

Problem 8

Gangs

A Police captain knows well all the outlaw persons of his city, as well as every possible collaboration among them. He would like to find the maximum gang of the city.

In this case, a gang is a subset of outlaw persons so that any person in it collaborates with all others in the subset. "Maximum gang" means that there exists no other gang with greater cardinality.

Input

Input will consist of a file with the following structure:

```
a(1,1)
a(2,1) a(2,2)
a(3,1) a(3,2) a(3,3)
...
a(n,1) a(n,2) a(n,3) ...a(n,n)
```

where $a(i,j)=1$, if person i is collaborating with person j or $i=j$, and $a(i,j)=0$, otherwise.

Output

Create a program capable of accepting the police captain's data (with a total number of outlaw persons less than 41) and outputting the maximum gang.

Sample input

```
file.txt
```

Sample input file (file.txt)

```
1
01
101
1011
01101
101111
```

Sample output

```
A Maximum Gang is:
1 3 4 6
cardinality = 4
```