

# Indian Institute of Information Technology Vadodara

## Lab Assignment 4

### CS162: Introduction to Data Structures Laboratory

**Problem 1:** Do the following.

- Implement binary search algorithm and linear search algorithm.
- Run each algorithm in part (a) for an input array of 500,1000,2000,5000, and 10000 elements.

Note: Consider all elements of the array between 1000-10000. Elements may repeat.

- Repeat each execution for 10 times and take the average running time.
- Fill the following table.

# of elements	500	1000	2000	5000	10000
Linear Search time (in ...)					
Binary search time (in ...)					

**Note:** Don't measure the sorting time in binary search algorithm.

**Problem 2:** Implement ArrayLinearList data structure and implement atleast the following Methods.

- add(index,element)
- remove(element)
- toString()
- arrayExpansion()

#### Additional Task

**Problem 3:** Create a Singly Linked List and print it. Reverse the list and print it.