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## Topological orderings

P62138\_en

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There are  $n$  tasks, which have to be done one by one. Some tasks must be done before others: there are  $m$  precedence relations between tasks. Write a program that prints all possible ways to order the  $n$  tasks according to the  $m$  given precedences.

### Input

Input consists of a natural number  $n \geq 1$ , followed by a natural number  $m$ , followed by  $m$  different pairs  $x, y$ , indicating that task  $x$  must be done before task  $y$ . Suppose that the tasks are numbered from 0 to  $n - 1$ .

### Output

Print, one per line and in lexicographic order, all the ways of sorting the  $n$  tasks according to the  $m$  given precedences. There will always be at least one solution.

#### Sample input 1

```
3 1
1 0
```

#### Sample output 1

```
1 0 2
1 2 0
2 1 0
```

#### Sample input 2

```
1 0
```

#### Sample output 2

```
0
```

#### Sample input 3

```
10 18
0 3 4 8
8 3 2 1
5 7 5 6
6 8 4 2
4 0 8 1
2 8 3 1
6 2 7 3
7 2 5 0
0 6 9 5
```

#### Sample output 3

```
4 9 5 0 6 7 2 8 3 1
4 9 5 0 7 6 2 8 3 1
4 9 5 7 0 6 2 8 3 1
9 4 5 0 6 7 2 8 3 1
9 4 5 0 7 6 2 8 3 1
9 4 5 7 0 6 2 8 3 1
9 5 4 0 6 7 2 8 3 1
9 5 4 0 7 6 2 8 3 1
9 5 4 7 0 6 2 8 3 1
9 5 7 4 0 6 2 8 3 1
```

### Problem information

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Generation : 2022-11-14 12:38:51

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