After completing the basic Arduino tutorials, the LCD & Control System lab exercises, and reviewing the functional specifications of your final Arduino surface mount reflow oven specification in the Reflow Tutorial, you should have demonstrated the function of your Arduino-based reflow oven controller using the thermocouple and heater setup provided by Dr. Palmeri[1]. After successfully demonstrating the function and features of your device, you are expected to submit a single, formal written report for your group that builds upon all of the lab report experience you have gained throughout the semester. Your final report will also function as a user manual and troubleshooting guide. Please be sure to include the items below in your final report; these are the minimum expectations, and additional items can be included as you feel appropriate.

- Introduction: provide an overview of the function of a reflow oven, and the functional need for your Arduino microcontroller in this project
- Background: provide factual information about any of the pieces of this project that would be useful for the reader to know to interpret items later in your report
- Materials & Methods: provide an overview of the materials and methods used in this project. Please include information about the thermocouple stage (including linearizing circuit) and the SSR / heater stage that is appropriate from the context of interfacing with your Arduino microcontroller. You can reference all of your Arduino code in an appendix. It may be useful to include flow charts of your code structure, your overall device function, and your user interface.
- Results: provide an overview of how well your device performed in the context of the project demonstration
- Discussion: provide a discussion of your overall approach, and in hindsight, critical analysis of anything that you would change to better meet the functional specifications of your device. Also highlight any significant learning points for your group during the development of the functional microcontroller. If you used GitHub for your project code management, then please comment on your collective group experience using this version control software tool.[2]
- Conclusions
- Appendices
  - Arduino microcontroller code, **commented**. Please include a URL to your GitHub repository if one was utilized throughout the project.
  - Simple user manual: if someone were to turn on the reflow oven with your code already uploaded to the microcontroller, then how would they use the device
  - Troubleshooting guide: if you know that your microcontroller code has quirks, then please provide a Troubleshooting table of common problems and how to remedy them (if they can be remedied by the end user)

As a general tip when preparing this report, *well-done* figures, flow charts and tables can be used to effectively replace pages of text. Please be sure to include all references to sources utilized throughout your project development and analysis.

[1] Designed and constructed by Will Scheideler, Oliver Fang, and Matt Brown.
[2] Negative feedback will not be held against you!