

# Solution Review: Left Rotate Array

Let's go over the solution review of the challenge given in the previous lesson.

## We'll cover the following



- Solution
- Explanation
  - left\_rotate function

## Solution #

Press the **RUN** button and see the output!

```
#include <iostream>

using namespace std;

// left_rotate function
void left_rotate(int arr[], int size) {
    // Declares a loop counter variable
    int j;
    // Store the element at index 0
    int temp = arr[0];
    // Traverse array
    for (j = 0; j < size - 1; j++) {
        // Left Shift element
        arr[j] = arr[j + 1];
    }
    // Store the value of temp at the last index of an array
    arr[j] = temp;
}

// Function to print values of an array
void print_array(int arr[], int size) {
    // Traverse array
    for (int i = 0; i < size; i++) {
        // Print value at index i
        cout << arr[i] << " ";
    }
    cout << endl;
}

// main function
int main() {
    // Initialize size of an array
    int size = 5;
```



```
// Initialize array elements
int arr[size] = {1, 2, 3, 4, 5 };

cout << "Array before left rotation" << endl;
// Call print_array function
print_array(arr, size);
// Call left_rotate function
left_rotate(arr, size);

cout << "Array after left rotation: " << endl;
// Call print_array function
print_array(arr, size);

return 0;
}
```



## Explanation #

To left rotate the elements of an array by one index, we move the element of the array at index `j+1` to index `j`, and the first element of the array goes to the end of the array.

### left\_rotate function #

The `left_rotate` function takes the array `arr[]` of type `int` and its `size` of type `int` in its input parameters.

As we move index `j+1` to `j`, the element at index 2 moves to index 1, and 1 move to 0. The first element at index 0 goes to the end of the array. If we iterate over the whole array and replace each element with the next element, then the first element is lost. We need to store the first element in a variable, iterate over the array(except for the last element as we replace it with the first element), replace each element `j` with its next element `j+1` (**Line No. 14**), and then replace the last element with the first element stored in a temp variable.

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Let's solve a difficult challenge related to arrays in the upcoming lesson.