**Subset sum problem**

#include<iostream>

using namespace std;

bool subsetsum(int a[],int n, int sum)

{

bool dp[n+1][sum+1];

int i,j;

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

dp[i][0]=true;

for(j=1;j<=sum;j++)

{dp[0][j]=false;}

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

{

for(j=1;j<=sum;j++)

{

if(dp[i-1][j]==true)

dp[i][j]=true;

else

{

if(a[i-1]>j)

dp[i][j]=false;

else

dp[i][j]=dp[i-1][j-a[i-1]];

}

}

}

return dp[n][sum];

}

int main()

{

int i;

int n;

int sum;

cout<<"Sum Required?"<<endl;

cin>>sum;

cout<<"Number of elements in the set?"<<endl;

cin>>n;

int a[n];

cout<<"Enter the elements"<<endl;

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

cin>>a[i];

bool result=subsetsum(a,n,sum);

if(result==true)

cout<<"subset with the given sum found";

else

cout<<"no required subset found";

cout<<endl;

return 0;

}