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1  /*
2  ****
3  FILENAME      ohmslaw.cpp
4
5  Encoding      UTF-8
6
7  DESCRIPTION    Calculate Volt, Resistance, Ampere.
8
9  FUNCTIONS
10
11 NOTES          Menu language - Swedish
12
13 Compiler      g++ 9.3.0 amd64 running @ Ubuntu 20.04 LTS
14
15 Lang dialect   ISO C++14 (g++ by default uses option '-std=gnu++14')
16
17               Copyright L.Krüger 2020. All rights reserved.
18
19 AUTHOR         Leif Krüger, leif@leifkruger.se
20
21 CHANGES
22
23 REF NO  VERSION      DATE (YYMMDD)    WHO  DETAIL
24 -----
25         1            2020-11-04        LK   Start date
26
27 ****
28 */
29
30 #include <iostream>
31
32 using namespace std;
33
34 void current();
35 void resistance();
36 void voltage();
37
38 struct ohmsLaw {
39     double current;
40     double voltage;
41     double resistance;
42 };
43
44 int main() {
45     char chooseRunagain;
46     do {
47         char chooseCalculationUri;
48         ohmsLaw uri;
49         cout << "\nOhm's law" << endl;
50         cout << "=====" << endl;
51         cout << "Which calculation? Voltage (u), Resistance (r), Current (i)? ";
52         cin >> chooseCalculationUri;
53         chooseCalculationUri = tolower(chooseCalculationUri);
54         if (chooseCalculationUri == 'u') {
55             voltage();
56         }
57         else if (chooseCalculationUri == 'r') {
58             resistance();
59         }
60         else if (chooseCalculationUri == 'i') {
61             current();
62         }

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63         else {
64             cout << "Sorry! Wrong input! ";
65         }
66         cout << "Do you want to do a new calculation? Y/N? ";
67         cin >> chooseRunagain;
68         chooseRunagain = tolower(chooseRunagain);
69     } while (chooseRunagain != 'n');
70     return 0;
71 }
72
73 void voltage() {
74     ohmsLaw uri;
75     do {
76         cin.clear();
77         cin.ignore(100, '\n');
78         cout << "Resistance? ";
79         cin >> uri.resistance;
80     }
81     while (cin.fail());
82     do {
83         cin.clear();
84         cin.ignore(100, '\n');
85         cout << "Current? ";
86         cin >> uri.current;
87     }
88     while (cin.fail());
89     cout << "Result: Voltage = " << uri.resistance * uri.current << " V\n" << endl;
90 }
91
92 void resistance() {
93     ohmsLaw uri;
94     do {
95         cin.clear();
96         cin.ignore(100, '\n');
97         cout << "Voltage? ";
98         cin >> uri.voltage;
99     }
100    while (cin.fail());
101    do {
102        cin.clear();
103        cin.ignore(100, '\n');
104        cout << "Current? ";
105        cin >> uri.current;
106    }
107    while (cin.fail());
108    cout << "Result: Resistance = " << uri.voltage / uri.current << " Ohm\n" << endl;
109 }
110 void current() {
111     ohmsLaw uri;
112     do {
113         cin.clear();
114         cin.ignore(100, '\n');
115         cout << "Voltage? ";
116         cin >> uri.voltage;
117     }
118     while (cin.fail());
119     do {
120         cin.clear();
121         cin.ignore(100, '\n');
122         cout << "Resistance? ";
123         cin >> uri.resistance;

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124     }
125     while (cin.fail());
126     cout << "Result: Current = " << uri.voltage / uri.resistance << " A\n" << endl;
127 }
```