

Problem: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] >=

Ans:

Code:

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
int cmp(const void *a, const void *b) {
```

```
    return (*(int*)a - *(int*)b);
```

```
}
```

```
void waveArray(int arr[], int n) {
```

```
    qsort(arr, n, sizeof(int), cmp);
```

```
    for (int i = 0; i < n - 1; i += 2) {
```

```
        int temp = arr[i];
```

```
        arr[i] = arr[i + 1];
```

```
        arr[i + 1] = temp;
```

```
    }
```

```
}
```

```
int main() {
```

```
    int arr[] = {10, 5, 6, 3, 2, 20, 100, 80};
```

```
    int n = sizeof(arr) / sizeof(arr[0]);
```

```
    waveArray(arr, n);
```

```
    printf("Wave Array: ");
```

```
    for (int i = 0; i < n; i++) {
```

```
        printf("%d ", arr[i]);
```

```
    }
```

```
    return 0;
```

```
}
```