problem.c

```c
#include <stdio.h>

void waveSort(int arr[], int n) {
    for (int i = 0; i < n; i += 2) {

        if (i > 0 && arr[i] < arr[i - 1]) {
            int temp = arr[i];
            arr[i] = arr[i - 1];
            arr[i - 1] = temp;
        }

        if (i < n - 1 && arr[i] < arr[i + 1]) {
            int temp = arr[i];
            arr[i] = arr[i + 1];
            arr[i + 1] = temp;
        }
    }
}

int main() {
    int n;
    printf("Enter the number of elements: ");
    scanf("%d", &n);

    int arr[n];

    printf("Enter the elements of the array:\n");
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    waveSort(arr, n);

    printf("The wave sorted array is:\n");
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }

    return 0;
}
```