1. You are given a string S. Write a function to find the longest substring of the given string S which contains at most 2 unique characters. If there are more than 1 substrings of max length, then return any one. Example: S = "abbbcccbcbddeeffffabbbcbc" Output = ["bbbcccbcb"] S = "mississippi"Output = ["ississi"]
2. Create a function which reverses words of the given string. e.g: "This is great" , output – "great is This" in O(N)
3. Given a number N, write a program to list the ways of obtaining N by using numbers from 1 to N-1 any number of times.

   Example :
   Input -
   N= 4
   Output –
   1,1,1,1
   1,1,2,
   1,3
   2,2
   3,1
   2,1,1
   1,2,1
4. Implement strtok - http://www.cplusplus.com/reference/cstring/strtok/
5. 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.
   a. Write a predicate function called elfish? that, given a word, tells us if that word is elfish or not.
   b. Write a more generalized predicate function called x-ish? that, given two words, returns true if all the letters of the first word are contained in the second...
6. Given the size of the chess board and initial position of the knight, what is the probability that after k moves the knight will be inside the chessboard.
   a. The knight makes its all 8 possible moves with equal probability.

   b. Once the knight is outside the chessboard it cannot come back inside
7. Implement move function of Othello discussed in class.
8. Given three strings A, B and C. Write a function that checks whether C is an interleaving of A and B. C is said to be interleaving A and B, if it contains all characters of A and B and order of all characters in individual strings is preserved. Example
   a. A – abc, B – def, C – dabecf – True
   b. A – abacd, B – abaa, C – ababaacda - True

9. Find the magnitude pole of an array - "A magnitude pole of an array A consisting of N integers is an index K such that all elements with smaller indexes have values lower or equal to A[K] and all elements with greater indexes have values greater or equal to A[K]. Example:
   Input = [4,1,2,3,1,4,7,8,6,9]
   Output = 5
10. You are given with an array of negative and positive numbers. Write an function to find the index at which the array should be divided into 2 sub-arrays in such a way that the difference between the sum of the 2 sub-array is maximum.
   Example –
   Input – [2, -4, 3, 1, -6, -1, 2, 7]
   Output – 5
   [**2, -4, 3, 1, -6, -1]** and **[2, 7]**. The difference is **9 – (-5) = 14**, which is maximum
11. Implement a^n in O(log n)