

LAB 4

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PART 1:

```
printf("Echoing output: %8.3lf, %7.4lf, %7.4lf, %7.4lf\n", (double)t / 1000, ax, ay, az);
```

```
gmonroe@C02018-11 /cygdrive/u/se185/lab4
$ ./ds4rd.exe -d 054c:05c4 -D DS4_BT -t -a | ./lab4.exe
Echoing output: 0.006, -0.0002, -0.0005, 0.0009
Echoing output: 0.006, -0.0002, -0.0006, 0.0006
Echoing output: 0.007, -0.0004, -0.0005, 0.0005
Echoing output: 0.008, -0.0006, -0.0005, 0.0005
Echoing output: 0.009, -0.0004, -0.0007, 0.0010
```

I converted the int to a double and divided how many milliseconds are in a second to get it to display in seconds instead in ms. I used the following process(%8.3lf) from classes and labs to display decimal places if present.

PART 2:

```
double mag(double x2, double y2, double z2);
```

```
double mag(double x2, double y2, double z2){
```

```
    /*      CODE SECTION 1 */
```

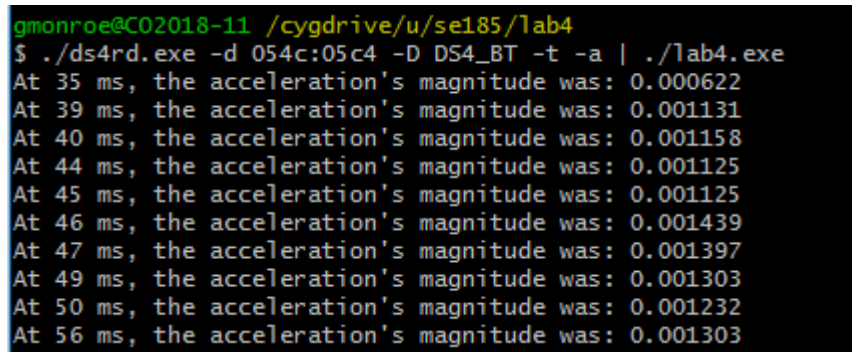
```
    double sqrtX = pow(x2, 2);
```

```
    double sqrtY = pow(y2, 2);
```

```
    double sqrtZ = pow(z2, 2);
```

```
    return sqrt(sqrtX + sqrtY + sqrtZ);
```

```
}
```



```
gmonroe@C02018-11 /cygdrive/u/se185/lab4
$ ./ds4rd.exe -d 054c:05c4 -D DS4_BT -t -a | ./lab4.exe
At 35 ms, the acceleration's magnitude was: 0.000622
At 39 ms, the acceleration's magnitude was: 0.001131
At 40 ms, the acceleration's magnitude was: 0.001158
At 44 ms, the acceleration's magnitude was: 0.001125
At 45 ms, the acceleration's magnitude was: 0.001125
At 46 ms, the acceleration's magnitude was: 0.001439
At 47 ms, the acceleration's magnitude was: 0.001397
At 49 ms, the acceleration's magnitude was: 0.001303
At 50 ms, the acceleration's magnitude was: 0.001232
At 56 ms, the acceleration's magnitude was: 0.001303
```

Looking at the code you most first do the required powers for each axis before you can square and add everything. You most also have the function Initialized before you can use it(above where ever you call it).

PART 3:

```
int minutes(int t){
    t = (int) t / 1000;
    t = (int) t / 60;
    return (int) t;
}

int seconds(int t){
    t = (int) t / 1000;
    int mt = (int) t / 60;
    if (t > 60){
        t = (int) t - (mt * 60);
    }
    return (int) t;
}

int millis(int t){
    int st = (int) t / 1000;
    if (t > 1000){
        t = (int) t - (st * 1000);
    }
    return t;
}
```

```
At 1 minutes, 16 seconds, and 202 milliseconds it was: 0.001280
At 1 minutes, 16 seconds, and 206 milliseconds it was: 0.001157
At 1 minutes, 16 seconds, and 207 milliseconds it was: 0.000818
At 1 minutes, 16 seconds, and 209 milliseconds it was: 0.001365
At 1 minutes, 16 seconds, and 210 milliseconds it was: 0.001348
At 1 minutes, 16 seconds, and 211 milliseconds it was: 0.001309
At 1 minutes, 16 seconds, and 212 milliseconds it was: 0.001326
At 1 minutes, 16 seconds, and 214 milliseconds it was: 0.001263
At 1 minutes, 16 seconds, and 219 milliseconds it was: 0.001177
```

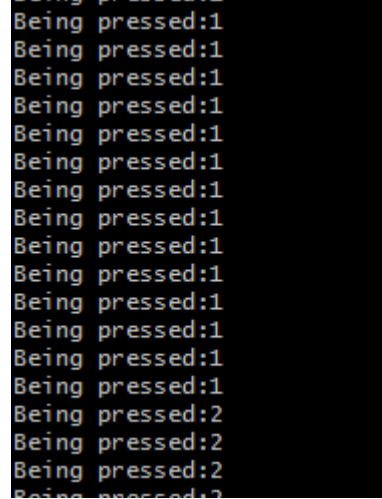
```
gmonroe@C02018-11 /cygdrive/u/se185/lab4
$
```

After Figuring out the rounding of the numbers, I then needed to calculate the change of seconds and milliseconds to make sure that it showed correctly You can see that in the IF statements in the actual functions.

PART 4:

```
int returnPressed(int a1, int a2, int a3, int a4){  
    if (a1 == 1){  
        counti += 1;  
    }  
    if (a2 == 1){  
        counti += 1;  
    }  
    if (a3 == 1){  
        counti += 1;  
    }  
    if (a4 == 1){  
        counti += 1;  
    }  
    printf("Being pressed:%d\n", counti);  
    counti = 0;  
    fflush(stdout);  
}
```

Being pressed:1



```
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:1  
Being pressed:2  
Being pressed:2  
Being pressed:2
```

Have to see which one is pressed after and clear the pressed after presented.