



A Courier's Day

Module 4 - Data Structures IUP 2023
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Description

The government has announced a temporary one-way road policy to prevent traffic congestion during the peak holiday season, which is today. Tomorrow, the roads will be put into normal again. Also, today is your shift as a courier. There are several packages that needs to be delivered today, but given the new policy, some packages may have to wait to be delivered tomorrow because there's no way to reach the delivery address. Given the map of the current road condition, a starting point of the delivery, and several delivery address point for each package, determine the list of packages that couldn't be delivered today

Input Format

The first line contains v , e , s , and d . v is the number of delivery points in the map, e is the number of roads available today, s is the starting point of the delivery, and d is the number of packages that needs to be delivered.

The next e lines will contains a and b , the road that connects the between a and b . Finally, the next d lines will contain the delivery address p_i of each packages

Output Format

If all the packages can be delivered today, print the text `All packages are delivered today!`

Else, print `Packages to be delivered tomorrow: a b c...`, where `a b c` is the list of packages that couldn't be delivered today (see *Example* for more details)

Constraints

$$1 \leq n, a, b, e, s, d, p_i \leq 1000$$

p_i is guaranteed to be unique

Example

Example Input 0

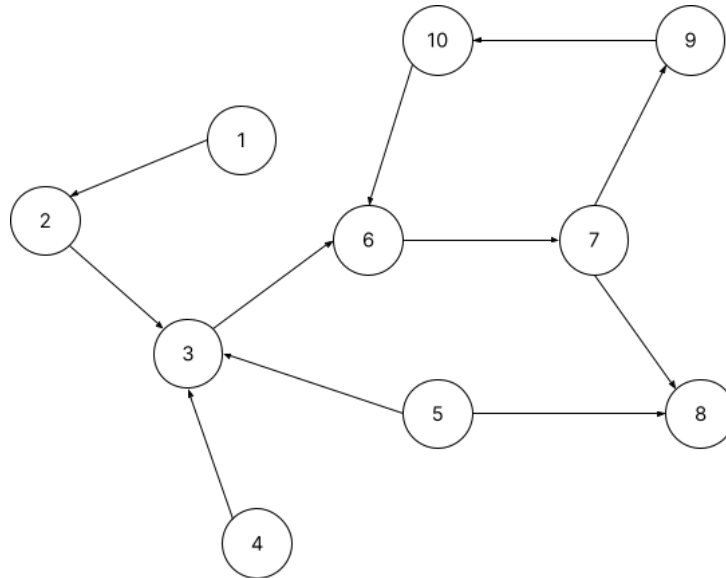
```
10 11 1 3
1 2
2 3
3 6
4 3
5 3
5 8
6 7
7 8
7 9
9 10
10 6
4
8
10
```

Example Output 0

```
Packages to be delivered tomorrow: 4
```

Explanation

The following is the delivery map representation of *Example Input 0* under the one-way policy



There are 10 delivery points, and we need to deliver to address 4, 8, and 10. From the map, we can see that address 8 and 10 can be visited from 1, but there's no way to reach address 4, so it needs to wait for tomorrow. Therefore, print Packages to be delivered tomorrow: 4