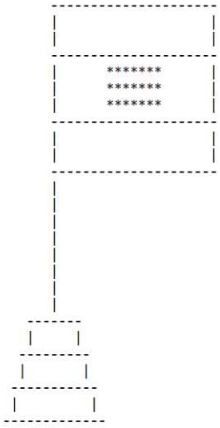
C++ Lab 'A' 'B', 'C' 25-1-2023

1. Code to print the Indian flag pattern using functions. Number of fucntions should be of minimum.



2. **MaxMinDigit , Sumdigits–recursive**

Code a recursive function which pints maximum digit, minimum digit among all the digits of a given number, and sum of all digits.

input: n = 7496 Output : max digit =9 min digit = 4 sum = 26

input : n = 63257 Output : max digit =8 min digit is = 2 sumd = 23

3. **Max Min Sum Reverse Palindrome of Array:**

Write a **single** function that will output maximum, minimum , sum , reversing array elements and checks if the array is a palindrome for the given array.

The main() function calls that single function and in the main function only the values are to be printed.

sample coding format ....

..... **findmaxminsumrevpalin**(.....)

```
main ( )
    { .....
     ......
      findmaxminsumrevpalin( ......)
    cout << ... << ... << ... ;
    for ( , , , ) cout <<
    cout <<
    }
```

Example 1 : input : number of array elements n = 8

Array A = { 4 7 1 6 2 9 1 5 },

then the output should be as :

9 1 35

5 1 9 2 6 1 7 4

0 (means not a Palindrome)

(1 means palindrome)

Test case 1

Input:

8

4 7 1 6 2 9 1 5

Output:

9 1 35

5 1 9 2 6 1 7 4

0

Test case 2

Input:

11

8 2 4 1 5 9 5 1 4 2 8

Output:

9 1 49

8 2 4 1 5 9 5 1 4 2 8

1

4. **Merge Arrays within**

Given two sorted integer arrays `A[]` and `B[]` of size `m` and `n` each where `m >= n` and `A[]` has exactly `n` vacant cells, merge elements of `B[]` in their correct position in array `A[]`, i.e., merge `(A, B)` by keeping the sorted order.

You should not use any other arrays, should use A and B only.

Input : Two arrays A[] and B[] where vacant cells in A[] is represented by 0.

A[] = [0, 2, 0, 3, 0, 5, 6, 0, 0]

B[] = [1, 8, 9, 10, 15]

Output: A[] = [1, 2, 3, 5, 6, 8, 9, 10, 15]

Test case input :

0 2 0 3 0 5 6 0 0 8 0 -1 (-1 is the end of input)

1 7 9 10 12 15 -1 (-1 is the end of input)

Test case 0utput :

1 2 3 5 6 7 8 9 10 12 15

5. **Elfish word**

A word is considered elfish if it contains the letters: e, l, and f in it, in any order.

For example, we would say that the following words are elfish:

whiteleaf, tasteful, unfriendly, and waffles, because they each contain those letters.

Code a recursive function to check whether a given word is elfish.

You have to assume str1 = "elf"

Input : (read **5** strings)

Whiteleaf Tasteful Unfriendly waffles tested

output :

1 1 1 1 0

6. **Row Col equals of Matrix**

Read a MxN matrix of numbers.

Code **recursively** to print equal rows and equal columns of the Matrix.

Test case:

Input : 5 4 (m , n)

1 2 3 3

2 3 4 4

1 2 3 3

1 2 2 2

1 2 3 3

Output :

0 2 4 (rows o , row 2 and row 4 are equal)

2 4 (column 2 and column 4 are equal)

"It is not what you say, or wish, or hope or intend, it is only what you do that counts." -- Brian Tracy	**" Like to do Hard Work Luck to be the Winner "** **- KR**