



Pacific Atlantic Water Flow

Try to solve the Pacific Atlantic Water Flow problem.

We'll cover the following



- Statement
- Examples
- Understand the problem
- Try it yourself

Statement

Consider an $(m \times n)$ rectangular island that borders the Pacific and Atlantic oceans. The northern and western side of the island touches the Pacific Ocean, while the southern and eastern side of the island touches the Atlantic Ocean.

Say that the island is partitioned into square cells. To represent how much of the ground is above sea level, say you have an $(m \times n)$ integer matrix, `heights`, where `heights[r][c]` represents the height above sea level of the cell at the `(r, c)` coordinate.

Every few months, there's a lot of rain on this island which, as a result, flows from the island to the Pacific and Atlantic oceans. The flow is determined by the height of the cells of the island.



Suppose a cell on the island has a height of 9, and say it's higher than (or equal to) any cell to its north, east, west, and south. Then this means that water from this cell can flow to the adjacent cells. If water can flow from



the cell to the Pacific and the Atlantic Ocean border, add this cell to the results grid.

Note: Water can flow from any cell adjacent to an ocean into the ocean.

Using the given information, your task is to return a 2-D list of grid coordinates, `result`, where `result[i] = [r[i], c[i]]` denotes that rain water can flow from the `(r[i], c[i])` cell to both the Pacific and Atlantic oceans.

Constraints:

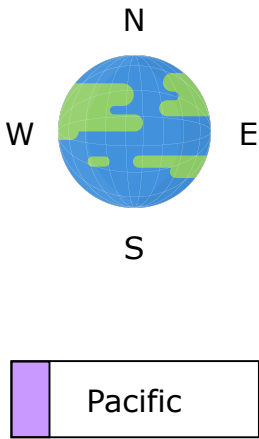
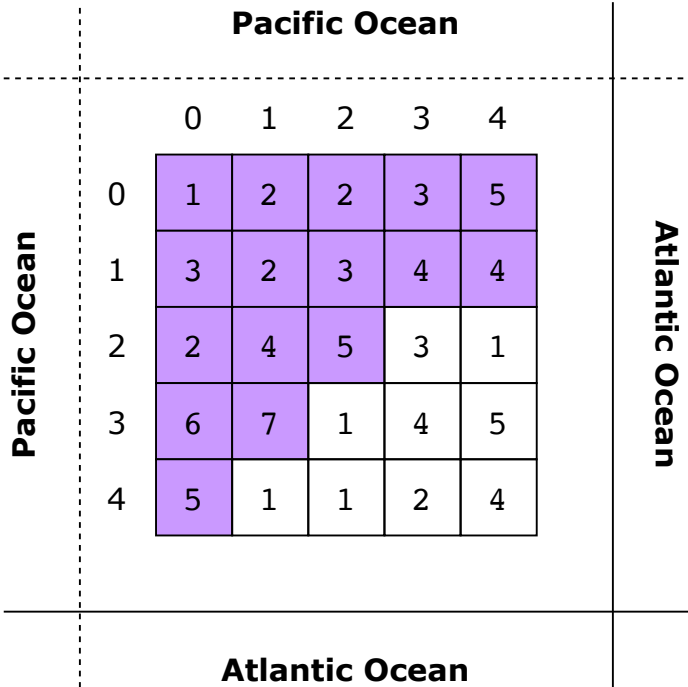
- $m == \text{heights.length}$
- $n == \text{heights}[r].\text{length}$, where $0 \leq r \leq m$
- $1 \leq m, n \leq 200$
- $0 \leq \text{heights}[r][c] \leq 10^5$

Examples



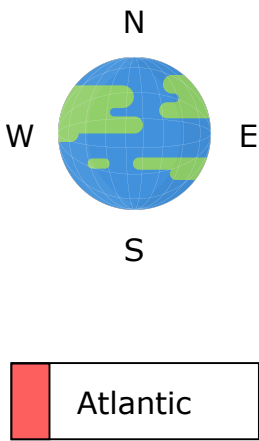
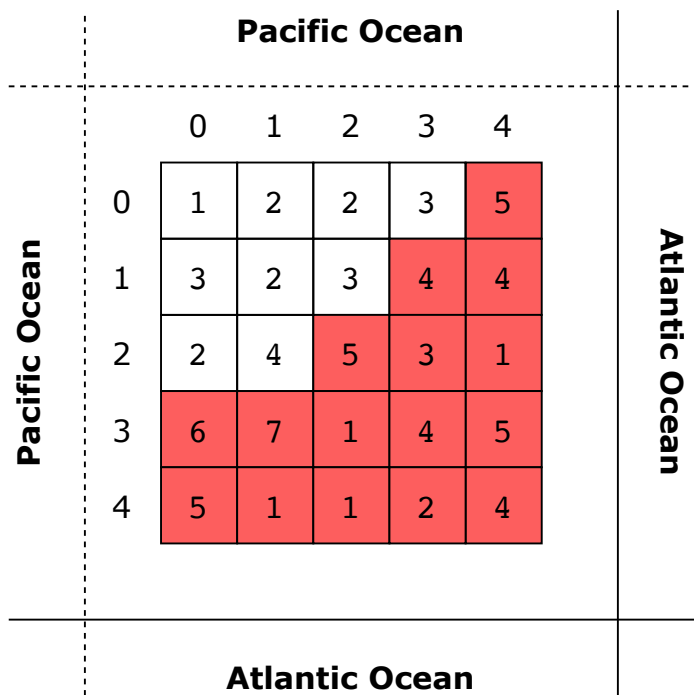
Sample example 1

