

Given an array and an integer  $K$ , find the maximum for each and every contiguous subarray of size  $K$ .

Examples :

Input:  $arr[] = \{1, 2, 3, 1, 4, 5, 2, 3, 6\}$

$K=3$

length of subarray = 3

Output: 3 3 4 5 5 5 6

Approach

Brute Force

return  $\langle int \rangle ans;$

for (int  $i=0$ ;  $i<arr.length$ ;  $i++$ )  $\rightarrow O(N)$

{  
max\_val = arr[i];

for (int  $j=i$ ;  $j<K+i$ ;  $j++$ )

{  
if ( $arr[j] > max\_val$ )

{  
max\_val = arr[j];

}  
ans.push(max\_val);

}

$O(N \times K)$

$K=2$

3 2 2 1  
0 1 2 3  
K

2 3  
2 2  
1 3  
3

3 2  
(i-k+1)  
(2-2+1)  
i=2  
(1-2)  
(0-2+1)  
0 X 5

3, 2, 2

i  $\rightarrow$  K-1

i=0  $\rightarrow$  K-1

i=1  $\rightarrow$  K

i=2  $\rightarrow$  K+1

$\leq K$

$\leq K+1$

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largest will be on top  
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