# Electronic Board Game

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**Electronic Board Game 1**

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## 

## Abstract

Brief description of project (<150 words).

## Background

In this section, you should discuss: the project motivation, user research indicating a need, and benefits and limitations of existing alternatives. Make sure to address these course outcomes:

* apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, & welfare, as well as global, cultural, social, environmental, & economic factors
* recognize ethical & professional responsibilities in engineering situations & make informed judgments, which consider the impact of engineering solutions in global, economic, environmental, & societal contexts

## User experience

Make sure to address these course outcomes:

* communicate effectively with a range of audiences (communication with end users)
* apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, & welfare, as well as global, cultural, social, environmental, & economic factors
* ability to recognize ethical & professional responsibilities in engineering situations & make informed judgments, which consider the impact of engineering solutions in global, economic, environmental, & societal contexts
* acquire & apply new knowledge as needed, using appropriate learning strategies

### Personas

Discuss your personas, one at a time. Explain how you arrived at these personas.

Include the user research and affinity maps you used to develop the personas, and also a copy of the personas, as Appendix A.

### Wireframes and sketch

Discuss your wireframes. Explain how you used the UX principles we learned about and the personas you developed to inform your design.

Include a copy of your wireframes and sketches as Appendix B

## Parts selection

Insert your parts selection discussion here. Use a level 3 header to separate each subsystem.

Make sure to update, to reflect any changes since DP1!

This section should address these course outcomes:

* identify, formulate, & solve complex engineering problems by applying principles of engineering, science, & mathematics
* acquire & apply new knowledge as needed, using appropriate learning strategies

Include BOM as Appendix C.

## Schematic

Walk through each subsystem in your schematic (with figures) and discuss. Use a level 3 header to separate each subsystem.

Make sure to update, to reflect any changes since DP1!

This section should address these course outcomes:

* identify, formulate, & solve complex engineering problems by applying principles of engineering, science, & mathematics
* acquire & apply new knowledge as needed, using appropriate learning strategies

Include complete schematic as Appendix D.

## Software

Describe the basic design of your software library and your application. (Diagrams, flowcharts, etc. are often helpful.)

This section should address these course outcomes:

* identify, formulate, & solve complex engineering problems by applying principles of engineering, science, & mathematics
* acquire & apply new knowledge as needed, using appropriate learning strategies

Include all code as Appendix E - ZIP file of repo, which you can get directly from Github.

## Prototype

This section should address these course outcomes:

* identify, formulate, & solve complex engineering problems by applying principles of engineering, science, & mathematics
* acquire & apply new knowledge as needed, using appropriate learning strategies

### Breadboard prototype and testing

Describe your breadboard prototype, the tests, and the test results.

This section should also address these course outcomes:

* develop & conduct appropriate experimentation, analyze & interpret data, & use engineering judgment to draw conclusions

### PCB design

Show the PCB layout, and explain your decisions with respect to layout of parts.

Show PCB layout as Appendix F.

### Perfboard prototype

Show the perfboard layout planning sheet and a photo of your completed perfboard. Explain your layout decisions.

Show perfboard planning sheet and photo as Appendix G.

## Analysis of applicable standards

We will work on this together in class.

## Project planning and teamwork

Describe how you planned and organized the project, and how you worked as a team (division of labor, etc.) (If you are a one-person team, describe your collaboration with your advisors.)

This section should address these course outcomes:

* function effectively on a team whose members together provide leadership, create a collaborative & inclusive environment, establish goals, plan tasks, & meet objectives

As Appendix H, include your weekly screenshots of the project board (with date attached).

## Conclusions and recommendations

Discuss your design. What challenges did you face? What are your recommendations for future iterations?

Please address:

* apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, & welfare, as well as global, cultural, social, environmental, & economic factors
* recognize ethical & professional responsibilities in engineering situations & make informed judgments, which consider the impact of engineering solutions in global, economic, environmental, & societal contexts

As Appendix I, include your demo video and pitch video.

## References

See <https://www.zotero.org/nyu-compe-dp/library> to help you get started.