



链滴

第一次发帖，来个比较完美的冒泡排序，请  
赐教

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原文链接：<https://ld246.com/article/1525418406846>

来源网站：[链滴](#)

许可协议：[署名-相同方式共享 4.0 国际 \(CC BY-SA 4.0\)](#)

```

import java.util.*;

public class Test {
    @FunctionalInterface
    private interface CompOperation<T> {
        int doCompare(T o1, T o2);
    }

    private static <T> void bubbleSort(T[] array, CompOperation<T> op) {
        boolean swapped = true;
        for (int i = 1; swapped && i <= array.length - 1; ++i) {
            swapped = false;
            for (int j = 0; j < array.length - i; ++j) {
                if (op.doCompare(array[j], array[j + 1]) > 0) {
                    T temp = array[j];
                    array[j] = array[j + 1];
                    array[j + 1] = temp;
                    swapped = true;
                }
            }
            if (swapped) {
                swapped = false;
                for (int j = array.length - i - 1; j > 0; --j) {
                    if (op.doCompare(array[j], array[j - 1]) < 0) {
                        T temp = array[j];
                        array[j] = array[j - 1];
                        array[j - 1] = temp;
                        swapped = true;
                    }
                }
            }
        }
    }

    public static <T> void bubbleSort(T[] array, Comparator<T> comp) {
        bubbleSort(array, (CompOperation<T>) comp::compare);
    }

    private static <T extends Comparable<T>> void bubbleSort(T[] array) {
        bubbleSort(array, (CompOperation<T>) Comparable::compareTo);
    }

    public static void main(String[] args) {
        Integer[] x = { 23, 12, 99, 48, 57, 62, 33, 15, 9, 80 };
        bubbleSort(x);
        for (Integer temp : x) {
            System.out.print(temp + " ");
        }
        System.out.println();
        bubbleSort(x, (CompOperation<Integer>) (o1, o2) -> o2 - o1);
        for (Integer temp : x) {
            System.out.print(temp + " ");
        }
        System.out.println();
    }
}

```

```
}  
}
```