

3.16 Finding, inserting, and replacing text in a string

Students:
Section 3.17 is a part of 2 assignments: **CSC108 CH03.11-3.20 C3B** ▾
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Includes: CA
Due: 02/25/2025, 11:59 PM EST

3.17 Conditional expressions

If-else statements with the form shown below are so common that the language supports the shorthand notation shown.

PARTICIPATION ACTIVITY | 3.17.1: Conditional expression.

Start 2x speed

`if (condition) {
 myVar = expr1;
} else {
 myVar = expr2;
}`

`myVar = (condition) ? expr1 : expr2;`

Captions ▲

1. An if-else statement can be written as a conditional expression.

Feedback?

A **conditional expression** has the form `condition ? exprWhenTrue : exprWhenFalse`.

All three operands are expressions. If the `condition` evaluates to true, then `exprWhenTrue` is evaluated. If the condition evaluates to false, then `exprWhenFalse` is evaluated. The conditional expression evaluates to whichever of those two expressions was evaluated. For example, if `x` is 2, then the conditional expression `(x == 2) ? 5 : 9 * x` evaluates to 5.

A conditional expression has three operands and thus the "?" and ":" together are sometimes referred to as a **ternary operator**.

Good practice is to restrict usage of conditional expressions to an assignment statement, as in: `y = (x == 2) ? 5 : 9 * x;` Common practice is to put parentheses around the first expression of the conditional expression, to enhance readability.

PARTICIPATION ACTIVITY | 3.17.2: Conditional expressions.

Convert each if-else statement to a single assignment statement using a conditional expression, using parentheses around the condition. Enter "Not possible" if appropriate.

1) `if (x > 50) {
 y = 50;
} else {
 y = x;
}`

`y = (_____ ? 50 : x;`

Check **Show answer**

2) `if (x < 20) {
 y = x;
} else {
 y = 20;
}`

`y = (x < 20) _____`

Check **Show answer**

3) `if (x < 100) {
 y = 0;
} else {
 y = x;
}`

`_____`

Check **Show answer**

4) `if (x < 0) {
 x = -x;
} else {
 x = x;
}`

`_____`

Check **Show answer**

5) `if (x < 0) {
 y = -x;
} else {
 z = x;
}`

`_____`

Check **Show answer**

Feedback?

CHALLENGE ACTIVITY | 3.17.1: Conditional expression: Print negative or positive.

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Drag and drop the code statement that assigns `condStr` with a conditional expression that evaluates to string "negative" if `userVal` is less than 0, and "non-negative" otherwise.

Ex: If the input is -9, then the output is:

-9 is negative.

Note: Only one code statement on the left will be used in the final solution.

How to use this tool ▾

Unused

```
condStr = (userVal > 0) ? "negative" : "non-negative";  
(userVal < 0) ? "negative" : "non-negative";  
condStr = (userVal < 0) ? "non-negative" : "negative";  
condStr = (userVal < 0) ? "negative" : "non-negative";
```

main.cpp

Load default template...

```
#include <iostream>  
#include <string>  
using namespace std;
```

```
int main() {  
    string condStr;  
    int userVal;
```

```
    cin >> userVal;
```

```
    cout << userVal << " is " << condStr << endl;
```

```
    return 0;
```

Check

Full screen



Feedback?

CHALLENGE ACTIVITY | 3.17.2: Conditional assignment.

Using a conditional expression, write a statement that increments `numUsers` if `updateDirection` is 1, otherwise decrements `numUsers`. Ex: if `numUsers` is 8 and `updateDirection` is 1, `numUsers` becomes 9; if `updateDirection` is 0, `numUsers` becomes 7.

Hint: Start with "numUsers = ...".

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```
1 #include <iostream>  
2 using namespace std;  
3  
4 int main() {  
5     int numUsers;  
6     int updateDirection;  
7  
8     cin >> numUsers;  
9     cin >> updateDirection;  
10  
11     /* Your solution goes here */  
12  
13     cout << "New value is: " << numUsers << endl;  
14  
15     return 0;  
16 }
```

Run

1 test passed

All tests passed

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Feedback?

CHALLENGE ACTIVITY | 3.17.3: Conditional expressions: Enter the output of the code.

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1

2

3

How was this section? **Provide section feedback**

Activity summary for assignment: **CSC108 CH03.11-3.20 C3B** ▾

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