

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

```
void sortArray(int arr[], int size) {
```

```
    int i, j;
```

```
    for (i = 0; i < size - 1; i++) {
```

```
        for (j = 0; j < size - i - 1; j++) {
```

```
            if (arr[j] > arr[j + 1]) {
```

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

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

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

```
            }
```

```
        }
```

```
    }
```

```
}
```

```
void mergeArrays(int arr1[], int size1, int arr2[], int size2, int arr3[]) {
```

```
    int i;
```

```
    for (i = 0; i < size1; i++) {
```

```
        arr3[i] = arr1[i];
```

```
    }
```

```
    for (i = 0; i < size2; i++) {
```

```
        arr3[size1 + i] = arr2[i];
    }
}
```

```
int main() {
    int i, n, k;

    printf("Enter the size of the first array: ");
    scanf("%d", &n);
    int arr1[n];

    printf("Enter the elements of the first array: \n");
    for (i = 0; i < n; i++) {
        scanf("%d", &arr1[i]);
    }

    // Display unsorted first array
    printf("First Unsorted Array: \n");
    for (i = 0; i < n; i++) {
        printf("%d ", arr1[i]);
    }
    printf("\n");

    // Display the first sorted array
    sortArray(arr1, n);
```

```
printf("The first sorted array is: \n");
```

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

```
    printf("%d ", arr1[i]);
```

```
}
```

```
printf("\n");
```

```
printf("Enter the size of the second array: ");
```

```
scanf("%d", &k);
```

```
int arr2[k];
```

```
printf("Enter the elements of the second array: \n");
```

```
for (i = 0; i < k; i++) {
```

```
    scanf("%d", &arr2[i]);
```

```
}
```

```
// Display unsorted second array
```

```
printf("Second Unsorted Array: \n");
```

```
for (i = 0; i < k; i++) {
```

```
    printf("%d ", arr2[i]);
```

```
}
```

```
printf("\n");
```

```
// Display the second sorted array
```

```
sortArray(arr2, k);
```

```
printf("The second sorted array is: \n");
```

```
    for (i = 0; i < k; i++) {  
        printf("%d ", arr2[i]);  
    }  
    printf("\n");  
  
    int arr3[n + k];  
    mergeArrays(arr1, n, arr2, k, arr3);  
  
    printf("The merged unsorted array is: \n");  
    for (i = 0; i < n + k; i++) {  
        printf("%d ", arr3[i]);  
    }  
    printf("\n");  
  
    sortArray(arr3, n + k);  
    printf("The merged sorted array is: \n");  
    for (i = 0; i < n + k; i++) {  
        printf("%d ", arr3[i]);  
    }  
    printf("\n");  
    return 0;  
}
```