



-1	0	4	-5	6
1	4	16	25	36

16 > 1 ✓  
16 > 0  
16 > 25  
25 > 36

largest elements → sorted first

i + 1 →

-1	0	-5	4	6
----	---	----	---	---

$a[i] > a[j]$

if ( $a[i] * a[i] > a[j] * a[j]$ )  
swap ( $a[i], a[j]$ );

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Sort the array according to their Square of each element

Problem Submissions Leaderboard Discussions

Given an array `arr[]` of N integers, the task is to sort the array according to the Squares of each element.

Sample Input 0

5  
4 -1 0 -5 6

Sample Output 0

0 -1 4 -5 6

4	-1	0	-5	6
16	1	0	25	36

0	1	2	3	4
4	-1	0	-5	6

-5	-1	0	4	6
----	----	---	---	---

Sorted  
array

n elements  
n-1

itr-01

-1	0	4	-5	6
----	---	---	----	---

itr-02

0	-1	4	-5	6
---	----	---	----	---

itr-03

0	-1	4	-5	6
---	----	---	----	---

itr-04

0	-1	4	-5	6
---	----	---	----	---

16 > 1  
16 > 0  
16 > 25  
25 > 36  
1 > 0  
1 > 16  
16 > 25

0 > 1  
1 > 16  
0 > 1

0, 1, 2, 3

```
public static void sortArray(int arr[]){
    int n=arr.length;

    for(int itr=1;itr<=n-1;itr++){
        for(int j=0;j<n-itr;j++){
            if(arr[j]*arr[j]>arr[j+1]*arr[j+1]){
                swap(arr,j,j+1);
            }
        }
    }
}
```

$n=5$

4 -1 0 -5 6

$i+0-01 < 4$

$j=0 < 5-1$   
 ~~$j=0 < 4$~~   
 ~~$j=0 < 4$~~   
 $4 < 4$

-1	0	1	4	-5	6
----	---	---	---	----	---

$j$   $j+1$

$i+0=2$

$j=0 < 3$

$i+0=3$

$j=0 < 2$

$16 > 1$   
 $16 > 0$   
 $16 > 25$   
 $25 > 36$

arr → steps → sum → jump

Given an unsorted array of integers, sort the array into a wave like array. An array 'arr[0..n-1]' is sorted in wave form if  $arr[0] \geq arr[1] \leq arr[2] \geq arr[3] \leq arr[4] \geq \dots$

$$arr[0] \geq arr[1] \leq arr[2] \geq arr[3] \leq arr[4] \geq \dots$$



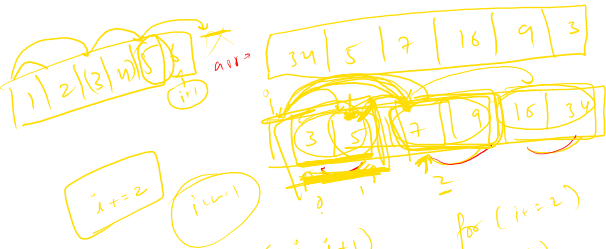
$$2 \geq 1 \leq 4 \geq 3 \leq 6 \geq 5 \leq 7$$

(i, i+1)

for (i=0; i<n-1; i+=2)  
arr[i], arr[i+1]

Steps:-

- # Array sort in increasing order.
- # Adjacent elements swap.



$$5 \geq 3 \leq 9 \geq 7 \leq 3 \leq 4 \geq 16$$



Syntax

Array.sort ( array-name );

Array.sort ( arr );

insertion (merge, hybrid)

Selection sort  
Insertion sort  
Bubble sort