

Conditionals

LAB #05

SECTION #06

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Problem

Developing a program that can detect where and how the ps4 controller is moving. Using the flags, we must output, up, down, left, right, front and back. Also, we must include a delay for when the controller is moving outside of our parameters.

Analysis

Since the inputs are given, we must develop tolerances and flags for the inputs to output the right conditions, only three functions will be needed along with 6 if statements as seen in figure 1.

Design

Moving the controller around and watching the outputs will give me my tolerances.

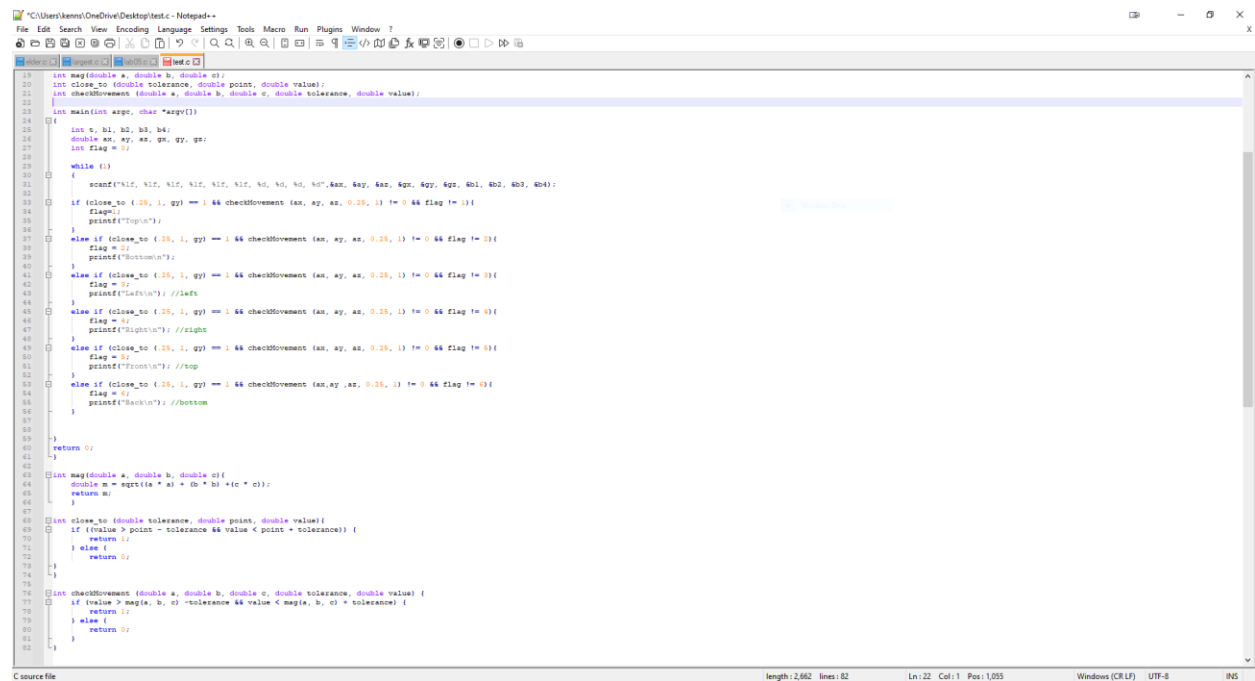
Testing

Repeatedly moving the controller is how I will test my tolerances.

Comments

This lab was worded very poorly and was hard to understand what was being asked of me. Once explained I had no problem figuring out what to do.

