134. Gas Station

Medium Topics Companies

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

You have a car with an unlimited gas tank and it costs `cost[i]` of gas to travel from the i^{th} station to its next $(i + 1)^{th}$ station. You beg

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 direct*

Example 1:

```
Input: gas = [1,2,3,4,5], 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: gas = [2,3,4], 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:

- `n == gas.length == cost.length`
- `1 <= n <= 10^5`
- `0 <= gas[i], cost[i] <= 10^4`

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

Yes No

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