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# ✅ Space Travel

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✎ **Author:**
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❯ **Problem type**

∨ **Allowed languages**
  C, C++

## Space Travel

Bob lives in a solar system with $n$ planets and $m$ bridges between two planets, one can only use these bridges to travel to other planets. The planets are numbered from $1, 2, ..., n$. Bob currently resides on the planet numbered $1$ and wishes to travel to all other planets. He has a notebook, which he uses to keep track of the planets he has visited so far. He initially writes the number $1$ on the notebook (since he starts off his journey from planet $1$), and whenever he visits a planet, which is not recorded on his notebook, he records the number of the planet. He stops after visiting all the planets, and thus his notenook contains a permutation of all the planets.

Bob wants to travel the solar system in such a way that the sequence of nodes being recorded is the **smallest possible sequence**. We say that a sequence $s_1$ is smaller than $s_2$ if:

- The first position where the two sequences differ, $s_1$ has a smaller element than $s_2$ at that position.

For example:

- The sequence $\{1, 8, 7, 6, 2, 3, 10, 4, 9, 5\}$ is **smaller** than $\{1, 8, 7, 10, 5, 2, 3, 6, 4, 9\}$.
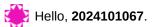
**Note:** We are NOT comparing sequences lexicographically, instead comparing the values at each position.

Help Bob find this **smallest possible sequence** which can be recorded.

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- The next `m` lines contain two values `u` and `v`, describing a bidirectional bridge between the planets `(u, v)`.
- It is guaranteed that the solar system is **connected**, meaning there exists a path from every planet to every other planet.

## Output Format

- Output a single line containing the **smallest sequence** `p₁, p₂, ..., pₙ`, which Bob can record.

## Constraints

- `1 ≤ n, m ≤ 10^5`
- For every bridge `(u, v)`: `1 ≤ u, v ≤ n`
- The solar system is always connected.

## Sample Test Cases

### Input

```
5 5
1 4
3 4
5 4
3 2
1 5
```

### Output

```
1 4 3 2 5
```

### Input

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

### Output

```
1 2 3
```

**Explanation for test case 1:**

Bob can visit in the order 1, 4, 3, 2, 3, 4, 1, 5. So he obtains the order {1, 4, 3, 2, 5}. Note we only record the planet which we have not encountered before.

**Explanation for test case 2:**

Bob can visit in the order 1, 2, 1, 3.

## ❓ Clarifications

Request clarification

No clarifications have been made at this time.