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**Algorithm 1** Check if all courses can be finished

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1: procedure CANFINISH(numCourses, prerequisites)
2:   degrees  $\leftarrow$  array of size numCourses initialized to 0
3:   dependencyMap  $\leftarrow$  empty adjacency list
4:   coursesTaken  $\leftarrow$  0
5:   for each (course, prereq) in prerequisites do
6:     Append course to dependencyMap[prereq]
7:     Increment degrees[course]
8:   end for
9:   queue  $\leftarrow$  all courses with degree = 0
10:  while queue is not empty do
11:    currentCourse  $\leftarrow$  dequeue queue
12:    Increment coursesTaken
13:    for each course in dependencyMap[currentCourse] do
14:      Decrement degrees[course]
15:      if degrees[course] = 0 then
16:        Enqueue course to queue
17:      end if
18:    end for
19:  end while
20:  return coursesTaken = numCourses
21: end procedure
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