Min-Max in C++

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#include <iostream>
#include <climits> // for INT_MAX and INT_MIN
using namespace std;

int getMin(int arr[], int i, int n) {
    if (n == 1) {
        return arr[i];
    } else {
        return min(arr[i], getMin(arr, i + 1, n - 1));
    }
}

int getMax(int arr[], int i, int n) {
    if (n == 1) {
        return arr[i];
    } else {
        return max(arr[i], getMax(arr, i + 1, n - 1));
    }
}

int main() {
    int arr[] = {12, 8, 45, 67, 9};
    int n = sizeof(arr) / sizeof(arr[0]);
    cout << "Minimum element of array: " <<
getMin(arr, 0, n) << endl;
    cout << "Maximum element of array: " <<
getMax(arr, 0, n) << endl;
    return 0;
}
```

For the input array {12, 8, 45, 67, 9}, the program will execute the following steps:

Finding the Minimum:

1. getMin(arr, 0, 5) (array = {12, 8, 45, 67, 9}):
    - Compare arr[0] (12) with getMin(arr, 1, 4).
2. getMin(arr, 1, 4) (array = {8, 45, 67, 9}):
    - Compare arr[1] (8) with getMin(arr, 2, 3).
3. getMin(arr, 2, 3) (array = {45, 67, 9}):
    - Compare arr[2] (45) with getMin(arr, 3, 2).
4. getMin(arr, 3, 2) (array = {67, 9}):
    - Compare arr[3] (67) with getMin(arr, 4, 1).
5. getMin(arr, 4, 1) (base case, array = {9}):
    - Return arr[4] (9).
6. Now backtrack:
    - getMin(arr, 3, 2) returns min(67, 9) = 9.
    - getMin(arr, 2, 3) returns min(45, 9) = 9.
    - getMin(arr, 1, 4) returns min(8, 9) = 8.
    - getMin(arr, 0, 5) returns min(12, 8) = 8.

Result: The minimum element is 8.

Finding the Maximum:

1. getMax(arr, 0, 5) (array = {12, 8, 45, 67, 9}):
    - Compare arr[0] (12) with getMax(arr, 1, 4).
2. getMax(arr, 1, 4) (array = {8, 45, 67, 9}):
    - Compare arr[1] (8) with getMax(arr, 2, 3).
3. getMax(arr, 2, 3) (array = {45, 67, 9}):
    - Compare arr[2] (45) with getMax(arr, 3, 2).
4. getMax(arr, 3, 2) (array = {67, 9}):
    - Compare arr[3] (67) with getMax(arr, 4, 1).
5. getMax(arr, 4, 1) (base case, array = {9}):
    - Return arr[4] (9).
6. Now backtrack:
    - getMax(arr, 3, 2) returns max(67, 9) = 67.
    - getMax(arr, 2, 3) returns max(45, 67) = 67.
    - getMax(arr, 1, 4) returns max(8, 67) = 67.
    - getMax(arr, 0, 5) returns max(12,

	67) = 67. **Result**: The maximum element is 67
Output:- Minimum element of array: 8 Maximum element of array: 67	