no more than 4 people. Group project should utilize number people x requirements below ( if group of 3 people, then need to use 3 arduino's and a total of 6 different external devices)

Make use of at least one arduino (or similar) microcontroller per person in the group.

Utilize at least two different external devices (16x2 display, LEDs, pushbuttons, touch sensors, etc) per person in the group.

Utilize some communication mechanism (ethernet, bluetooth, serial, etc)

Involve some original work - You can find lots of tutorials, how to's, step by step directions for lots of projects. I am fine with you starting with these but some original work **MUST** be included. If your idea involves original work, but none is implemented, the project will not receive a very good score.

For example, building a 4x4x4 LED cube <http://www.instructables.com/id/The-4x4x4-LED-cube-Arduino/> is not a great project by itself. But incorporating a bluetooth to a computer/phone/tablet to allow control of the LED cube is better or using 4x4x4 led cube in a game is another idea.