Screen Shots



```
19 int mag(double a, double b, double c){
20     int close_to(double tolerance, double point, double value);
21     int checkMovement (double a, double b, double c, double tolerance, double value);
22 }
23 int main(int argc, char *argv[])
24 {
25     int x, y1, y2, x3, x4;
26     double ax, ay, az, gx, gy, gz;
27     int flag = 0;
28
29     while (1)
30     {
31         scanf("%d", &x1, &y1, &x2, &y2, &x3, &y3, &x4, &y4, &x5, &y5, &x6, &y6, &x7, &y7, &x8, &y8, &x9, &y9, &x10, &y10, &x11, &y11, &x12, &y12);
32
33         if (close_to (0.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && flag != 1){
34             flag = 1;
35             printf("Top\n");
36         }
37         else if (close_to (0.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && flag != 2){
38             flag = 2;
39             printf("Bottom\n");
40         }
41         else if (close_to (0.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && flag != 3){
42             flag = 3;
43             printf("Left\n"); //left
44         }
45         else if (close_to (0.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && flag != 4){
46             flag = 4;
47             printf("Right\n"); //right
48         }
49         else if (close_to (0.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && flag != 5){
50             flag = 5;
51             printf("Front\n"); //top
52         }
53         else if (close_to (0.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && flag != 6){
54             flag = 6;
55             printf("Back\n"); //bottom
56         }
57     }
58
59     return 0;
60 }
61
62 int mag(double a, double b, double c){
63     double m = sqrt((a * a) + (b * b) + (c * c));
64     return m;
65 }
66
67 int close_to (double tolerance, double point, double value){
68     if (value > point + tolerance && value < point - tolerance){
69         return 1;
70     } else {
71         return 0;
72     }
73 }
74
75 int checkMovement (double a, double b, double c, double tolerance, double value){
76     if (value > mag(a, b, c) + tolerance && value < mag(a, b, c) - tolerance){
77         return 1;
78     } else {
79         return 0;
80     }
81 }
82 }
```

C:\Users\kennel\OneDrive\Desktop\test.c - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

length: 2,662 lines: 82 Ln: 22 Col: 1 Pos: 1,055 Windows (CRLF) UTF-8 INS

```

/cygdrive/c/Users/kenns/OneDrive/Desktop
kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'main':
test.c:43:83: error: expected expression before '!=' token
43 |         if (close_to (.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && != 1){
      |                                                                 ^
test.c:47:92: error: expected expression before '!=' token
47 |         else if (close_to (.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && != 2){
      |                                                                 ^
test.c:51:92: error: expected expression before '!=' token
51 |         else if (close_to (.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && != 3){
      |                                                                 ^
test.c:55:92: error: expected expression before '!=' token
55 |         else if (close_to (.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && != 4){
      |                                                                 ^
test.c:59:92: error: expected expression before '!=' token
59 |         else if (close_to (.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && != 5){
      |                                                                 ^
test.c:63:91: error: expected expression before '!=' token
63 |         else if (close_to (.25, 1, gy) == 1 && checkMovement (ax, ay, az, 0.25, 1) != 0 && != 6){
      |                                                                 ^
test.c: In function 'checkMovement':
test.c:84:9: warning: implicit declaration of function 'id' [-Wimplicit-function-declaration]
84 |         id (value > mag(a, b, c) -tolerance && value < mag(a, b, c) + tolerance) {
      |         ^
test.c:84:81: error: expected ';' before '{' token
84 |         id (value > mag(a, b, c) -tolerance && value < mag(a, b, c) + tolerance) {
      |                                                                 ^
test.c: In function 'main':
test.c:89:1: error: expected declaration or statement at end of input
89 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'checkMovement':
test.c:84:9: warning: implicit declaration of function 'id' [-Wimplicit-function-declaration]
84 |         id (value > mag(a, b, c) -tolerance && value < mag(a, b, c) + tolerance) {
      |         ^
test.c:84:81: error: expected ';' before '{' token
84 |         id (value > mag(a, b, c) -tolerance && value < mag(a, b, c) + tolerance) {
      |                                                                 ^
test.c: In function 'main':
test.c:89:1: error: expected declaration or statement at end of input
89 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'checkMovement':
test.c:84:19: error: expected ')' before '>' token
84 |         int (value > mag(a, b, c) -tolerance && value < mag(a, b, c) + tolerance) {
      |                 ^
test.c:86:11: error: 'else' without a previous 'if'
86 |         } else {
      |           ^
test.c: In function 'main':
test.c:89:1: error: expected declaration or statement at end of input
89 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'main':
test.c:89:1: error: expected declaration or statement at end of input
89 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'checkMovement':
test.c:88:9: error: expected declaration or statement at end of input
88 |         }
      |         ^
test.c: In function 'main':
test.c:88:9: error: expected declaration or statement at end of input

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'main':
test.c:89:1: error: expected declaration or statement at end of input
89 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'checkMovement':
test.c:92:1: error: expected expression before '}' token
92 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test
test.c: In function 'checkMovement':
test.c:93:1: error: expected expression before '}' token
93 | }
    | ^

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$ gcc test.c -o test

kenns@LAPTOP-L53JNRSE /cygdrive/c/Users/kenns/OneDrive/Desktop
$

```

Figure 1

Figure 2