

↑ 6.9 Using a loop to modify, copy, or compare vectors



Students:

Section 6.10 is a part of 1 assignment: CSC108 CH06.10-6.29 P6B

Includes: PA

Due: 05/06/2025, 11:59 PM EDT

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6.10 Swapping two variables (general)

Sometimes a program must swap values among two variables. **Swapping** two variables x and y means to assign y's value to x, and x's value to y. If x is 33 and y is 55, then after swapping x is 55 and y is 33.

A common method for swapping uses a temporary variable. A **temporary variable** is a variable used briefly to store a value. To understand the intuition of such temporary storage, consider a person holding a book in one hand and a phone in the other, wishing to swap the items. The person can temporarily place the phone on a table, move the book to the other hand, then pick up the phone.

PARTICIPATION ACTIVITY | 6.10.1: Swap idea: Use a temporary location.

Start 2x speed

Captions ▾

Feedback?

Similarly, swapping two variables can use a third variable to temporarily hold one value while the other value is copied over.

PARTICIPATION ACTIVITY | 6.10.2: Swapping two variables using a third temporary variable.

Start 2x speed

Captions ▾

Feedback?

PARTICIPATION ACTIVITY | 6.10.3: Swap.

To begin, x is 22 and y is 99. What are x and y after the given code?

1) `x = y;`
 `y = x;`
 x is 99 and y is 22.
 x is 22 and y is 99.
 x is 99 and y is 99.

2) `x = y;`
 `y = x;`
 `x = y;`
 x is 99 and y is 22.
 x is 99 and y is 99.
 x is 22 and y is 22.

3) `tempVal = x;`
 `x = y;`
 `y = tempVal;`
 x is 99 and y is 22.
 x is 99 and y is 99.

4) `tempVal = x;`
 `x = y;`
 `y = tempVal;`
 x is 99 and y is 22.
 x is 99 and y is 99.

Feedback?

If you have studied arrays or vectors (or other kinds of lists), you know that most swaps are actually performed between two list elements. For example, reversing a list with N elements can be achieved by swapping element 1 and N, element 2 and N-1, element 3 and N-2, etc. (stopping at the middle of the list).

PARTICIPATION ACTIVITY | 6.10.4: Reversing a list using swaps.

Start 2x speed

Captions ▾

Feedback?

PARTICIPATION ACTIVITY | 6.10.5: Reversing a list using swaps.

1) Using the above approach, how many swaps are needed to reverse this list:
999 888 777 666 555 444 333 222

Check Show answer

Feedback?

How was this section? | Provide section feedback

Activity summary for assignment: CSC108 CH06.10-6.29 P6B

0 / 91 points

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↓ 6.11 Debugging example: Reversing a vector