The rain water flow from the island to the Pacific Ocean.



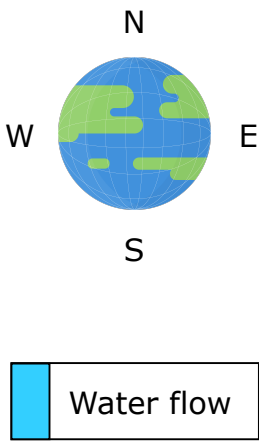
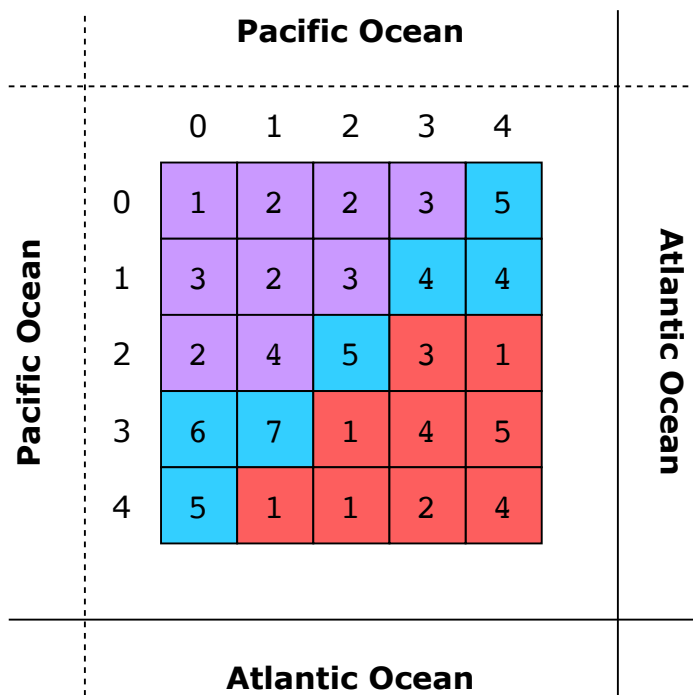
Sample example 1

The rain water flow from the island to the Atlantic Ocean.



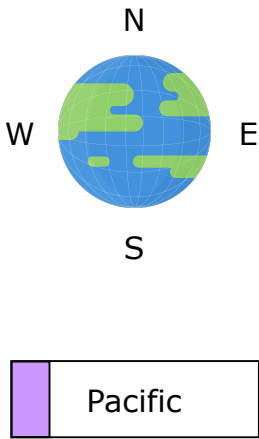
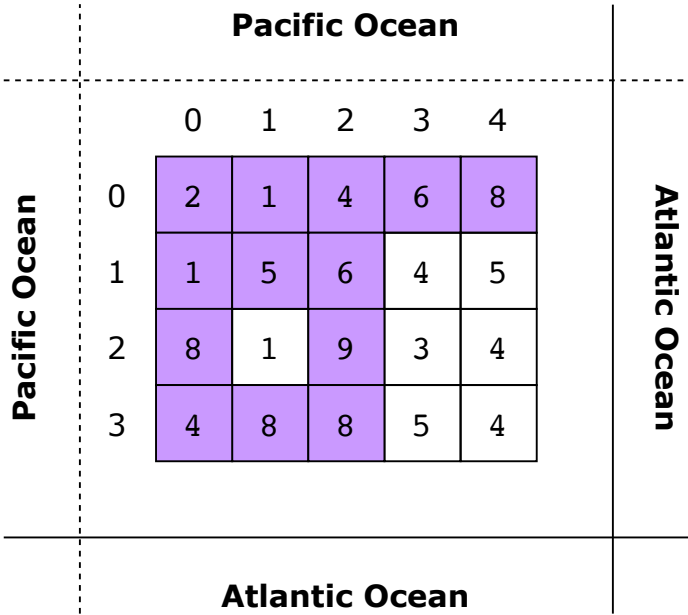
Sample example 1

The cells highlighted in blue show that water can flow from the island to the Pacific and Atlantic Oceans.



Sample example 2

The rain water flow from the island to the Pacific Ocean.



Sample example 2

The rain water flow from the island to the Atlantic Ocean.

