

```
1  #include <stdio.h>
2
3  //DEFINING STRUCT
4  struct MyPoint
5  {
6      int x;
7      int y;
8  };
9
10 //DEFINING STRUCT
11 struct MyPointProperties
12 {
13     int quadrant;
14     char axis_location[10];
15 };
16
17 struct MyPoint point; //declaraing a single variable of type 'struct MyPoint' globally...
18 struct MyPointProperties point_properties; //declaraing a single variable of type 'struct MyPointProperties' globally...
19
20 int main(void)
21 {
22     //code
23     //User Input For The Data Members Of 'struct MyPoint' variable 'point_A'
24     printf("\n\n");
25     printf("Enter X-Coordinate For A Point : ");
26     scanf("%d", &point.x);
27     printf("Enter Y-Coordinate For A Point : ");
28     scanf("%d", &point.y);
29
30     printf("\n\n");
31     printf("Point Co-ordinates (x, y) Are : (%d, %d) !!!\n\n", point.x, point.y);
32
33     if (point.x == 0 && point.y == 0)
34         printf("The Point Is The Origin (%d, %d) !!!\n", point.x, point.y);
35     else // Atleast One of the two values (either 'X' or 'Y' or BOTH) is a non-zero value...
36     {
37         if (point.x == 0) // If 'X' IS ZERO...OBVIOUSLY 'Y' IS THE NON-ZERO VALUE
38         {
39             if (point.y < 0) // If 'Y' IS -ve
40                 strcpy(point_properties.axis_location, "Negative Y");
41
42             if (point.y > 0) // If 'Y' IS +ve
43                 strcpy(point_properties.axis_location, "Positive Y");
44
45             point_properties.quadrant = 0; // A Point Lying On Any Of The Co-ordinate Axes Is NOT A Part Of ANY Quadrant...
46             printf("The Point Lies On The %s Axis !!!\n\n", point_properties.axis_location);
47
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48     }
49     else if (point.y == 0) // If 'Y' IS ZERO...OBVIOUSLY 'X' IS THE NON-ZERO VALUE
50     {
51         if (point.x < 0) // If 'X' IS -ve
52             strcpy(point_properties.axis_location, "Negative X");
53
54         if (point.x > 0) // If 'X' IS +ve
55             strcpy(point_properties.axis_location, "Positive X");
56
57         point_properties.quadrant = 0; // A Point Lying On Any Of The Co-ordinate Axes Is NOT A Part Of ANY Quadrant...
58         printf("The Point Lies On The %s Axis !!!\n\n", point_properties.axis_location);
59     }
60     else // BOTH 'X' AND 'Y' ARE NON-ZERO
61     {
62         point_properties.axis_location[0] = '\0'; // A Point Lying In ANY Of The 4 Quadrants Cannot Be Lying On Any Of The Co-ordinate Axes...
63
64         if (point.x > 0 && point.y > 0) // 'X' IS +ve AND 'Y' IS +ve
65             point_properties.quadrant = 1;
66
67         else if (point.x < 0 && point.y > 0) // 'X' IS -ve AND 'Y' IS +ve
68             point_properties.quadrant = 2;
69
70         else if (point.x < 0 && point.y < 0) // 'X' IS -ve AND 'Y' IS -ve
71             point_properties.quadrant = 3;
72
73         else // 'X' IS +ve AND 'Y' IS -ve
74             point_properties.quadrant = 4;
75
76         printf("The Point Lies In Quadrant Number %d !!!\n\n", point_properties.quadrant);
77     }
78 }
79
80 return(0);
81 }
82
```