# 3635. Earliest Finish Time for Land and Water Rides II

Solved

Medium Hint

You are given two categories of theme park attractions: **land rides** and **water rides**.

- **Land rides**
  - `landStartTime[i]` – the earliest time the $i^{th}$ land ride can be boarded.
  - `landDuration[i]` – how long the $i^{th}$ land ride lasts.
- **Water rides**
  - `waterStartTime[j]` – the earliest time the $j^{th}$ water ride can be boarded.
  - `waterDuration[j]` – how long the $j^{th}$ water ride lasts.

A tourist must experience **exactly one** ride from **each** category, in **either order**.

- A ride may be started at its opening time or **any later moment**.
- If a ride is started at time `t`, it finishes at time `t + duration`.
- Immediately after finishing one ride the tourist may board the other (if it is already open) or wait until it opens.

Return the **earliest possible time** at which the tourist can finish both rides.

**Example 1:**

> **Input:** landStartTime = [2,8], landDuration = [4,1], waterStartTime = [6], waterDuration = [3]
>
> **Output:** 9
>
> **Explanation:**
>
> - Plan A (land ride 0 → water ride 0):
>   - Start land ride 0 at time `landStartTime[0] = 2`. Finish at `2 + landDuration[0] = 6`.
>   - Water ride 0 opens at time `waterStartTime[0] = 6`. Start immediately at `6`, finish at `6 + waterDuration[0] = 9`.
> - Plan B (water ride 0 → land ride 1):
>   - Start water ride 0 at time `waterStartTime[0] = 6`. Finish at `6 + waterDuration[0] = 9`.
>   - Land ride 1 opens at `landStartTime[1] = 8`. Start at time `9`, finish at `9 + landDuration[1] = 10`.
> - Plan C (land ride 1 → water ride 0):
>   - Start land ride 1 at time `landStartTime[1] = 8`. Finish at `8 + landDuration[1] = 9`.
>   - Water ride 0 opened at `waterStartTime[0] = 6`. Start at time `9`, finish at `9 + waterDuration[0] = 12`.
> - Plan D (water ride 0 → land ride 0):
>   - Start water ride 0 at time `waterStartTime[0] = 6`. Finish at `6 + waterDuration[0] = 9`.
>   - Land ride 0 opened at `landStartTime[0] = 2`. Start at time `9`, finish at `9 + landDuration[0] = 13`.
>
> Plan A gives the earliest finish time of 9.

**Example 2:**

> **Input:** landStartTime = [5], landDuration = [3], waterStartTime = [1], waterDuration = [10]
>
> **Output:** 14

**Explanation:**

- Plan A (water ride 0 → land ride 0):
  - Start water ride 0 at time `waterStartTime[0] = 1`. Finish at `1 + waterDuration[0] = 11`.
  - Land ride 0 opened at `landStartTime[0] = 5`. Start immediately at `11` and finish at `11 + landDuration[0] = 14`.
- Plan B (land ride 0 → water ride 0):
  - Start land ride 0 at time `landStartTime[0] = 5`. Finish at `5 + landDuration[0] = 8`.
  - Water ride 0 opened at `waterStartTime[0] = 1`. Start immediately at `8` and finish at `8 + waterDuration[0] = 18`.

Plan A provides the earliest finish time of 14.

**Constraints:**

- `1 <= n, m <= 5 * 10^4`
- `landStartTime.length == landDuration.length == n`
- `waterStartTime.length == waterDuration.length == m`
- `1 <= landStartTime[i], landDuration[i], waterStartTime[j], waterDuration[j] <= 10^5`

Seen this question in a real interview before? 1/5

Yes No

**Accepted** 10.124/32.3K | **Acceptance Rate** 31.4%

Topics

Hint 1

Hint 2

Hint 3

Hint 4

Discussion (20)