**APS Lab**

**Lab Test-2**

**Greedy Approach (12 M)**

1. Given an array of integers, return true if we can partition the array into three non-empty parts with equal sum.

Example 1:

Input: arr = [0,2,1,-6,6,-7,9,1,2,0,1]

Output: true

Explanation: 0 + 2 + 1 = -6 + 6 - 7 + 9 + 1 = 2 + 0 + 1

Example 2:

Input: arr = [0,2,1,-6,6,7,9,-1,2,0,1]

Output: false

Example 3:

Input: arr = [3,3,6,5,-2,2,5,1,-9,4]

Output: true

Explanation: 3 + 3 = 6 = 5 - 2 + 2 + 5 + 1 - 9 + 4

#include <iostream>

using namespace std;

int r[100][100];

bool equal\_sum(int arr[],int n,int sum)

{

for (int i=0;i<n;i++){

for (int j=0;j<n;j++){

if (i==0){

r[i][j]=false;

}

if (j=0){

r[i][j]=true;

}

else

r[i][j]=false;

return r[i][j];

}

}

}

int main()

{

int n;

int arr[100];

cout<<"Enter the size of arr ";

cin>>n;

cout<<"Enter the array :";

for (int j=0;j<n;j++)

cin>>arr[j];

cout<<"true";

int sum=0;

for(int i=0;i<n;i++)

int sum=sum+arr[i];

}

**Dynamic approach: (8M)**

2 .Given two strings str1 and str2, the task is to find the length of the shortest string that has both str1 and str2 as subsequences.

**Examples :**

Input: str1 = "geek", str2 = "eke"

Output: 5

Explanation:

String "geeke" has both string "geek"

and "eke" as subsequences.

Input: str1 = "AGGTAB", str2 = "GXTXAYB"

Output: 9

Explanation:

String "AGXGTXAYB" has both string

"AGGTAB" and "GXTXAYB" as subsequences.

#include <iostream>

using namespace std;

int scs(string S1,string S2,int m,int n)

{

if (m==0 || n==0)

return 0;

if (S1[m-1]==S2[n-1])

return 1+scs(S1,S2,m-1,n-1);

else

return max (1+ scs(S1,S2,m-1,n),scs(S1,S2,m,n-1));

}

int main()

{

string S1 = "AGGTAB";

string S2 = "GXTXAYB";

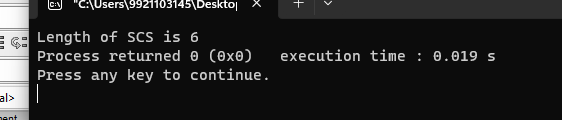
int m = S1.size();

int n = S2.size();

cout<<"Length of SCS is "<<scs(S1, S2, m, n);

return 0;

}



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