DSA LAB Programming Practice
<u>One Dimensional Array</u>

All the programs can be written with static array and dynamic array. In most of the arrays, you take the input as the random value.

1. Write a program to search an element in an array.
2. Write a program to reverse an array.
3. Write a program to reverse the even index position and odd index position for even element array and odd element array.
4. Write a program to find the maximum number of consecutive elements present in ascending order.
5. Write a program that will arrange all the even numbers in one end of the array and all the Odd numbers in another end of the array. (you need to traverse the array only once)
6. In a one dimensional array insert one or more element at a particular position of an array.
   Ex: Given array: 1,2,3,4,5,6,7,8,9
   insert 15,17,19 at the 5th position of the given array.
   Output: 1,2,3,4,15,17,18,5,6,7,8,9
   You can apply the realloc to increase the size of the array if necessary.
7. In a one dimensional array delete one element at a particular position of an array.
8. In a one dimensional array delete all even numbers present in the array.
9. In a one dimensional array find out all the elements and their position, which is the summation of its immediate previous contiguous elements.
   Ex: Given array: 2,9,6,3,9,8,17,3,6,4,13,5

   Output: output is 9, which is a summation of it's previous elements 3 and 6
   output is 13, which is a summation of it's previous elements 4,6 and 3
10. In a one dimensional array find out all the elements and their position, which is the summation of its immediate previous contiguous elements and those previous elements are either in ascending or descending order.
    Ex: Given array: 2,9,6,3,9,8,17,3,6,4,13,5

    Output: output is 9, which is a summation of it's previous elements 3 and 6
11. In a one dimensional array, user gives a certain range of index with shifting value. You need to right shift and rotate those range of values based on the given shifting value. Do the same for left shift.
    Given array: 2,9,6,3,**5,8,11,3,6,7**,13,5
    Given range: 4th index to 9th index(consider the starting index is 0) and shifting value is 2
    Output: 2,9,6,3,6,7,5,8,11,3,13,5

    Given array: 2,9,**6,3,5,8,11,3,6**,7,13,5
    Given range: 2nd index to 8th index(consider the starting index is 0) and shifting value is 4
    Output: 2,9,8,11,3,6,6,3,5,7,13,5
12. Write a program to remove repeated elements in a given array.
13. Write a program to find the maximum number of consecutive elements present in ascending order.
14. Write a program to find whether an array is subset of another array.

15. Write a menu driven program to insert element at first, at last, at middle, at a position in an integer array.
16. Write a menu driven program to delete element at first, at last, at middle, at a position in an integer array.
17. Write a program to find the intersection of two sets(consider each set is an array).
18. Write a program that will create an ascending element array from the given unsorted array by fulfilling the following criteria.
    - The values present in the resultant array may be different from the original array but the digits present in the each element of the original array must be present in the same position of the resultant array.
    - Your target should be minimize the maximum value present in the resultant array.

      Ex: Original array: 2,9,6,3,9,8,17,3,4,6,13,5

      Resultant array: 2, 9, 16, 23, 29, 38, 71, 73, 74, 76, 103, 105