January 2023 CSE 208
Practice on Graph Traversal

Time: 45 minutes

Subsection : B2

There are n courses you have to complete for graduation from CSE, BUET. A course can have zero or more prerequisites. If x is a prerequisite for y, then you must complete x before y.

Return the order of courses you should take to finish all courses. If there are many valid answers, return any of them. If it is impossible to finish all courses, return -1.

Input

You have to take input from a file named input.txt

The first line of the input contains two integers n, m ($1 \leq n \leq 1e5, 0 \leq m$) — the number of courses, the number of prerequisite relations.

Next m line of the input contains two integers x, y ($0 \leq x \leq n-1, 0 \leq y \leq n-1$) and ($x \neq y$) — x is the prerequisite of y.

Output

Print the order of the courses you should follow. If it is impossible, print -1.

Sample I/O

Case # 1

Input File

```
3 2
0 1
1 2
```

Output

```
0 1 2
```

Case # 2

Input File

```
3 2
0 1
1 0
```

Output

```
-1
```

Case # 3

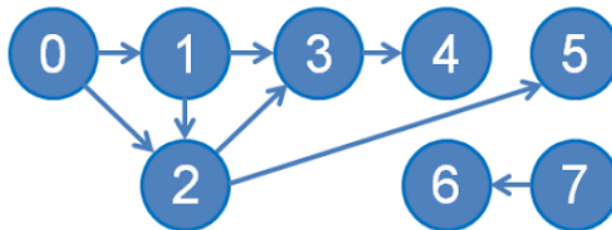**Input File**

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

Output

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

Explanation of case # 3

Submission

1. Create a directory with your 7-digit student id as its name.

2. Put all the source files only into the directory created in step 1.

3. Zip the directory (compress in .zip format. Any other format like .rar, .7z etc. are not acceptable).

4. Upload the .zip file in moodle.

Special Instructions

Please note that any usage of the internet is strictly prohibited during the assignment. Usage of any unfair means will be duly punished.