A. Arrays

1. Write a program to search for an element from an array input from the user.
2. **Inserting** an element into a position of an array. The element and the insertion point are inputs from the user.
3. Inserting a number/character into the proper position of an array which is sorted in ascending/descending order.
4. **Deleting** an element from an array.
5. Write a program to find out the **maximum, minimum, median** and **mode** of an array of numbers.
6. Find **k-th maximum** and **k-th minimum** from an array.
7. Write a program to delete **duplicate** elements from an array.
8. Write a program to **merge** two arrays removing the duplicate elements.
9. Write a program to **merge** two sorted arrays.
10. (In addition to alphabet letters, count also the space, tab and punctuation letters)
11. Take n numbers as input from the user. Find out their **GCD** (Greatest Common Divisor) and **LCM** (Least Common Multiple).

B. Function

1. Write a function **power(a,b)** to calculate the value of **a** raised to **b**.
2. Write a function to calculate LCM of two numbers.
3. Write a function to calculate GCD of two numbers.
4. Any year is entered through the keyboard. Write a function to determine whether the year is a leap year or not.
5. A prime integer is entered through the keyboard. Write a function to obtain the **prime factors** of this number. For example, prime factors of 24 are 2, 2, 2 and 3 whereas prime factor of 35 are 5 and 7.
6. Write a program which receives 5 integers and returns the sum , average and standard deviation of these numbers. Call this function from **main()** and print the results in **main()**.
7. A 5 digit positive integer is entered through the keyboard, write a function to calculate sum of digits of the 5 digit number
   (i) Using recursion
   (ii) Without using recursion
8. Write a recursive function to obtain the first 25 numbers of a Fibonacci sequence. In a Fibonacci sequences the sum of two successive terms given the third term. Following are the first few term of the Fibonacci sequence:

1 1 2 3 5 8 13 21 34 55…

C. String

1. Write code to check if a string is palindrome or not.
2. Input two strings. Check if the second string is the substring of the first string or not.
3. Input two strings. Check if the second string is the subsequence of the first string or not.
4. Input a string and print its reverse.
5. Write a program to count the **frequencies of** each **character** present in a text.
6. Write a program to count the **number of letters** and **words** within a text.
7. Input a string and print its reverse without reversing the words. For example:
   Input: I am a student of SEU
   Output: SEU of student a am I