1857. Largest Color Value in a Directed Graph

Hint

Hard 1.8K 60

Companies

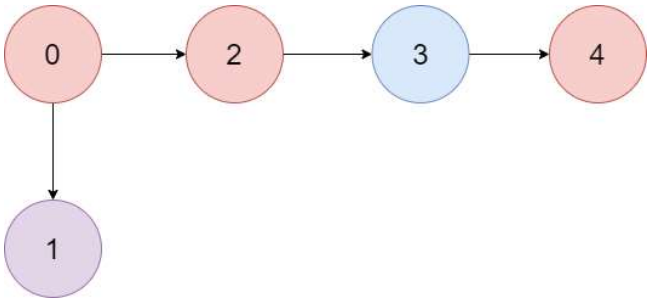
There is a **directed graph** of n colored nodes and m edges. The nodes are numbered from 0 to $n - 1$.

You are given a string $colors$ where $colors[i]$ is a lowercase English letter representing the **color** of the i^{th} node in this graph (**0-indexed**). You are also given a 2D array $edges$ where $edges[j] = [a_j, b_j]$ indicates that there is a **directed edge** from node a_j to node b_j.

A valid **path** in the graph is a sequence of nodes $x_1 \to x_2 \to x_3 \to \ldots \to x_k$ such that there is a directed edge from x_i to x_{i+1} for every $1 <= i < k$. The **color value** of the path is the number of nodes that are colored the **most frequently** occurring color along that path.

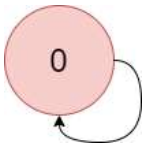
Return *the **largest color value** of any valid path in the given graph, or* -1 *if the graph contains a cycle.*

Example 1:



Input: colors = "abaca", edges = [[0,1],[0,2],[2,3],[3,4]]
Output: 3
Explanation: The path 0 -> 2 -> 3 -> 4 contains 3 nodes that are colored "a" (red in the above image).

Example 2:



Input: colors = "a", edges = [[0,0]]
Output: -1
Explanation: There is a cycle from 0 to 0.

Constraints:

- $n == colors.length$
- $m == edges.length$
- $1 <= n <= 10^5$
- $0 <= m <= 10^5$
- $colors$ consists of lowercase English letters.
- $0 <= a_j, b_j < n$

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Seen this question in a real interview before? 1/4

Yes No

Discussion (28)

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