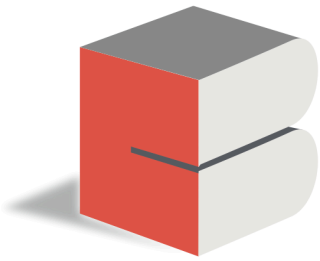

CODING BLOCKS

Assignment 1

1. Write code for following pattern which takes number of lines, N as input. For N = 9 -

```
*********
****  ****
***    ***
**      **
*        *
**      **
***    ***
****  ****
*********
```

2. Write a program to find square root of an input.
   a. Just find the integral part b.
   b. Find the square root with an accuracy of n decimal points, n is provided by the user.

3. You are given S a sequence of n integers S = s1, s2 , ..., sn. Please compute if it is possible to split S into two parts: s1, s2, ..., si and si +1, si +2, ..., sn (1 <= i < n) in such a way that the first part is strictly decreasing while the second is strictly increasing one. First take n as input and then take n more integers, Output yes or no.

4. You are given two arrays. Find the sum of the two arrays and put the result in another array. E.g. if you are given [1,2,4] and [4,5,6] the output should be [5,8,0].

5. Find the duplicate number in an array of size n with numbers from 0 to n-2. Each number is present at least once.

6. Implement Selection and Insertion sort.

7. Given an array of integers A and an integer x. Find triplets of elements in A which sum to x.

8. You are given with an array containing only 0's and 1's. Write a function to sort this array. Find a solution, which scans the array only once.

9. What if the array has 0's, 1's and 2's? Find another solution, which scans the array once.