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1: //Kalli Bonin and Brian Chang
2: //Question 2 - 24-Hour Clock
3:
4: #include <iostream>
5: #include <cmath>
6: #include <cstdlib>
7: #include <iomanip>
8:
9: using namespace std;
10:
11: int main()
12: {
13:     int time1 = -1, time2 = -1;
14:
15:     //check to see if input is a valid time
16:     while ( time1 < 0 || time1 >= 2400 || time1%100 > 59 )
17:     {
18:         cout << "Enter first time: ";
19:         cin >> time1;
20:     }
21:
22:     while ( time2 < 0 || time2 >=2400 || time2%100 > 59 )
23:     {
24:         cout << "Enter second time: ";
25:         cin >> time2;
26:     }
27:
28:     //convert 24hour time into hours and mins
29:     int hour1 = time1/100, hour2 = time2/100;
30:     int min1 = time1%100, min2 = time2%100;
31:
32:     //calculate the difference in time
33:     int hoursBetween = hour2 - hour1;
34:     int minsBetween = min2 - min1;
35:
36:     //check which time comes first and use an "absolute" value function
37:     if (time1 > time2)
38:     {
39:         hoursBetween *= -1;
40:         minsBetween *= -1;
41:     }
42:
43:     //output answer
44:     cout << "There are " << hoursBetween * 60 + minsBetween
45:         << " minutes between the two times.";
46: }
47:
48: /*
49:     Enter first time: 872
50:     Enter first time: 830
51:     Enter second time: 466
52:     Enter second time: 423
53:     There are 247 minutes between the two times.
54:     -----
55:     Process exited after 20.19 seconds with return value 0

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56:   Press any key to continue . . .
57: */
58:
59: /*
60:   Enter first time: 1050
61:   Enter second time: 1120
62:   There are 30 minutes between the two times.
63:   -----
64:   Process exited after 13.62 seconds with return value 0
65:   Press any key to continue . . .
66: */
67:
68: /*
69:   Enter first time: 0000
70:   Enter second time: 2359
71:   There are 1439 minutes between the two times.
72:   -----
73:   Process exited after 13.46 seconds with return value 0
74:   Press any key to continue . . .
75: */
```