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CSE121 Spring 2024
Lab 4

Report.pdf

4.1

[ChatGPT link for i2c gyro/accelerometer reading]

I used the accelerometer to measure the orientation of the board because I found it to be more accurate than the gyroscope readings.

Results:

```
I (293) main_task: Started on CPU0
I (293) main_task: Calling app_main()
I (293) ICM42670-P: I2C initialized successfully
I (303) main_task: Returned from app_main()
I (303) ICM42670-P: FLAT
I (413) ICM42670-P: FLAT
I (513) ICM42670-P: FLAT
I (613) ICM42670-P: FLAT
I (713) ICM42670-P: FLAT
I (813) ICM42670-P: RIGHT
I (913) ICM42670-P: UP RIGHT
I (1013) ICM42670-P: UP
I (1113) ICM42670-P: UP
I (1213) ICM42670-P: UP LEFT
I (1313) ICM42670-P: UP LEFT
I (1413) ICM42670-P: UP LEFT
I (1513) ICM42670-P: UP LEFT
I (1613) ICM42670-P: UP LEFT
I (1713) ICM42670-P: UP LEFT
I (1813) ICM42670-P: UP RIGHT
I (1913) ICM42670-P: UP RIGHT
I (2013) ICM42670-P: UP RIGHT
I (2113) ICM42670-P: UP RIGHT
I (2213) ICM42670-P: UP RIGHT
I (2313) ICM42670-P: UP RIGHT
I (2413) ICM42670-P: UP LEFT
I (2513) ICM42670-P: UP
I (2613) ICM42670-P: UP LEFT
I (2713) ICM42670-P: UP LEFT
I (2813) ICM42670-P: RIGHT
I (2913) ICM42670-P: DOWN RIGHT
I (3013) ICM42670-P: DOWN
I (3113) ICM42670-P: DOWN
I (3213) ICM42670-P: DOWN
I (3313) ICM42670-P: DOWN LEFT
I (3413) ICM42670-P: DOWN LEFT
I (3513) ICM42670-P: DOWN
I (3613) ICM42670-P: DOWN RIGHT
I (3713) ICM42670-P: DOWN RIGHT
I (3813) ICM42670-P: DOWN RIGHT
I (3913) ICM42670-P: DOWN RIGHT
I (4013) ICM42670-P: DOWN RIGHT
I (4113) ICM42670-P: DOWN RIGHT
I (4213) ICM42670-P: FLAT
```

4.2

For this part, I used the ble_hidd_demo_main.c to get starter code for the bluetooth mouse. From there I removed all the parts for keyboard and other peripherals and set the mouse to move left and right every 5 seconds.

4.3

For this part, I just included my code from part one and combined it into the code from part 2 so that the mouse moves with the accelerometer. I used a multiplier when accelerometer values were high to make the mouse move faster.