Milestone List:

1. Begin researching how to create a library in Arduino ✓
2. Outline the plan for creating a library and address all the steps it will require ✓
3. Obtain the materials for running the library on Arduino (OCT 30th)
4. Begin writing the library (OCT 30th)
5. Finish the rough draft of the library and begin testing it (JAN 1st)
6. Modify the library as needed and continue testing (JAN - MAR)
7. Finish testing the library once it meets all requirements (APR 5th)
8. Demonstrate the completed library by running it on the Arduino (End of spring semester)

**Timeline:**

| Task | Start Date | Completion Date |
|---|---|---|
| Obtain Arduino and attachments | OCT 20th | OCT 30th |
| Research current sound functions and libraries | OCT 20th | NOV 5th |
| Specify functionality of robot prior to development of library | OCT 30th | NOV 5th |
| Design library by itemizing required functions | NOV 5th | JAN 1st |
| Investigate quality of sound sensors | NOV 5th | NOV 10th |
| Develop original outline for the library | NOV 10th | NOV 30th |
| Document test results | JAN 1st | MAR 30th |
| Edit, debug, and develop the code | NOV 30th | MAR 30th |
| Test the functions on the robot | JAN 1st | MAR 30th |
| Validate the results of the tests | MAR 30th | End of spring semester |

**Effort Matrix:**

| Task | Hours of Effort |
| --- | --- |
| Obtain Arduino and attachments | 3+ hours |
| Research current sound functions and libraries | 5 - 10 hours |
| Specify functionality of robot prior to development of library | 4 hours |
| Design library by itemizing required functions | 4 hours |
| Investigate quality of sound sensors | 3 hours |
| Develop original outline for the library | 6 - 12 hours |
| Document test results | 3+ hours |
| Edit, debug, and develop the code | 30+ hours |
| Test the functions on the robot | 15+ hours |
| Validate the results of the tests | 10 hours |