

Arrays and Its Problems

Find the greatest number from the array.

7	3	4	5	1	3	9	4	6
0	1	2	3	4	5	6	7	8

sort
array {

1 3 3 4 5 6 7

9

largest

2	3	4	5	7	3	9	4	6
0	1	2	3	4	5	6	7	8

```

int largestNum (arr[], N)
{
    int largest = arr[0]

```

```

    for (i = 1 : i < N : i++)
    {
        if (arr[i] > largest)
        {
            largest = arr[i]
        }
    }

```

```

    return largest
}

```

$O(N)$

Find the second greatest number from the array.

$a(i)$
7
 $a(i+1)$
4

7	3	9	5	9	3	9	4	6
0	1	2	3	4	5	6	7	8

1 3 3 4 7 7 9 9 9 9

9

sort(arr)

N=1

for (i = n-2 ; i >= 0 ; i--)

{ if (arr[i] != arr[i+1])

return arr[i]

}

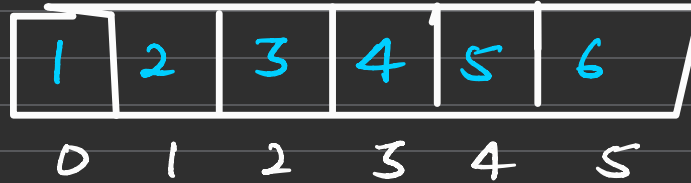
return -1

(7)

(-1)

```
if (n == 1)  
    return -1
```

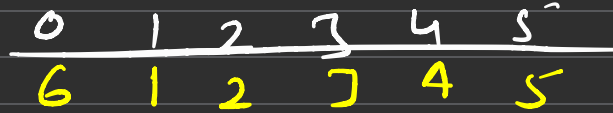
Rotate array to left by K Position



$N = 6$

$K = 3$

$K = 1$



$K = 2$

5 6 1 2 3 4

$K = 3$



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

$$N = 6$$

$$K = 3$$

for (j=1 : j ≤ K : j++) $O(K)$

}

$$temp = a[n-1]$$

$$O(N)$$

for (i=n-2 : i ≥ 0 : i--)

{

$$a[i+1] = a[i]$$

}

$$a[0] = temp$$

}

$$\underline{\underline{O(N \times K)}}$$

$$4 \% N = 4$$

1	2	3	4	5
0	1	2	3	4

$$N = 5$$

$$K = 9 \% N = 4$$

$K=1$ 5 1 2 3 4
 $K=2$ 4 5 1 2 3
 $K=3$ 3 4 5 1 2
 $K=4$ 2 3 4 5 1
 $K=5$ 1 2 3 4 5

$K=6$ 5 1 2 3 4
 $K=7$ 4 5 1 2 3
 $K=8$ 3 4 5 1 2
 $K=9$ 2 3 4 5 1
 $K=10$ 1 2 3 4 5

$$K = K \% N$$

1	2	3	4	5	6	7
0	1	2	3	4	5	6

$$K = 3$$

$$N = 7$$

5 6 7 1 2 3 4

7 6 5 4 3 2 1

K

N-K

5 6 7 1 2 3 4

$$K \% N == 0 \quad \text{---} \quad \underline{\underline{\text{arr}}}$$



— find smallest element from array

— ~~1~~ = second smallest

— Rotate Right by K time

1 2 3 4 5

K=2 3 4 5 1 2

Find Union of two arrays.

Input: a[] = [1, 2, 3, 4, 5], b[] = [1, 2, 3, 6, 7]

Output: 1 2 3 4 5 6 7

Explanation: Distinct elements including both the arrays are: 1 2 3 4 5 6 7.

Input: a[] = [2, 2, 3, 4, 5], b[] = [1, 1, 2, 3, 4]

Output: 1 2 3 4 5

Explanation: Distinct elements including both the arrays are: 1 2 3 4 5.

Input: a[] = [1, 1, 1, 1, 1], b[] = [2, 2, 2, 2, 2]

Output: 1 2

Explanation: Distinct elements including both the arrays are: 1 2.