

LeetCode

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LeetCode Challenge + GIVEAWAY!

Description

Solution

Discuss (999+)

Submissions

Java

Autocomplete

134. Gas Station

Medium

5063

553

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There are n gas stations along a circular route, where the amount of gas at the i^{th} station is $\text{gas}[i]$.

You have a car with an unlimited gas tank and it costs $\text{cost}[i]$ of gas to travel from the i^{th} station to its next $(i + 1)^{\text{th}}$ station. You begin the journey with an empty tank at one of the gas stations.

Given two integer arrays gas and cost , return the starting gas station's index if you can travel around the circuit once in the clockwise direction, otherwise return -1 . If there exists a solution, it is **guaranteed** to be **unique**.

Example 1:

Input: $\text{gas} = [1,2,3,4,5]$, $\text{cost} = [3,4,5,1,2]$

Output: 3

Explanation:

Start at station 3 (index 3) and fill up with 4 unit of gas. Your tank = $0 + 4 = 4$

Travel to station 4. Your tank = $4 - 1 + 5 = 8$

Travel to station 0. Your tank = $8 - 2 + 1 = 7$

Travel to station 1. Your tank = $7 - 3 + 2 = 6$

Travel to station 2. Your tank = $6 - 4 + 3 = 5$

Travel to station 3. The cost is 5. Your gas is just enough to travel back to station 3.

Therefore, return 3 as the starting index.

Example 2:

Input: $\text{gas} = [2,3,4]$, $\text{cost} = [3,4,3]$

Output: -1

Explanation:

You can't start at station 0 or 1, as there is not enough gas to travel to the next station.

Let's start at station 2 and fill up with 4 unit of gas. Your tank = $0 + 4 = 4$

Travel to station 0. Your tank = $4 - 3 + 2 = 3$

Travel to station 1. Your tank = $3 - 3 + 3 = 3$

You cannot travel back to station 2, as it requires 4 unit of gas but you only have 3.

Therefore, you can't travel around the circuit once no matter where you start.

Constraints:

- $\text{gas.length} == n$
- $\text{cost.length} == n$
- $1 \leq n \leq 10^5$
- $0 \leq \text{gas}[i], \text{cost}[i] \leq 10^4$

Accepted 368,637

Submissions 835,849

Seen this question in a real interview before?

Yes

No

Companies

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class Solution {

public int canCompleteCircuit(int[] gas, int[] cost) {

}

}

Problems

Pick One

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Console

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https://leetcode.com/problems/gas-station/

1/1