100217. Most Frequent Prime

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User Accepted:	1392
User Tried:	1745
Total Accepted:	1430
Total Submissions:	2569
Difficulty:	Medium

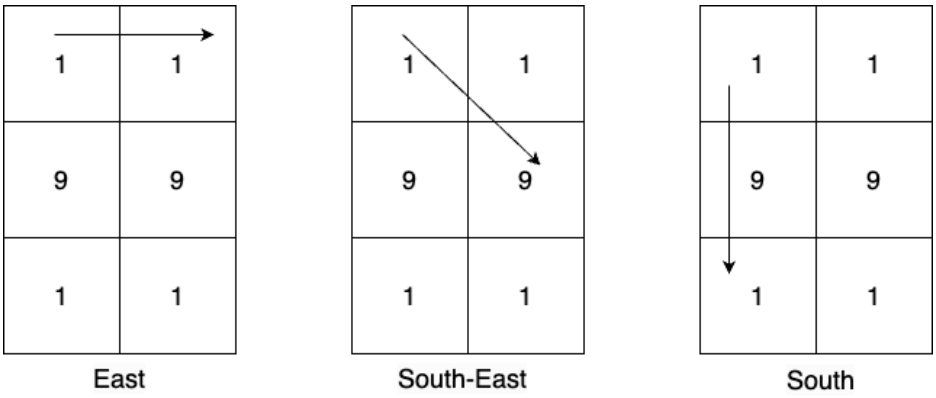
You are given a `m x n` **0-indexed** 2D matrix `mat`. From every cell, you can create numbers in the following way:

- There could be at most `8` paths from the cells namely: east, south-east, south, south-west, west, north-west, north, and north-east.
- Select a path from them and append digits in this path to the number being formed by traveling in this direction.
- Note that numbers are generated at every step, for example, if the digits along the path are `1, 9, 1`, then there will be three numbers generated along the way: `1, 19, 191`.

Return *the most frequent prime number* ***greater*** *than* `10` *out of all the numbers created by traversing the matrix or* `-1` *if no such prime number exists. If there are multiple prime numbers with the highest frequency, then return the* ***largest*** *among them.*

Note: It is invalid to change the direction during the move.

Example 1:




```
Input: mat = [[1,1],[9,9],[1,1]]
Output: 19
Explanation:
From cell (0,0) there are 3 possible directions and the numbers greater than 10 which can be created in those directions are
East: [11], South-East: [19], South: [19,191].
Numbers greater than 10 created from the cell (0,1) in all possible directions are: [19,191,19,11].
Numbers greater than 10 created from the cell (1,0) in all possible directions are: [99,91,91,91,91].
Numbers greater than 10 created from the cell (1,1) in all possible directions are: [91,91,99,91,91].
Numbers greater than 10 created from the cell (2,0) in all possible directions are: [11,19,191,19].
Numbers greater than 10 created from the cell (2,1) in all possible directions are: [11,19,19,191].
The most frequent prime number among all the created numbers is 19.
```

Example 2:

```
Input: mat = [[7]]
Output: -1
Explanation: The only number which can be formed is 7. It is a prime number however it is not greater than 10, so return -1.
```

Example 3:

```
Input: mat = [[9,7,8],[4,6,5],[2,8,6]]
Output: 97
Explanation:
Numbers greater than 10 created from the cell (0,0) in all possible directions are: [97,978,96,966,94,942].
Numbers greater than 10 created from the cell (0,1) in all possible directions are: [78,75,76,768,74,79].
Numbers greater than 10 created from the cell (0,2) in all possible directions are: [85,856,86,862,87,879].
Numbers greater than 10 created from the cell (1,0) in all possible directions are: [46,465,48,42,49,47].
Numbers greater than 10 created from the cell (1,1) in all possible directions are: [65,66,68,62,64,69,67,68].
Numbers greater than 10 created from the cell (1,2) in all possible directions are: [56,58,56,564,57,58].
Numbers greater than 10 created from the cell (2,0) in all possible directions are: [28,286,24,249,26,268].
Numbers greater than 10 created from the cell (2,1) in all possible directions are: [86,82,84,86,867,85].
Numbers greater than 10 created from the cell (2,2) in all possible directions are: [68,682,66,669,65,658].
The most frequent prime number among all the created numbers is 97.
```

Constraints:

- `m == mat.length`
- `n == mat[i].length`
- `1 <= m, n <= 6`
- `1 <= mat[i][j] <= 9`

Java

```
class Solution {
    public int mostFrequentPrime(int[][] mat) {

    }
}
```

Custom Testcase Use Example Testcases

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