

**Prob 11.** Given an unsorted array of integers, sort the array into a wave array. An array `arr[0..n-1]` is sorted in wave form if:  
`arr[0] >= arr[1] <= arr[2] >= arr[3] <= arr[4] >= .....`

**Solve:**

```
#include <stdio.h>

#include <stdlib.h>

int compare(const void *a, const void *b) {
    return (*(int*)a - *(int*)b);
}

qsort(arr, n, sizeof(int), compare);

for (int i = 0; i < n - 1; i += 2) {
    int temp = arr[i];
    arr[i] = arr[i + 1];
    arr[i + 1] = temp;
}

}

void printArray(int arr[], int n) {
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
}

int main() {
    int arr[] = {3, 1, 2, 4, 5, 6};
    int n = sizeof(arr) / sizeof(arr[0]);

    printf("Original array:\n");
    printArray(arr, n);
```

```
waveSort(arr, n);
```

```
printf("Wave sorted array:\n");
```

```
printArray(arr, n);
```

```
return 0;
```

```
}
```