



Arrays in a Function

ELEC1006: ENGINEERING COMPUTING

Arrays as Function Arguments

- When passing an array to a function, it is common to pass array size so that a function knows how many elements to process:

```
showScores(tests, ARRAY_SIZE);
```

- Array size must also be reflected in prototype, header:

```
void showScores(int [], int);  
    // function prototype  
void showScores(int tests[], int size)  
    // function header
```

Example 1

```
1 // This program demonstrates an array being passed to a function.
2 #include <iostream>
3 using namespace std;
4
5 void showValues(int [], int); // Function prototype
6
7 int main()
8 {
9     const int ARRAY_SIZE = 8;
10    int numbers[ARRAY_SIZE] = {5, 10, 15, 20, 25, 30, 35, 40};
11
12    showValues(numbers, ARRAY_SIZE);
13    return 0;
14 }
15
```

(Program Continues)

Example 1 (continued)

```
16  /*******
17  // Definition of function showValue.          *
18  // This function accepts an array of integers and *
19  // the array's size as its arguments. The contents *
20  // of the array are displayed.                *
21  /*******
22
23  void showValues(int nums[], int size)
24  {
25      for (int index = 0; index < size; index++)
26          cout << nums[index] << " ";
27      cout << endl;
28  }
```

Program Output

```
5 10 15 20 25 30 35 40
```

Modifying Arrays in a Function

- Array names in functions are like reference variables – changes made to array in a function are reflected in the actual array in the calling function.
- **Need to exercise caution that array is not inadvertently changed by a function.**

More info

- [1] cplusplus.com: Arrays
<https://www.cplusplus.com/doc/tutorial/arrays/>
- [2] learncpp.com: 6.1 – Arrays (Part I)
<https://www.learncpp.com/cpp-tutorial/61-arrays-part-i/>
- [3] learncpp.com: 6.2 – Arrays (Part II)
<https://www.learncpp.com/cpp-tutorial/62-arrays-part-ii/>
- [4] learncpp.com: 6.3 – Arrays and loops
<https://www.learncpp.com/cpp-tutorial/63-arrays-and-loops/>