278. First Bad Version

- You are a product manager and currently leading a team to develop a new product. Unfortunately, the latest version of your product fails the quality check. Since each version is developed based on the previous version, all the versions after a bad version are also bad.
- Suppose you have n versions [1, 2, ..., n] and you want to find out the first bad one, which causes all the following ones to be bad.
- You are given an API bool isBadVersion(version) which returns whether version is bad. Implement a function to find the first bad version. You should minimize the number of calls to the API.

Example 1:

- **Input:** n = 5, bad = 4
- **Output:** 4
- **Explanation:**
  - ➤ call isBadVersion(3) -> false
  - ➤ call isBadVersion(5) -> true
  - ➤ call isBadVersion(4) -> true
  - ➤ Then 4 is the first bad version.

Example 2:

- **Input:** n = 1, bad = 1
- **Output:** 1

Constraints:

- $1 <= bad <= n <= 2^{31} - 1$