

## Talent Battle 100 Days Coding Series

You are given  $N$  binary strings of length  $N$  each. You need to find a binary string of length  $N$  which is different from all of the given strings.

Note:

- A binary string is defined as a string consisting only of '0' and '1'.
- A string is considered different from another string when they have different lengths, or when they differ in at least one position.


### Input Format

- The first line will contain  $T$  - the number of test cases. Then the test cases follow.
- The first line of each test case contains  $N$  - the number of strings and length of strings.
- Each of the next  $N$  lines contains a binary string of length  $N$ .

### Output Format

For each test case, print on one line a binary string of length  $N$ , which is different from all of the given strings. If there are multiple possible answers, print any.

### Sample Input



```
2
3
101
110
100
4
1100
1010
0100
0010
```

### Sample Output

```
111
1101
```

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**C**

```
#include <stdio.h>

int main()
{
    int t,i;
    char bs[1000], ans[1000];
    int n;
    scanf("%d", &t);
    while (t--)
    {
        scanf("%d", &n);
        for(i = 0; i < n; i++)
        {
            scanf("%s", bs);
            if (bs[i] == '1')
            {
                ans[i] = '0';
            }
            else
            {
                ans[i] = '1';
            }
        }
        ans[i] = '\0';
        printf("%s\n", ans);
    }
}
```

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### C++

```
#include <iostream>

#include <vector>

using namespace std;

int main() {
    int t; cin >> t;
    while(t--){
        int n; cin >> n;
        string res = "";
        for(int i = 0; i < n; i++) res += "0";
        vector<string> binary(n);
        for(int i = 0; i < n; i++) cin >> binary[i];
        for(int i = 0; i < n; i++){
            if(binary[i][i] == '0') res[i] = '1';
        }
        cout << res << endl;
    }
    return 0;
}
```

### Java

```
import java.util.*;
import java.lang.*;
import java.io.*;
```

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```
class Main
{
    public static void main (String[] args) throws java.lang.Exception
    {

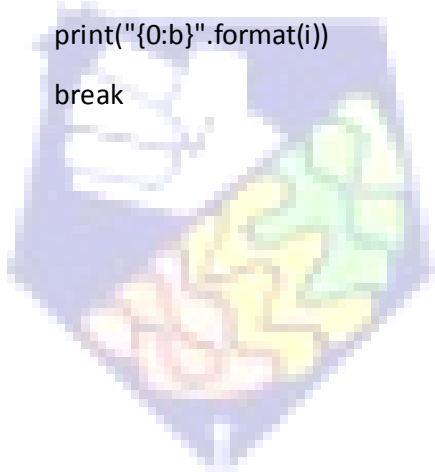
        Scanner sc=new Scanner(System.in);
        int t=sc.nextInt();
        while(t-->0)
        {
            int n=sc.nextInt();
            sc.nextLine();
            String ans="";
            for(int j=0;j<n;j++)
            {
                String s = sc.nextLine();
                if(s.charAt(j)=='0')
                    ans+="1";
                else
                    ans+="0";
            }
            System.out.println(ans);

        }

    }
}
```

## Python

```
test=int(input())
for _ in range(test):
    n=int(input())
    ls=[]
    for _ in range(n):
        ls.append(int(input(),2))
    mx=len(str("{0:b}".format(max(ls))))
    for i in range((2**mx)-1,min(ls),-1):
        if i not in ls:
            print("{0:b}".format(i))
            break
```



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