Program 8: Design and implement C/C++ Program to find a subset of a given set S = {sl , s2,.....,sn} of n

positive integers whose sum is equal to a given positive integer d

#include<stdio.h>

#define MAX 10

int s[MAX],x[MAX],d;

void sumofsub(int p,int k,int r)

{

int i;

x[k]=1;

if((p+s[k])==d)

{

for(i=1;i<=k;i++)

if(x[i]==1)

printf("%d ",s[i]);

printf("\n");

}

else

if(p+s[k]+s[k+1]<=d)

sumofsub(p+s[k],k+1,r-s[k]);

if((p+r-s[k]>=d) && (p+s[k+1]<=d))

{

x[k]=0;

sumofsub(p,k+1,r-s[k]);

}

}

int main()

{

int i,n,sum=0;

printf("\nEnter the n value:");

scanf("%d",&n);

printf("\nEnter the set in increasing order:");

for(i=1;i<=n;i++)

scanf("%d",&s[i]);

printf("\nEnter the max subset value:");

scanf("%d",&d);

for(i=1;i<=n;i++)

sum=sum+s[i];

if(sum<d || s[1]>d)

printf("\nNo subset possible");

else

sumofsub(0,1,sum);

return 0;

}

Input/output:

Enter the n value:9

Enter the set in increasing order:1 2 3 4 5 6 7 8 9

Enter the max subset value:9

1 2 6

1 3 5

1 8

2 3 4

2 7

3 6

4 5

9