

Requirements

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.

Deliverables

- project idea(s) - 1 paragraph per idea - done individually, posted to project ideas note on piazza as a followup before 11:59pm on Friday 2/1/19

- Teams Form and 1-2 page write-up of Project Idea - done in groups (2-4 people), posted in Gradescope as a PDF before 11:59 on ??? Include the following:
 - All Names and NetId's of team members
 - Name of your project
 - 3 paragraphs of Project Idea (Overall Description of Idea, Initial Project Design including Expected Inputs/Outputs, Expected Plan for Use and Communication between the multiple Arduinos)
 - Proposed Timeline of Development
 - List of Materials Needed
 - List of References
 - Include any sketches that might help identify

- 4-page writeup documenting Full Design and Current Development Status - done in groups, posted as a pdf to Gradescope before 11:59pm on ???

- final report - no page requirement, but anticipate reports being 15 - 30 pages, want to see pictures, results, problems encountered, how problems were resolved, resources used, etc. posted as a pdf to Gradescope before 11:59 on ??
- critique of group performance - done individually submitted via web form before 12/7 11:59pm.
- Presentation of project at Engineering Expo 4/26/19 - approximately 5 minute showcasing project, what works, what doesn't, many will be shown in class the last week of the semester submitted; Slides of Presentation due 11:59pm on THURSDAY 4/25/19
- Project Checkout - on campus, must be done before end of lab on the last week of classes.