# Problem 1462: Course Schedule IV

## Problem Information

**Difficulty:** Medium
**Acceptance Rate:** 59.65%
**Paid Only:** No
**Tags:** Depth-First Search, Breadth-First Search, Graph, Topological Sort

## Problem Description

There are a total of `numCourses` courses you have to take, labeled from `0` to `numCourses - 1`. You are given an array `prerequisites` where `prerequisites[i] = [ai, bi]` indicates that you **must** take course `ai` first if you want to take course `bi`.

* For example, the pair `[0, 1]` indicates that you have to take course `0` before you can take course `1`.

Prerequisites can also be **indirect**. If course `a` is a prerequisite of course `b`, and course `b` is a prerequisite of course `c`, then course `a` is a prerequisite of course `c`.

You are also given an array `queries` where `queries[j] = [uj, vj]`. For the `jth` query, you should answer whether course `uj` is a prerequisite of course `vj` or not.

Return _a boolean array_`answer` _, where_`answer[j]`_is the answer to the_`jth` _query._

**Example 1:**

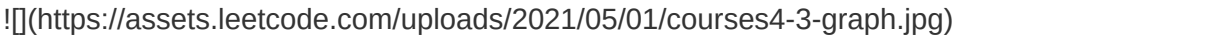



**Input:** numCourses = 2, prerequisites = [[1,0]], queries = [[0,1],[1,0]] **Output:** [false,true] **Explanation:** The pair [1, 0] indicates that you have to take course 1 before you can take course 0. Course 0 is not a prerequisite of course 1, but the opposite is true.

**Example 2:**

**Input:** numCourses = 2, prerequisites = [], queries = [[1,0],[0,1]] **Output:** [false,false] **Explanation:** There are no prerequisites, and each course is independent.

**Example 3:**



**Input:** numCourses = 3, prerequisites = [[1,2],[1,0],[2,0]], queries = [[1,0],[1,2]] **Output:** [true,true]

**Constraints:**

* `2 <= numCourses <= 100` * `0 <= prerequisites.length <= (numCourses * (numCourses - 1) / 2)` * `prerequisites[i].length == 2` * `0 <= ai, bi <= numCourses - 1` * `ai != bi` * All the pairs `[ai, bi]` are **unique**. * The prerequisites graph has no cycles. * `1 <= queries.length <= 104` * `0 <= ui, vi <= numCourses - 1` * `ui != vi`

## Code Snippets

**C++:**

```
class Solution {
public:
vector<bool> checkIfPrerequisite(int numCourses, vector<vector<int>>&
prerequisites, vector<vector<int>>& queries) {

}
};
```

**Java:**

```
class Solution {
public List<Boolean> checkIfPrerequisite(int numCourses, int[][]
prerequisites, int[][] queries) {

}
}
```

**Python3:**

```
class Solution:
def checkIfPrerequisite(self, numCourses: int, prerequisites:
List[List[int]], queries: List[List[int]]) -> List[bool]:
```