MTCS-103P_ST-2
Regd no: 22555

Objective

Implement MPI program to find the kth largest number from a given set of numbers. Check the answer with the set given below:

{22, 35, 321, 76, 75, 164, 497, 468, 234, 56, 198, 204, 309, 296, 225, 247, 59, 70, 239}

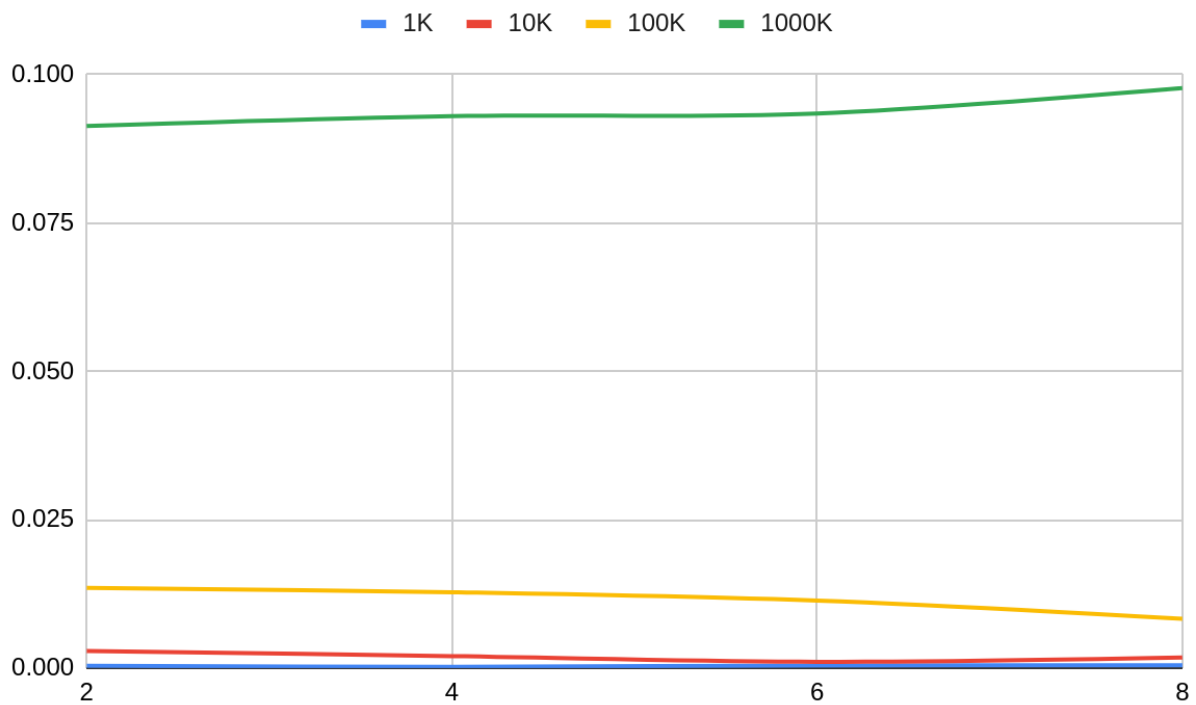Ensure that the code designed for the above purpose works for any arbitrary set.

Results:

For the given data set:

Kth value	Time(s)
1	0.000134
2	0.000106
4	0.00012
6	0.000097
8	0.000118

For any arbitrary set: for 100th largest element.

Size	no. of processes	Time(s)
	2	0.000389
1K	4	0.000223
	6	0.000433
	8	0.000446
	2	0.00287
10K	4	0.002012
	6	0.001043
	8	0.001771

	2	0.013519
100K	4	0.012786
	6	0.011372
	8	0.008299
	2	0.091334
1000K	4	0.092998
	6	0.093445
	8	0.097752

Time vs no. of processes Graph is shown above for the different size of the input array.