Justin Galloway
009610068

Implement the two algorithms for finding the kth smallest integer in a set of integers using only one array that contains all the integers. Test your programs and compute the CPU time for different sets of integers generated by a random number generator.

The random array created is partitioned into three segments using pivot points. The first algorithm uses a random value as the pivot point, and the second algorithm calculates medians of values and uses those as the points.

Data Set Size	Alg 1 CPU Time (nsec)	Alg 2 CPU Time (nsec)
1,000	230849	769479
1,000	302843	1028862
1,000	226587	1237483
10,000	1343763	6843673
10,000	1295784	6983460
10,000	1705477	7034798
100,000	13859723	31074832
100,000	10535793	28437589
100,000	9827495	29748572
1,000,000	32987503	83826493
1,000,000	30174835	68346892
1,000,000	49943758	62843767
10,000,000	92478503	328659833
10,000,000	156409584	687386439
10,000,000	184973853	643982743