218. The Skyline Problem

A city's **skyline** is the outer contour of the silhouette formed by all the buildings in that city when viewed from a distance. Given the locations and heights of all the buildings, return *the **skyline** formed by these buildings collectively*.

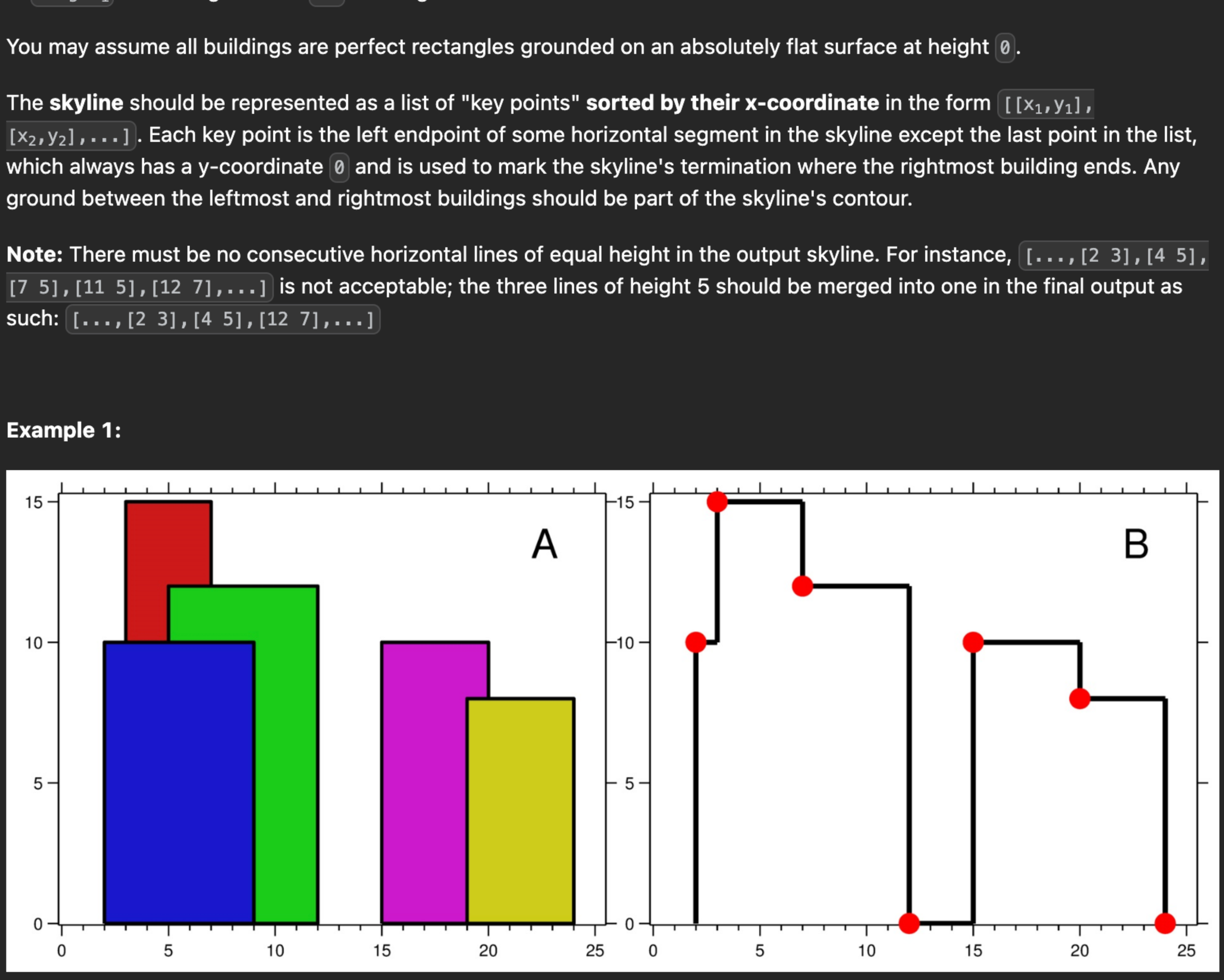
- $left_i$ is the x coordinate of the left edge of the i^{th} building.
- $right_i$ is the x coordinate of the right edge of the i^{th} building.
- $height_i$ is the height of the i^{th} building.

You may assume all buildings are perfect rectangles grounded on an absolutely flat surface at height `0`.

The **skyline** should be represented as a list of "key points" **sorted by their x-coordinate** in the form `[[x1,y1],[x2,y2],...]`. Each key point is the left endpoint of some horizontal segment in the skyline except the last point in the list, which always has a y-coordinate `0` and is used to mark the skyline's termination where the rightmost building ends. Any ground between the leftmost and rightmost buildings should be part of the skyline's contour.

Note: There must be no consecutive horizontal lines of equal height in the output skyline. For instance, `[...,[2 3],[4 5],[7 5],[11 5],[12 7],...]` is not acceptable; the three lines of height 5 should be merged into one in the final output as such: `[...,[2 3],[4 5],[12 7],...]`

Example 1:




```
Input: buildings = [[2,9,10],[3,7,15],[5,12,12],[15,20,10],[19,24,8]]
Output: [[2,10],[3,15],[7,12],[12,0],[15,10],[20,8],[24,0]]
Explanation:
Figure A shows the buildings of the input.
Figure B shows the skyline formed by those buildings. The red points in figure B represent the key points in the output list.
```

Example 2:

```
Input: buildings = [[0,2,3],[2,5,3]]
Output: [[0,3],[5,0]]
```

Constraints:

- $1 <= buildings.length <= 10^4$
- $0 <= left_i < right_i <= 2^{31} - 1$
- $1 <= height_i <= 2^{31} - 1$
- `buildings` is sorted by $left_i$ in non-decreasing order.

Accepted **289.7K** | Submissions **677.6K** | Acceptance Rate **42.7%**