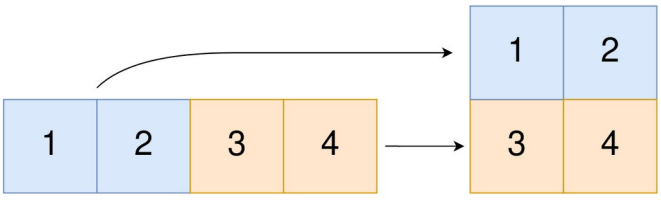
# 2022. Convert 1D Array Into 2D Array

You are given a **0-indexed** 1-dimensional (1D) integer array `original`, and two integers, `m` and `n`. You are tasked with creating a 2-dimensional (2D) array with `m` rows and `n` columns using **all** the elements from `original`.

The elements from indices `0` to `n - 1` (**inclusive**) of `original` should form the first row of the constructed 2D array, the elements from indices `n` to `2 * n - 1` (**inclusive**) should form the second row of the constructed 2D array, and so on.

Return *an* `m x n` *2D array constructed according to the above procedure, or an empty 2D array if it is impossible*.

**Example 1:**




```
Input: original = [1,2,3,4], m = 2, n = 2
Output: [[1,2],[3,4]]
Explanation: The constructed 2D array
should contain 2 rows and 2 columns.
The first group of n=2 elements in
original, [1,2], becomes the first row in
the constructed 2D array.
The second group of n=2 elements in
original, [3,4], becomes the second row
in the constructed 2D array.
```

**Example 2:**

```
Input: original = [1,2,3], m = 1, n = 3
Output: [[1,2,3]]
Explanation: The constructed 2D array should contain 1 row and 3 columns.
Put all three elements in original into the first row of the constructed 2D array.
```

**Example 3:**

```
Input: original = [1,2], m = 1, n = 1
Output: []
Explanation: There are 2 elements in original.
It is impossible to fit 2 elements in a 1x1 2D array, so return an empty 2D array.
```

**Constraints:**

- `1 <= original.length <= 5 * 10^4`
- `1 <= original[i] <= 10^5`
- `1 <= m, n <= 4 * 10^4`

## 2022. Convert 1D Array Into 2D Array

```
/*
    Time complexity: O(m*n)
    Space complexity: O(1)
*/
typedef std::vector<int> vi;
typedef std::vector<std::vector<int>> vvi;
class Solution {
    public:
        vvi construct2DArray(vi& original, int m, int n) {
            if(m*n!=original.size()) return {};
            vvi ans(m,vi(n));
            for(int i=0;i<m;++i){
                for(int j=0;j<n;++j){
                    ans[i][j]=original[i*n+j];
                }
            }
            return ans;
        }
};
```

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typedef std::vector<int> vi;
typedef std::vector<std::vector<int>> vvi;
class Solution {
public:
    vvi construct2DArray(vi& original, int m, int n) {
        if(m*n!=original.size()) return {};
        vvi ans(m);
        for(int i=0;i<m;++i){
            ans[i]=vi(original.begin()+(i*n),original.begin()+
(i*n+n));
        }
        return ans;
    }
};
```