**RECURSION-SUBSEQUENCES**

Take as input str, a string. We are concerned with all the possible subsequences of str. E.g.

a. Write a recursive function which returns the count of subsequences for a given string. Print the value returned.

b. Write a recursive function which prints all possible subsequences for a “abcd” has following subsequences “”, “d”, “c”, “cd”, “b”, “bd”, “bc”, “bcd”, “a”, “ad”, “ac”, “acd”, “ab”, “abd”, “abc”, “abcd”.given string (void is the return type for function).  
Note: Use cin for input

**Input Format:**

Enter a string

**Constraints:**

None

**Output Format**

Display the total no. of subsequences and also print all the subsequences in a space separated manner

**Sample Input**

abcd

**Sample Output**

d c cd b bd bc bcd a ad ac acd ab abd abc abcd

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Program-

#include<iostream>

#include<string.h>

using namespace std;

static int s=0;

void count()

{

s++;

//cout<<s;

}

void subsequence(char \*str1,char \*str2,int i,int j)

{

//Base case

if(str1[i]=='\0')

{

count();

str2[j]='\0';

cout<<str2<<" ";

return;

}

subsequence(str1,str2,i+1,j);

str2[j]=str1[i];

//include the current character

subsequence(str1,str2,i+1,j+1);

//exclude the current

}

int main()

{

char str1[100],str2[100];

cin>>str1;

subsequence(str1,str2,0,0);

cout<<endl<<s;

}