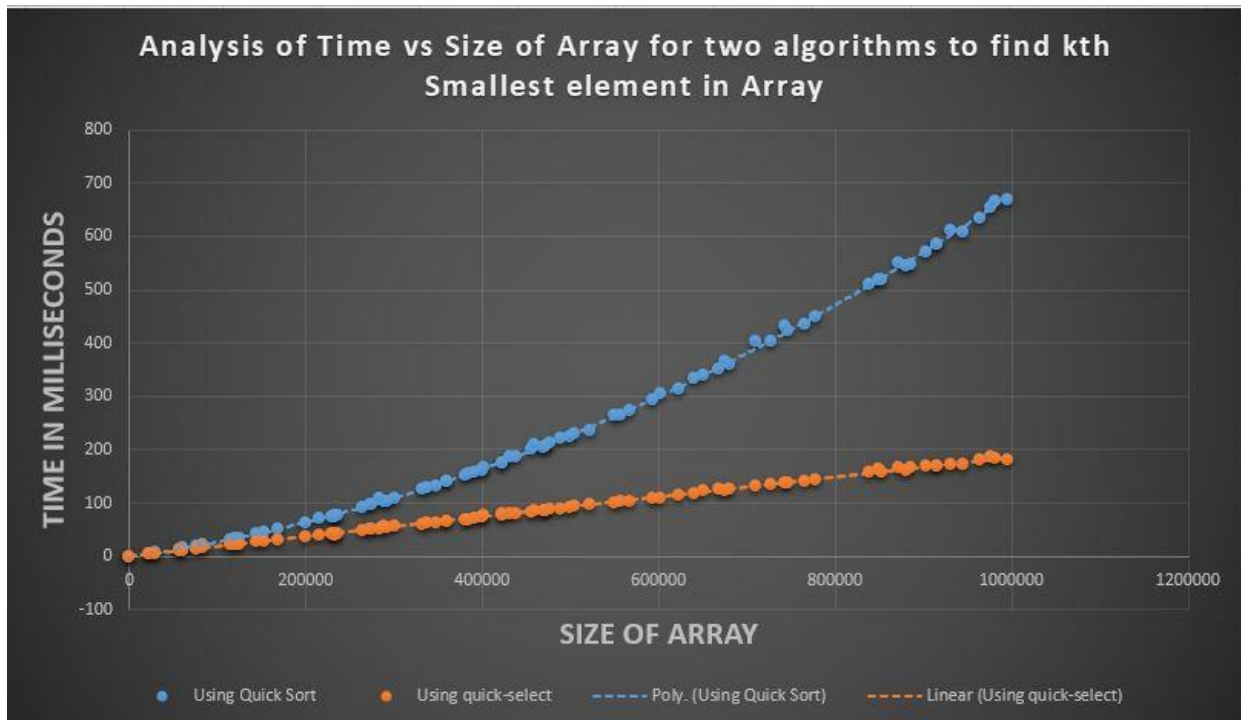# Design and Analysis of Algorithms
ASSIGNMENT 1

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To find the kth smallest element in an array and find the times taken by each
- using Quick Sort where run time would be Θ (nlogn)
- using Quick Select technique where the worst case would be O(n)

The plotted graph shows the variation in the times taken by both the algorithms. The time taken using quick sort rises much faster than the quick select technique as the size of array increases.

The graph has been plotted by noting the outputs for different values of array size, generated randomly. The time was measured by the time.h library in C++. Random values of array size and the elements were generated using random number generator function. The random numbers generated were stored in a file using bash commands and the same was given as input for both the algorithms and the corresponding outputs were stored in a different file. The output from the files were taken and graphs were plotted.