

PRATHIK'S GRAPH

Problem : A weighted graph is said to belong to **PRATHIK'S FAMILY OF GRAPHS** if weight of any of its subgraph equals **Prathik's Number** (Any number in the range $1-10^3$ can be Prathik's number).

Given the weight of each of the edges and prathik's number, print "yes" (quotes for clarity) if the graph belong to the family otherwise print "no".

Difficulty : Medium

Explanation : Given the weights of the edges , we just need to find the subset of the given set whose sum equals the PRATHIK'S NUMBER.
(Subset Sum Problem).

Quick Explanation Of the algorithm:

<https://www.youtube.com/watch?v=s6FhG--P7z0>

Code (in C++) :

```
#include<bits/stdc++.h>
using namespace std;
```

```
int main()
{
    int t;
    cin>>t;
    while(t--)
    {
        int e,n,i,j;
        cin>>e>>n;
        int a[n];

        for(i=0;i<n;i++)
            cin>>a[i];

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

        for(i=0;i<=e;i++)
            dp[0][i]=false;
```

```

for(i=0;i<=n;i++)
    dp[i][0]=true;

for(i=1;i<=n;i++)
    for(j=1;j<=e;j++)
    {
        dp[i][j]=dp[i-1][j];
        if(dp[i][j]==false && j>= a[i-1])
            dp[i][j]= (dp[i][j] || dp[i-1][j-a[i-1]]);
    }

if(dp[n][e] == true)
    cout<<"yes"<<endl;
else
    cout<<"no"<<endl;
}
}

```