

Array Sorting

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

```
void main() {
```

```
    int arr1[100];
```

```
    int n, i, j, tmp;
```

```
    int swapped; // Flag to check if any elements were swapped during an iteration
```

```
    printf("Sort elements of array in ascending order:\n");
```

```
    printf("Input the size of array: ");
```

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

```
    printf("Input %d elements in the array:\n", n);
```

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

```
        printf("element - %d : ", i);
```

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

```
    }
```

```
    // Using Bubble Sort
```

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

```
        swapped = 0; // Flag to detect any swap
```

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

```
            if (arr1[j] > arr1[j + 1]) {
```

```
                // Swap elements if they are in the wrong order
```

```
                tmp = arr1[j];
```

```
                arr1[j] = arr1[j + 1];
```

```
                arr1[j + 1] = tmp;
```

```
                swapped = 1; // Flag to indicate a swap
```

```
    }  
}  
// If no elements were swapped, array is already sorted  
if (swapped == 0) {  
    break;  
}  
}  
// Print sorted elements in ascending order  
printf("\nElements of array in sorted ascending order:\n");  
for (i = 0; i < n; i++) {  
    printf("%d ", arr1[i]);  
}  
printf("\n\n");  
return 0;  
}
```