**[TITLE]**

School of Engineering and Applied Sciences

Harvard University

Cambridge MA.

Description: [One sentence description of your project]

By: [Name(s)]

Class: ES50

Instructor: Gu-Yeon Wei & Christopher Lombardo

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**ABSTRACT**

Brief paragraph giving a quick description of your project and what it is trying to achieve, i.e., what is the goal/motivation of your project?

**INTRODUCTION**

Quick introduction of the project, the overall goal, basic operating principles, why did you choose this project, why is it cool, etc.

**DESIGN**

Talk about the design options you considered and the design decisions you made. Add pictures of any drawings/plans you made or used. Explain why you made certain design decisions and walk us through the design process including the building of any prototypes and testing. Add any schematics and pictures/calculations made. You can add blueprints and stuff to the appendix, and refer to it in this section.

**PARTS LIST**

Provide a table that summarizes all parts and materials you used. Include part numbers and links (assuming that you ordered them on-line), quantities used, and the price (including the grand-total). Also indicate the parts that you found in the lab, but also try to identify their costs and on-line sources.

**PROJECT IMPLEMENTATION**

Describe how you went about implementing your project. E.g. “first we did this, then that, and ….” . Indicate problems that you encountered and how you addressed them. It is in this section that you would provide practical advice and guidance to people trying to reproduce your results.

Here include photos of your product in action. Including links to videos too - YouTube is best! We love videos!

Good template to follow is Instructables   
(e.g. <http://www.instructables.com/id/Self-Contained-7x7x7-LED-Cube/?ALLSTEPS>). In fact, our hope is that one day in near future (next year?) we have our own ES 50 instructables page.

**TEAM MANAGEMENT**

In this section discuss who did what, how did you allocate tasks?

**OUTLOOK AND POSSIBLE IMPROVEMENTS**

Describe how this project could be improved further… i.e with more time/resources, what could be improved, extended or changed?

**ACKNOWLEDGEMENTS**:

It is good to acknowledge any help you received. Especially your fellow students, TFs, and proctors!

**DISCLAIMER**

Indicate here if it is okay/ not okay with you to share your report, codes that you wrote, photos and videos of your product.

**REFERENCES:**

List any references you cite in your report. This includes web site, software that you downloaded, Youtube videos that were helpful, various on-line tutorials, etc.

**APPENDIX**

Attach any extra drawings/diagrams that could be useful in this report or are referred to in the report but are too bulky to include in the text … e.g. extra photos, blueprints etc.

Also include the codes (arduino, processing, matlab) that you wrote/ modified.

*NOTE: if you have substantial code (> 200 lines or multiple files) please save your code and this report in a zip archive titled TeamX\_ES50\_Final\_Project\_Report\_2015.zip and submit that to Canvas. Each team should submit only one file - a zip or a pdf.*

**Submit as PDF OR zip archive including report and code**