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Submission Date:	8 th November, 2023	Department:	CSE		

LAB 3

Write C++ code to identify relational operators and label them from a given expression.

<	<	Less than	
<=	≤	Less than or equal to	
==	=	Equal to	
>=	≥	Greater than or equal to	
>	>	Greater than	
!=	≠	Not equal to	

Input: x == 5 Output: == Equal to

Input: $y \ge n$

Output: >= Greater than or equal to

Input: x > 5

Output: > Greater than

Your code should scan each string one character at a time.

Submit a PDF report with code and screen shot of your console output. Mention your Name & Section

```
CODE:
#include <iostream>
#include <string>
using namespace std;
int main() {
  string expression;
  cout << "Enter an expression: ";
  getline(std::cin, expression);
  int i = 0;
  int length = expression.length();
  while (i < length) {
     if (expression[i] == '=') {
       if (i + 1 < length && expression[i + 1] == '=') {
          cout << "== Equal to" << endl;</pre>
          i += 2;
       } else {
          cout << "= Assignment" << endl;</pre>
          j++;
       }
```

```
} else if (expression[i] == '<') {</pre>
     if (i + 1 < length && expression[i + 1] == '=') {
       cout << "<= Less than or equal to" << endl;
       i += 2;
     } else {
       cout << "< Less than" << endl;</pre>
       j++;
     }
  } else if (expression[i] == '>') {
     if (i + 1 < length && expression[i + 1] == '=') {
       cout << ">= Greater than or equal to" << endl;</pre>
       i += 2;
     } else {
       cout << "> Greater than" << endl;
       j++;
     }
  } else {
     i++;}}
return 0;
```

}

OUTPUT:

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                                                                            string expression;
cout << "Enter an expression: ";</pre>
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                                                                             getline(std::cin, expression);
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                                                                            int length = expression.length();
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                                                                             while (i < length) {
                                                    12
                                                                                      if (expression[i] == '=') {
   if (i + 1 < length && expression[i + 1] == '=') {
      cout << "== Equal to" << endl;
}</pre>
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                                                                                                         i += 2;
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                                                                                                         cout << "= Assignment" << endl;</pre>
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                                                                                       } else if (expression[i] == '<') {
                                                                                               if (i + 1 < length && expression[i + 1] == '=') {
    cout << "<= Less than or equal to" << endl;</pre>
                                                    22
                                                    24
                                                                                                         i += 2;
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                                                                                                         cout << "< Less than" << endl;</pre>
                                                    26
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                                                                                                         i++;
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                                                                                       } else if (expression[i] == '>') {
                                                                                               if (i + 1 < length && expression[i + 1] == '=') {
  cout << ">= Greater than or equal to" << endl;</pre>
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                                                                                                         i += 2;
                                                                                                 } else {
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                                                                                                         cout << "> Greater than" << endl;</pre>
                                                                                                         i++;
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                                                                                       } else {
                                                    37
                                                                              return 0:
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                                                              int main() {
                                                                             string expression;
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                                                                             cout << "Enter an expression: ";
getline(std::cin, expression);</pre>
                                                                                                                                                                                                                       Enter an expression: 5+5=10
                                                                                                                                                                                                                             Assignment
                                                                              int length = expression.length();
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                                                                                                                                                                                                                                                                                                            execution time : 6.673 s
                                                                             while (i < length) {
                                                                                      le ( < length) {
   if (expression[i] == '=') {
      if (i + 1 < length && expression[i + 1] == '=') {
      cout << "== Equal to" << endl;
}</pre>
                                                                                                                                                                                                                        Press any key to continue.
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                                                                                                i += 2;
} else {
                                                                                                         cout << "= Assignment" << endl;</pre>
                                                                                                         i++;
                                                                                       } else if (expression[i] == '<')</pre>
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                                                                                               if (i+1 < length && expression[i+1] == '=') {
   cout << "<= Less than or equal to" << endl;
   i += 2;
} else {</pre>
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                                                                                                         cout << "< Less than" << endl;</pre>
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                                                                                                     i++;
                                                                                      } else if (expression[i] == '>') {
   if (i + 1 < length && expression[i + 1] == '=') {
      cout << ">= Greater than or equal to" << endl;</pre>
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```

cout << "> Greater than" << endl;</pre>

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i++;

return 0;

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                                                                           string expression;
cout << "Enter an expression: ";</pre>
                                                                            getline(std::cin, expression);
                                                                                                                                                                                                                             Enter an expression: 5<=7
                                                                            int i = 0;
                                                                            int length = expression.length();
                                                                                                                                                                                                                             <= Less than or equal to
                                                    11
                                                                            while (i < length)</pre>
                                                                                   if (expression[i] == '=') {
    if (i + 1 < length && expression[i + 1] == '=') {
        cout << "== Equal to" << endl;
}</pre>
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                                                                                                       cout << "= Assignment" << endl;</pre>
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                                                                                                         i++;
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                                                                                     } else if (expression[i] == '<') {
   if (i + 1 < length && expression[i + 1] == '=') {
      cout << "<= Less than or equal to" << endl;
}</pre>
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                                                                                                         i++;
                                                                                  } else if (expression[i] == '>') {
    if (i + 1 < length && expression[i + 1] == '=') {
        cout << ">= Greater than or equal to" << endl;</pre>
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                                                                                                          i += 2;
                                                     33
                                                                                                      cout << "> Greater than" << endl;</pre>
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                                                                                       } else {
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                                                                                             i++;}}
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                                                             int main()
                                                                              string expression;
                                                                            cout << "Enter an expression: ";
getline(std::cin, expression);</pre>
                                                                            int length = expression.length();
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                                                                            while (i < length) {
   if (expression[i] == '=') {
     if (i + 1 < length % expression[i + 1] == '=') {
        cout << "== Equal to" << endl;
        i += 2;
     } else {</pre>
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i++;</pre>
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    if (i + 1 < length && expression[i + 1] == '=') {
        cout << "<= Less than or equal to" << endl;
}</pre>
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                                                                                                        cout << "< Less than" << endl;</pre>
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i++;

i += 2;

} else {

} else {
 i++;}}
return 0;

if (expression[i] == '>') {
 if (i + 1 < length && expression[i + 1] == '=') {
 cout << ">= Greater than or equal to" << endl;</pre>

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cout << "> Greater than" << endl;
i++;</pre>

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  int main() {
string expression;
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getline(std::cin, expression);</pre>
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int length = expression.length();
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   if (i + 1 < length & expression[i + 1] == '=') {
      cout << "<= Less than or equal to" << endl;
}</pre>
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} else {
cout << "< Less than" << endl;
i++;
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   if (i + 1 < length && expression[i + 1] == '=') {
      cout << ">= Greater than or equal to" << end;</pre>
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                                                                                              cout << "> Greater than" << endl;
i++;</pre>
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                                                                       } else {
     i++;}}
return 0;
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                                                                       getline(std::cin, expression);
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                                                                       int length = expression.length();
                                                                       while (i < length)
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                                                                               if (expression[i] == '=') {
                                                                                        if (i + 1 < length && expression[i + 1] == '=') {
   cout << "== Equal to" << endl;</pre>
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   cout << "<= Less than or equal to" << endl;</pre>
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