Problem 582: Kill Process

Problem Information

Difficulty: Medium
Acceptance Rate: 70.22%
Paid Only: Yes
Tags: Array, Hash Table, Tree, Depth-First Search, Breadth-First Search

Problem Description

You have `n` processes forming a rooted tree structure. You are given two integer arrays `pid` and `ppid`, where `pid[i]` is the ID of the `ith` process and `ppid[i]` is the ID of the `ith` process's parent process.

Each process has only **one parent process** but may have multiple children processes. Only one process has `ppid[i] = 0`, which means this process has **no parent process** (the root of the tree).

When a process is **killed** , all of its children processes will also be killed.

Given an integer `kill` representing the ID of a process you want to kill, return _a list of the IDs of the processes that will be killed. You may return the answer in**any order**._

Example 1:

Input: pid = [1,3,10,5], ppid = [3,0,5,3], kill = 5 **Output:** [5,10] **Explanation:** The processes colored in red are the processes that should be killed.

Example 2:

Input: pid = [1], ppid = [0], kill = 1 **Output:** [1]

Constraints:

* `n == pid.length` * `n == ppid.length` * `1 <= n <= 5 * 104` * `1 <= pid[i] <= 5 * 104` * `0 <= ppid[i] <= 5 * 104` * Only one process has no parent. * All the values of `pid` are **unique**. * `kill` is **guaranteed** to be in `pid`.

Code Snippets

C++:

```
class Solution {
public:
vector<int> killProcess(vector<int>& pid, vector<int>& ppid, int kill) {

}
};
```

Java:

```
class Solution {
public List<Integer> killProcess(List<Integer> pid, List<Integer> ppid, int
kill) {

}
}
```

Python3:

```
class Solution:
def killProcess(self, pid: List[int], ppid: List[int], kill: int) ->
List[int]:
```