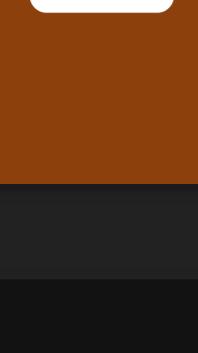


↑ 3.7 Detecting multiple features with branches

Students:
Section 3.8 is a part of 2 assignments: **CSC108 CH03.1-3.10 C3A** ▾
 This assignment's due date has passed. Activity will still be recorded, but will not count towards this assignment (unless the due date is changed). See [this article](#) for more info.

Includes: CA
Due: 02/20/2025, 11:59 PM EST

3.8 Common branching errors

Common error: Missing braces

When a branch has a single statement, the braces are optional, but good practice always uses the braces. Always using braces even when a branch only has one statement prevents the common error of mistakenly thinking a statement is part of a branch.

PARTICIPATION ACTIVITY | 3.8.1: Common error when omitting braces.



Start 2x speed

`if (numSales < 20) 15 < 20
 salesBonus = 0;
else
 totBonus = totBonus + 1;
 salesBonus = 20;`

Memory

95	15	numSales
96	20	salesBonus
97	2	totBonus
98		

*Indentation is irrelevant.
salesBonus = 20; is not part of else,
so always executes.*

`if (numSales < 20) { 15 < 20
 salesBonus = 0;
}
else {
 totBonus = totBonus + 1;
 salesBonus = 20;
}`

Memory

95	15	numSales
96	0	salesBonus
97	2	totBonus
98		

*Always using braces avoids
the above common error.*

Captions ^

- Braces aren't used, so the else branch's only statement is totBonus = totBonus + 1. But, salesBonus = 20; should also be part of the else branch.
- Always using braces avoids the common error of not including all statements within an if or else branch.

Feedback?

PARTICIPATION ACTIVITY | 3.8.2: Braces are important.



Omitting braces is a common source of errors. What is the final value of numItems?

- `numItems = 0;
bonusVal = 19;
if (bonusVal > 10)
 numItems = bonusVal;
numItems = numItems + 1;`

Check Show answer

- `numItems = 0;
bonusVal = 5;
if (bonusVal > 10)
 // Need to update bonusVal
 numItems = bonusVal;
numItems = numItems + 1;`

Check Show answer

- `numItems = 0;
bonusVal = 5;
if (bonusVal > 10)
 // Update bonusVal
 bonusVal = bonusVal - 1;
 numItems = bonusVal;
numItems = numItems + 1;`

Check Show answer

Feedback?

CHALLENGE ACTIVITY | 3.8.1: If-else statement error.



Re-type the code and fix any errors. The code should convert non-positive numbers to 1.

```
if (userNum > 0)  
    cout << "Positive." << endl;  
else  
    cout << "Not positive, converting to 1." << endl;  
    userNum = 1;  
  
cout << "Final: " << userNum << endl;
```

Learn how our autograder works

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```
1 #include <iostream>  
2 using namespace std;  
3  
4 int main() {  
5     int userNum;  
6  
7     cin >> userNum;  
8  
9     /* Your solution goes here */  
10  
11    return 0;  
12 }
```

Run

View your last submission ▾

Feedback?

Common error: Using the incorrect operators

Perhaps the most common error in C and C++ is to use = rather than == in an if-else expression, as in: if (numDogs = 9) { ... }. That code is not a syntax error. The statement assigns numDogs with 9, and then because that value is non-zero, the expression is considered true. C's designers allowed assignment in expressions to allow compact code, and use = for assignment rather than := or similar to save typing. Many people believe those language design decisions were mistakes, leading to many bugs. Some modern compilers provide a warning when = appears in an if-else expression.

Another common error is to use invalid character sequences like =>, <-, or >-, which are not valid operators.

PARTICIPATION ACTIVITY | 3.8.3: Watch out for assignment in an if-else expression.



What is the final value of numItems?

- `numItems = 3;
if (numItems == 3) {
 numItems = numItems + 1;`

Check Show answer

- `numItems = 3;
if (numItems = 10) {
 numItems = numItems + 1;`

Check Show answer

Feedback?

CHALLENGE ACTIVITY | 3.8.2: If-else statement: Fix errors.



Start

Find and fix the error in the if-else statement.

```
1 #include <iostream>  
2 using namespace std;  
3  
4 int main() {  
5     int userNum; // Program will be tested with values: 1, 2, 3, 0.  
6  
7     cin >> userNum;  
8  
9     if (userNum = 2) {  
10         cout << "Num is equal to two" << endl;  
11     }  
12     else {  
13         cout << "Num is not two" << endl;  
14     }  
15  
16     return 0;  
17 }
```

1

Check Try again

Feedback?

How was this section?   Provide section feedback

Activity summary for assignment: CSC108 CH03.1-3.10 C3A ▾

Due: 02/20/2025, 11:59 PM EST

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Completion details ▾

48 / 48 points

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