```cpp
1    /*
2     *  - Internationalstudent.cpp -
3     * ENSC 251 - Lab Assignment 2
4     * May 31, 2019
5     * Judd Foster
6     * 301377893
7     */
8
9    // make sure to include the hpp file for the declarations; this file will be
10   // actually implementing the functions in the class
11   #include "internationalstudent.hpp"
12
13   using namespace std;
14
15   // ****************** InternationalStudent Class ****************** //
16
17   // define implementations for the get and set functions
18   string InternationalStudent::getCountry() const
19   {
20       return this->country;
21   }
22
23   void InternationalStudent::setCountry(string c)
24   {
25       this->country = c;
26   }
27
28   ToeflScore InternationalStudent::getToeflScore() const
29   {
30       ToeflScore t;
31       t.setReading(this->toeflScore.getReading());
32       t.setListening(this->toeflScore.getListening());
33       t.setSpeaking(this->toeflScore.getSpeaking());
34       t.setWriting(this->toeflScore.getWriting());
35       return t;
36   }
37
38   void InternationalStudent::setToeflScore(ToeflScore t)
39   {
40       this->toeflScore.setReading(t.getReading());
41       this->toeflScore.setListening(t.getListening());
42       this->toeflScore.setSpeaking(t.getSpeaking());
43       this->toeflScore.setWriting(t.getWriting());
44   }
45
46   void InternationalStudent::setToeflScore(int reading, int listening, int speaking, int
     writing)
47   {
48       this->toeflScore.setReading(reading);
49       this->toeflScore.setListening(listening);
50       this->toeflScore.setSpeaking(speaking);
51       this->toeflScore.setWriting(writing);
52   }
53
54   // this is the start of the redundant functions found in ToeflScore
55
56   int InternationalStudent::getReading() const
57   {
58       return this->toeflScore.getReading();
59   }
60
61   void InternationalStudent::setReading(int r)
62   {
63       this->toeflScore.setReading(r);
64   }
65
66   int InternationalStudent::getListening() const
67   {
68       return this->toeflScore.getListening();
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 69      }
 70
 71      void InternationalStudent::setListening(int l)
 72      {
 73          this->toeflScore.setListening(l);
 74      }
 75
 76      int InternationalStudent::getSpeaking() const
 77      {
 78          return this->toeflScore.getSpeaking();
 79      }
 80
 81      void InternationalStudent::setSpeaking(int s)
 82      {
 83          this->toeflScore.setSpeaking(s);
 84      }
 85
 86      int InternationalStudent::getWriting() const
 87      {
 88          return this->toeflScore.getWriting();
 89      }
 90
 91      void InternationalStudent::setWriting(int w)
 92      {
 93          this->toeflScore.setWriting(w);
 94      }
 95
 96      int InternationalStudent::getTotalScore() const
 97      {
 98          int total = 0;
 99          total += this->toeflScore.getReading();
100          total += this->toeflScore.getListening();
101          total += this->toeflScore.getSpeaking();
102          total += this->toeflScore.getWriting();
103          return total;
104      }
105
106      // define implementations for custom operators
107
108      ostream& operator << (ostream& outs, const InternationalStudent &object)
109      {
110          outs << setw(14) << left << object.getFirstName() << " " << setw(18) << left <<
             object.getLastName();
111          outs << setw(10) << left << object.getCountry();
112          outs << setw(6) << left << object.getCGPA();
113          outs << setw(4) << left << object.getResearchScore();
114          outs << setw(4) << left << object.getReading();
115          outs << setw(4) << left << object.getListening();
116          outs << setw(4) << left << object.getSpeaking();
117          outs << setw(4) << left << object.getWriting();
118          outs << object.getTotalScore() << endl;
119          return outs;
120      }
121
122      istream& operator >> (istream &ins, InternationalStudent &object)
123      {
124          string s_tmp;
125          getline(ins, s_tmp, ',');
126          object.setFirstName(s_tmp);
127          getline(ins, s_tmp, ',');
128          object.setLastName(s_tmp);
129          getline(ins, s_tmp, ',');
130          object.setCountry(s_tmp);
131          getline(ins, s_tmp, ',');
132          object.setCGPA(atof(s_tmp.c_str()));
133          getline(ins, s_tmp, ',');
134          object.setResearchScore(atoi(s_tmp.c_str()));
135          getline(ins, s_tmp, ',');
136          object.setReading(atoi(s_tmp.c_str()));
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137        getline(ins, s_tmp, ',');
138        object.setListening(atoi(s_tmp.c_str()));
139        getline(ins, s_tmp, ',');
140        object.setSpeaking(atoi(s_tmp.c_str()));
141        getline(ins, s_tmp, ',');
142        object.setWriting(atoi(s_tmp.c_str()));
143        return ins;
144    }
145
146    // default constructor, initialize strings to ""
147    InternationalStudent::InternationalStudent()
148    {
149        this->setCountry("");
150    }
151
152    // ****************** Friend functions of DomesticStudent Class ****************** //
153
154    int compareCGPA(InternationalStudent student1, InternationalStudent student2)
155    {
156        return compareTwoNumbers(student1.getCGPA(), student2.getCGPA());
157    }
158
159    int compareResearchScore(InternationalStudent student1, InternationalStudent student2)
160    {
161        return compareTwoNumbers(student1.getResearchScore(), student2.getResearchScore());
162    }
163
164    int compareFirstName(InternationalStudent student1, InternationalStudent student2)
165    {
166        return compareTwoStrings(student1.getFirstName(), student2.getFirstName());
167    }
168
169    int compareLastName(InternationalStudent student1, InternationalStudent student2)
170    {
171        return compareTwoStrings(student1.getLastName(), student2.getLastName());
172    }
173
```