

## F.c

```
1 // f) Create C program to design a calculator that calculates a resistor value using
2 // colour code method (allow the user to enter the resistor colours).
3 #include <stdio.h>
4 #include <string.h>
5 #include <math.h>
6
7 int main()
8 {
9
10     char color[20];
11     double values[4];
12     float tolerance;
13     for(int i=0; i<4; i++)
14     {
15         printf("Color %d: ",i+1);
16         scanf("%s",&color);
17         if (strcmp(color,"Black")==0)
18         {
19             values[i] = 0;
20         }
21         else if (strcmp(color,"Brown")==0)
22         {
23             values[i] = 1;
24         }
25         else if (strcmp(color,"Red")==0)
26         {
27             values[i] = 2;
28         }
29         else if (strcmp(color,"Orange")==0)
30         {
31             values[i] = 3;
32         }
33         else if (strcmp(color,"Yellow")==0)
34         {
35             values[i] = 4;
36         }
37         else if (strcmp(color,"Green")==0)
38         {
39             if (i==3)
40             {
41                 values[i] = .5;
42             }
43             else
44             {
45                 values[i] = 5;
46             }
47         }
48         else if (strcmp(color,"Blue")==0)
49         {
50             if (i==3)
51             {
52
```

```
53         values[i] = .25;
54     }
55     else
56     {
57         values[i] = 6;
58     }
59 }
60 else if (strcmp(color,"Violet")==0)
61 {
62     if (i==3)
63     {
64         values[i] = .1;
65     }
66     else
67     {
68         values[i] = 7;
69     }
70 }
71 else if (strcmp(color,"Gray")==0)
72 {
73     if (i==3)
74     {
75         values[i] = .05;
76     }
77     else
78     {
79         values[i] = 8;
80     }
81 }
82 else if (strcmp(color,"White")==0)
83 {
84     if (i==3)
85     {
86         values[i] = 0;
87     }
88     else
89     {
90         values[i] = 9;
91     }
92 }
93 }
94 else if (strcmp(color,"Gold")==0)
95 {
96     if (i==3)
97     {
98         values[i] = 5;
99     }
100    else
101    {
102        values[i] = 0;
103    }
104 }
105 else if (strcmp(color,"Silver")==0)
106 {
107     if (i==3)
108     {
```

```
109         values[i] = 10;
110     }
111     else
112     {
113         values[i] = 0;
114     }
115 }
116
117 }
118
119 double result = ((values[0]*10) + values[1]) * pow(10,values[2]);
120
121 printf("Resistance = %.3lf (+-) %0.3lf%%", result, values[3]);
122
123 }
```