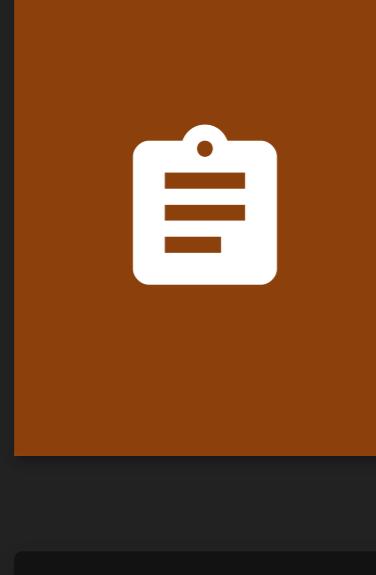


## ↑ 6.6 Multiple vectors



Students:

Section 6.7 is a part of 2 assignments: CSC108 CH06.1-6.9 C6A ▾

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Includes: CA

Due: 04/29/2025, 11:59 PM EDT

## 6.7 Vector resize

Commonly, the size of a list of items is not known during a program's compile time. Thus, a vector's size need not be specified in the vector's declaration. Instead, a vector's size can be set or changed while a program executes using **resize(N)**. Ex:

`highScore.resize(10)` resizes the `highScores` vector to have 10 elements.

`resize()` can be called multiple times. If the new size is larger, `resize()` adds elements at the end. If smaller, `resize()` deletes elements from the end. If `userScores` has size 3 (elements 0, 1, 2), `userScores.resize(2)` would delete element 2, leaving elements 0 and 1. A subsequent access to `userScores.at(2)` would result in an error.

## PARTICIPATION ACTIVITY

## 6.7.1: Vector resize.

Start  2x speed

```
vector<int> carSales;
// carSales.at(0) = 122; Would be out-of-range error
carSales.resize(3);
carSales.at(0) = 122;
carSales.at(1) = 11;
carSales.at(2) = 7;
```

96	122	carSales.at(0)
97	11	carSales.at(1)
98	7	carSales.at(2)
100		carSales.size(): 3

Captions ▾

Feedback?

The program below asks a user to indicate the number of values the user will enter, allocates that number of elements for a vector, assigns the vector's elements with user-entered values, and then displays the vector's elements.

Figure 6.7.1: Resizing a vector based on user input.

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

int main() {
    vector<int> userVals; // No elements yet
    int numVals;
    unsigned int i;

    cout << "Enter number of integer values: ";
    cin >> numVals;

    userVals.resize(numVals); // Allocate elements

    cout << "Enter " << numVals << " integer values..." << endl;
    for (i = 0; i < userVals.size(); ++i) {
        cout << "Value: ";
        cin >> userVals.at(i);
    }

    cout << "You entered: ";
    for (i = 0; i < userVals.size(); ++i) {
        cout << userVals.at(i) << " ";
    }
    cout << endl;
}

return 0;
}
```

```
Enter number of integer values: 7
Enter 7 integer values...
Value: -5
Value: -99
Value: 0
Value: 13
Value: 7
Value: -22
Value: 1
You entered: -5 -99 0 13 7 -22 1
```

Feedback?

## PARTICIPATION ACTIVITY

## 6.7.2: Vector resize and size functions.

Given the vector declaration:

`vector<int> agesVctr;`1) Immediately after the declaration, `agesVctr` has only 1 element.

- True
- False

2) `agesVctr.size(4)` allocates 4 elements for `agesVctr`.

- True
- False

3) Given `agesVctr` has 3 elements, `agesVctr.resize(4)` adds 4 more elements, totalling 7 elements.

- True
- False

4) Given `agesVctr` has 3 elements with values 22, 18, and 19, `agesVctr.resize(2)` changes `agesVctr` to have 2 elements with values 22 and 18.

- True
- False

5) After `agesVctr.resize(5)` and `agesVctr.at(0) = 99`, `agesVctr.size()` evaluates to 1.

- True
- False

Feedback?

## CHALLENGE ACTIVITY

## 6.7.1: Vector resize.

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Start

Given the integer vector `valElements` with two elements and the input integer `scaleVal`, resize `valElements` to increase the size of the vector by `scaleVal` times.

After resizing `valElements`, the new elements are initialized with the default value -1.

Ex: If the input is 4, then the output is:

```
4 5
4 5 -1 -1 -1 -1 -1 -1
```

Note: Assume that `scaleVal` is a non-negative integer.

```
1 #include <iostream>
2 #include <vector>
3 using namespace std;
4
5 int main() {
6     vector<int> valElements(2);
7     int valElementsSize = valElements.size();
8     int scaleVal;
9     int i;
10
11    valElements.at(0) = 4;
12    valElements.at(1) = 5;
13
14    cin >> scaleVal;
15
16    for (i = 0; i < valElements.size(); ++i) {
17        cout << valElements.at(i) << " ";
18    }
```

1

2

3

Check

Next level

Feedback?

How was this section?



Provide section feedback

Activity summary for assignment: CSC108 CH06.1-6.9 C6A ▾

0 / 40 points

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↓ 6.8 Vector back() and pop\_back()