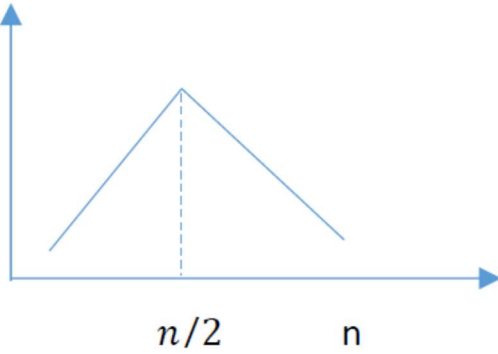


Assignment-02

Instructions: (Read Carefully)

- a) Take matrix size as 100×100 and array/set size as of 1000 where required.
- b) II. Use random functions to generate elements.
- c) III. Illustration must be the part of your report for proper explanation of the algorithm.
- d) IV. Complexity analysis is mandatory for all questions.

Question Code	Questions
Q01	Find largest sorted subsequence started with different positions in the matrix (find all occurrences of largest sorted subsequence along with start location).
Q02	Merge two sorted subsequence in most possible optimal way.
Q03	Perform UNION operation given two sets of positive integers (take length of each set > 100).
Q04	Perform INTERSECTION operation given two sets of positive integers (take length of each set > 100).
Q05	Perform RINGSUM operation given two sets of positive integers (take length of each set > 100).
Q06	Utilize UNION operation given two sets of positive integers to output sorted array. (Take length of each set > 100.)
Q07	Create a matrix such that every row, column and diagonals are sorted.
Q08	Generate all sequences of length 1 to 11. Detect and print sorted sequences. Range of numbers in a sequence should be the length of sequence like for sequence of length 4 numbers should be 1, 2, 3, and 4.
Q09	Sort a matrix of positive integers using insertion sort.
Q10	Sort a matrix of positive integers using selection sort.
Q11	Prepare a frequency distribution table along with location information from a randomly generated matrix of 2-digit positive integers.
Q12	Given a set of points, sort the points concentrically, radially.
Q13	Find nearest and farthest 5 neighbours while making reference point mobile.
Q14	Find k-nearest and k-farthest neighbours, for each of the four corners of a rectangular kernel in a matrix. (For example, in a 100×100 matrix, take starting position as (25,25) making a kernel of size 30×60 .)
Q15	Find k-nearest and k-farthest neighbours of a mobile point moving diagonally in a matrix (input should be starting position and steps of unit size of the point).
Q16	Print number of swapping operation while sorting an array of 1000 positive integers using merge sort, insertion sort, and selection sort.

Q17	Print number of swapping operation while sorting an array of 1000 positive integers using quick sort, heap sort, and bubble sort.
Q18	Print location wise trail of elements while sorting an array of 1000 positive integers using merge sort, insertion sort, and selection sort.
Q19	Print location wise trail of elements while sorting an array of 1000 positive integers using quick sort, heap sort, and bubble sort.
Q20	Print content wise trail of each location (indices) while sorting an array of 1000 positive integers using merge sort, insertion sort, and selection sort.
Q21	Print content wise trail of each location (indices) while sorting an array of 1000 positive integers using quick sort, heap sort, and bubble sort.
Q22	Convolve 3×3 mask and check if it is sorted, if not find largest sorted subsequence.
Q23	Find out collinear points parallel to X-axis, Y-axis. Given a set of 5000 randomly generated points.
Q24	<p>Sort a sequence and arrange as:</p> 
Q25	<p>Sort a sequence and arrange as:</p> 