**Automatic Pet Feeder**aka. Nacho Average Pet Feeder

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Spring 2023 ECE 381 Microcontrollers

**Introduction**

This is the final laboratory for the Spring 2023 Microcontrollers class. For our project, we had decided that we wanted to make an automated pet feeder for Caleb’s parents. The way this came to life was the cat in question

**Goal**

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**Materials**

|  |  |
| --- | --- |
| PSoC4 4200M Microcontroller | 1 |
| Bipolar NEMA17 Stepper Motor | 1 |
| 20x4 Hitachi I2C 2004 LCD | 1 |
| Push Button | 1 |
| Mechanical Encoder | 1 |
| L293DNE Bipolar Stepper Motor Driver | 1 |
| PCF8563 I2C Real-time Clock Unit | 1 |
| LED’s of Various Colors | 4 |
| 12V to 5V Buck Converter | 1 |
| 12V 6A Power Supply | 1 |
| P2N2222A Transistor | 2 |
| Various 3D Prints | 7 |
| “Nacho Average Pet Feeder” PCB v 1.3.5 | 1 |
| 1x6 2.54mm Pitch Dupont Connector | 1 |
| 1x4 2.54mm Pitch Dupont Connector | 6 |
| 1x3 2.54mm Pitch Dupont Connector | 1 |
| 1x2 2.54mm Pitch Dupont Connector | 8 |
| 1x1 2.54mm Pitch Dupont Connector | 2 |
| 100nF Non-Polarized Capacitor | 3 |
| 1μF Non-Polarized Capacitor | 1 |
| 10μF Polarized Capacitor | 2 |
| 470Ω Resistor | 6 |
| 1KΩ Resistor | 4 |

**Procedure and Results**

**Part 1 – Setup in PSoC Creator**

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**Part 2 – Hardware and Wiring**

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**Part 3 – Software**

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**Testing Methodology**

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**Conclusion**

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**Appendix**

*Main Code*