

- Example

Let's explore the versatility of `std::array` in this example.

WE'LL COVER THE FOLLOWING ^

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Example

One additional value of a `std::array` in comparison to a C array is it that a `std::array` functions similarly to a `std::vector`.

```
// array.cpp

#include <algorithm>
#include <array>
#include <iostream>

int main(){

    std::cout << std::endl;

    // output the array
    std::array <int,8> array1{1,2,3,4,5,6,7,8};
    std::for_each( array1.begin(),array1.end(),[](int v){std::cout << v << " ";});

    std::cout << std::endl;

    // calculate the sum of the array by using a global variable
    int sum = 0;
    std::for_each(array1.begin(), array1.end(), [&sum](int v) { sum += v; });
    std::cout << "sum of array{1,2,3,4,5,6,7,8}: " << sum << std::endl;

    // change each array element to the second power
    std::for_each(array1.begin(), array1.end(), [](int& v) { v=v*v; });
    std::for_each( array1.begin(),array1.end(),[](int v){std::cout << v << " ";});
    std::cout << std::endl;

    std::cout << std::endl;

}
```



Explanation

- In line 13, you can output `array1` with a lambda-function and the range-based for-loop. By using the summation variable `sum` in line 19, you can ``sum up the elements of the `std::array`.
- The lambda-function in line 23 takes its arguments by reference and maps each element to its square. These arithmetics are not necessarily special, but remember that we are implementing these arithmetics with an `std::array`.

Test your understanding of this example with exercise in the next lesson.