时间限制：C/C++/Rust/Pascal 3秒，其他语言6秒
空间限制：C/C++/Rust/Pascal 512 M，其他语言1024 M
64bit IO Format: %lld

题目描述

You are given a rooted tree with n nodes. The root is node 1. For each node i ($2 \le i \le n$), its parent is denoted by f_i, meaning there is an edge between node i and node f_i. A piece is initially located at node 1.

In this problem, we assume that time progresses in discrete moments starting from 1. There are k **non-overlapping time intervals**. During each interval $[l_i, r_i]$, a target appears at node u_i. You are allowed to cut any number of edges in the tree at any moment in time (including multiple times and even at moment 0). Once an edge is cut, it is **permanently removed**.
At any moment:

- If a target is active (i.e., the current moment is within some $[l_i, r_i]$), and
- The piece and the target are in the same connected component, and
- The piece is not currently at the target node,

Then, the piece will move exactly one step along the unique simple path towards the target. If the piece arrives at the target node (or is already at the target node at the beginning of the moment), then a *coincidence* occurs.

Your goal is to determine the earliest possible moment when the piece can *coincide* with any target, possibly by cutting edges strategically. If it is impossible to ever achieve *coincidence* with any target, output -1.

输入描述:

The first line of input contains two integers n and k ($1 \le n \le 10^6$, $1 \le k \le 10^6$) — the size of the tree and the number of intervals.

The second line contains $(n-1)$ integers $f_2, \ldots, f_n$ ($1 \le f_i < i$) — the parents of nodes $2, \ldots, n$, respectively.

Then k lines follow. The i-th of which contains three integers u_i, l_i and r_i ($1 \le u_i \le n$, $1 \le l_i \le r_i \le 10^9$), indicating that a target appears at node u_i during moments l_i through r_i (inclusive).

It is guaranteed that all time intervals are given in order and do not overlap; that is, for each $1 \le i < k$, $r_i < l_{i+1}$ holds.

输出描述:

Output a single integer: the minimum moment when the piece can *coincide* with a target. If it is impossible,