Arrays:

1.Write a program in C to read n number of values in an array and display them in reverse order.

Test Data :

Input the number of elements to store in the array :3

Input 3 number of elements in the array :

element - 0 : 2

element - 1 : 5

element - 2 : 7

***Expected Output* :**

The values store into the array are :

2 5 7

The values store into the array in reverse are :

7 5 2

2.Write a program in C to merge two arrays of the same size sorted in descending order.

Test Data :

Input the number of elements to be stored in the first array :3

Input 3 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

Input the number of elements to be stored in the second array :3

Input 3 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

***Expected Output* :**

The merged array in decending order is :

3 3 2 2 1 1

3.Write a program in C to find the maximum and minimum elements in an array.

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 45

element - 1 : 25

element - 2 : 21

***Expected Output* :**

Maximum element is : 45

Minimum element is : 21

4.Write a program in C to read a string from the keyboard and sort it using bubble sort.

Test Data :
Input number of strings :3
Input string 3 :
zero
one
two

***Expected Output* :**

The strings appears after sorting :

one

two

Zero

5.Write a C program that checks whether a given string is a palindrome or not. A palindrome is a string that reads the same forwards and backwards, ignoring spaces, punctuation, and case differences.

1.Input: "Racecar"

Output: 'Racecar' is a palindrome.

2.Input: "Hello, World!"

Output: 'Hello, World!' is not a palindrome.

3.Input: "Was it a car or a cat I saw?"

Output: 'Was it a car or a cat I saw?' is a palindrome.

6.Write a program in C to count the number of punctuation characters present in a string.

Test Data :
Input a string : The quick brown fox, jumps over the, lazy dog.

***Expected Output* :**

The punctuation characters exists in the string is : 3

7.Write a C program to count how many times a given element appears in an array.

Example Input: Array: {1, 2, 3, 2, 2, 4, 5, 2}
Element: 2

Example Output: Element 2 occurs 4 times.

8. Write a C program to print all negative elements in an array.

9. Write a C program to find the second largest element in an array.

10. Write a C program to copy all elements from an array to another array.

11. Write a C program to delete an element from an array at specified position.

12. Write a C program to put even and odd elements of array in two separate array.

13. Write a C program to sort array elements in ascending or descending order.

14. Write a C program to sort even and odd elements of array separately.

15. Write a C program to left rotate an array.

16. Write a C program to read two integer values m and n. Fill an m by n matrix (m rows and n columns) with random integers in the range **[1,5]** by calling the rand function. Find whether the following **2X2** pattern is present in the matrix display the location (row and column numbers) in the array where the pattern is present.

    [01]
    [23]

17. Fill a 4X4 two dimensional array randomly with the numbers in the range **[4,8**]. Display the array properly formatted. Check if any of the row, column, or principal diagonal adds up to **24**. Display the contents of only those rows, columns, or diagonals and make other entries appear blank.
18. Declare an integer array of size 20. Fill it with random integers in the range 1 to 100 by calling the rand() function. Display the numbers, also compute and display the average, and the standard deviation of the numbers.

19. Declare an integer array of size 20. Fill it with random integers in the range 100 to 199 by calling the rand() function.
    a. Display the numbers nicely formatted. (Hint: use mod 100 to get random numbers in the range 0 to 100. Add 100, to get numbers in the rage 100 to 199.)
    b. Pairwise interchange the numbers (i.e, first and second, third and fourth, and so on.) and display the numbers. For example, if the array has numbers 101, 190, 130, 145, after interchange, the numbers will be 190, 101, 145, 130.

20. Declare an integer array of size 20. Fill it with random integers in the range [100,199] by calling the rand() function. Display the numbers. Display if any arbitrary pair(s) of numbers present in the array add up to a value in the range [160,170].

21. Define an integer array of size 30. Fill the array with random numbers in the range of [20,50] and display the values stored in the array nicely formatted. Then carry out the following:
    a. **maxMin:** Display the minimum and maximum of the values stored in the array.
    b. **duplicate:** Display all the numbers that occur more than once.
    c. **highestFreq:** Display the number that occurs with highest frequency.
    d. **largestIncreasing:** Display the largest sequence of increasing numbers occurring in the array.
    e. **largestDecreasing:** Display the largest sequence of decreasing numbers occurring in the array.

Functions

1.Write a C program to find cube of any number using function.

2.Write a C program to find diameter, circumference and area of circle using functions.

3.Write a C program to check whether a number is even or odd using functions.

6. Write a C program to print all Armstrong numbers between given interval using functions.

7. Write a **non-recursive** function reverse(N) which takes a decimal integer N as argument, and returns the integer which is formed by reversing the order of digits of N. For instance, reverse(**3418**) should return the integer **8143**. Write a main() function to demonstrate use of the reverse() function.

8. In the main function, define an integer array of size 30. Fill the array with random numbers in the range of [20,30] and display the values stored in the array nicely formatted. Based on the user choice, call the following functions in an infinite loop. Exit when the user types 'e'.

   a. **maxMin:** This function should take the array as its parameter and display the minimum and maximum of the values stored in the array.
   b. **duplicate:** This function should take the array as its parameter and display the number that occur more than once.
   c. **highestFreq:** This function should take the array as its parameter and display the number that occurs with highest frequency.
   d. **largestConsecutive:** This function should take the array as its parameter and display the largest sequence of consecutive numbers occurring in the array.
   e. **largestDecreasing:** This function should take the array as its parameter and display the largest sequence of decreasing numbers occurring in the array.

9. Write a function that takes a positive integer as input and displays all the positive factors of that number

10. Write a function to find and count the sum of only even digits in an integer

11. Write a function to count the number of Vowels, Consonants and symbols and print the same

12. Write a function to check whether a number can be expressed as the sum of two prime numbers

You may use a separate method to check primality