

```
/* The isBadVersion API is defined in the parent class VersionControl.  
   boolean isBadVersion(int version); */
```

```
public class Solution extends VersionControl {  
    public int firstBadVersion(int n) {  
        int high = n;  
        int low = 0;  
        while (low <= high) {  
            int mid = low + (high - low) / 2;  
            if (isBadVersion(mid)) {  
                high = mid-1;  
            } else {  
                low = mid+1;  
            }  
        }  
        return low;  
    }  
}
```

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 $[1, 2, \dots, n]$ 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 will return whether `version` is bad. Implement a function to find the first bad version. You should minimize the number of calls to the API.