Project Team: DCA

Project Title: Non-Invasive Ultra-sonic Meter Reader

Team Members: Darren, Carter, Austin

Sprint No. and Demonstration Date (YYYY-MM-DD): Sprint 1 (2022-10-20)

**Sprint Demonstration Preparation Checklist**

Sprint demonstration preparation checklist is provided to ensure readiness for demonstration. Please make sure all preparation tasks, listed below, are complete. If any task is not completed, the sprint results may not be considered ready for demonstration and a grade of zero may be assigned for the sprint.

|  |  |  |
| --- | --- | --- |
| **Task No.** | **Task** | **Completed (Yes/No)** |
| 1 | Completed Demonstration Preparation Checklist? | Yes |
| 2 | Highlighted/marked the progress for this sprint on:   1. All figures including schematics, block diagrams, and flowcharts; 2. Software code by adding comments indicating work for the sprint; | Yes |
| 3 | Submitted items in Task 2 (figures and software), above, to eConestoga as a single compressed file in “zip” format. | Yes |

**Sprint Feature List**

On this Separate Document please list all features/tasks from Sprint backlog. Please attach Test Results for each Feature as a separate document. Please attach Design Documentation, Schematics, Flowcharts, etc.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#**  **(Use number from Sprint Backlog)** | **Feature Description** | **Percent Complete** | **Tested?**  **(Yes or No)** | **Faculty Assessment** |
| 1 | **Review ATSAMD20 dev kit** | *100* | *Yes* |  |
| 2 | **Setup Ide Enviroment for firmware (Microchip Studio)** | *100* | *Yes* |  |
| 3 | **Led blink using Dev Board** | *100* | *Yes* |  |
| 4 | **SAMD21 implement/research Timers** | *90* | No |  |
| 5 | **SAMD21 implement/research Interrupts** | *75* | No |  |
| 6 | **SAMD21 implement/research Watchdog** | *90* | No |  |
| 7 | **SAMD21 implement/research Clocks** | 80 | No |  |
| 8 | **Interface devboard ENC28J60** | 10 | No |  |
| 9 | **Interface with devboard's ATWINC1500** | 85 | *Yes* |  |
| 10 | **Simulate using Wink card to communicate with a network on dev board** | 25 | No |  |
| 11 | **Simulate using ENC card to communicate with network on dev board** | 0 | No |  |
| 12 | **Explore KiCad software** | 100 | Yes |  |
| 13 | **Design a Power Source** | 100 | Yes |  |
| 14 | **Solder Power Circuit** | 0 | No |  |
| 15 | **Test Power Sources** | 0 | No |  |
| 16 | **Add ATSAMD20E18 to circuit** | 100 | Yes |  |
| 17 | **Add ENC28J60to circuit** | 100 | Yes |  |
| 18 | **Add ATWINC1500 circuit** | 100 | Yes |  |
| 19 | **Add LED(status code) circuit** | 100 | Yes |  |
| 20 | **Research communication circuit(how to upload firmware to a microcontroller)** | 100 | Yes |  |
| 21 | **Implement communication port to hardware prototype** | 100 | Yes |  |
| 22 | **Upload firmware to prototype for the first time(blink led)** | 0 | No |  |
| 23 | **Research Ultrasonic sensors** | 100 | Yes |  |
| 24 | **Determine/Order peizos that will work for our use case** | 100 | Yes |  |
| 25 | **Build prototypes using ordered sensors** | 0 | No |  |
| 26 | **Build testing pipes for sensors(closed loop)** | 100 | Yes |  |
| 27 | **Determine final sensor used for project** | 0 | No |  |
| 28 | **Create alpha-prototype of ultrasonic sensor** | 0 | No |  |
| 29 | **Research how to read gear revolutions/ultrasonic readings to calculate flow** | 100 | Yes |  |