# PROGRAMMING QUESTION

## Q1. Program to print all substrings of a given string

Given a string as an input. We need to write a program that will print all non-empty substrings of that given string.

Hint:( Using 3 loops or using substr function)

***Input***: abcd

***Output***:

```
a
ab
abc
abcd
b
bc
bcd
c
cd
d
```

## Q2. Largest number dividing maximum number of elements in the array

Given an array arr[] of length N, the task is to find the largest number dividing the maximum number of elements from the array.

***Input:*** *arr[] = {2, 12, 6}*
***Output:*** *2*
*1 and 2 are the only integers which divide the*
*maximum number of elements from the array*
*(i.e. all the elements) and 2 is*
*the maximum among them.*

***Input:*** *arr[] = {1, 7, 9}*
***Output:*** *1*

## Q3. **Reverse an array in groups of given size**

Given an array, reverse every sub-array formed by consecutive k elements.

***Input:***
*arr = [1, 2, 3, 4, 5, 6, 7, 8, 9]*
*k = 3*
***Output:***
*[3, 2, 1, 6, 5, 4, 9, 8, 7]*

## Q4. **Equilibrium position of an array**

Equilibrium position of an array is an index such that the sum of elements at lower indexes is equal to the sum of elements at higher indexes. For example, in an array A:

Example :
*Input: A[] = {-7, 1, 5, 2, -4, 3, 0}*
*Output: 4*
*4 is an equilibrium position, because:*
*A[0] + A[1] + A[2] = A[4] + A[5] + A[6]*

Q5. Write a program to reverse a linked link.

Q6. Write a program to print middle element of linked list.

Q7**.** Program to find Smallest and Largest Word in a String

**Input :** "This is a test string"
**Output :** Minimum length word: is
Maximum length word: string

*Q8.*

**Print matrix in diagonal pattern**

Given a matrix of n*n size, the task is to print its elements in diagonal pattern.

*Input:*

*1 2 3*

*4 5 6*

*7 8 9*

*Output:*

*1*

*4 2*

*3 5 7*

*8 6*