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Strings Maze   Problem Code: **STRMZ**

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Amanada, a school kid, is learning English alphabets. Her teacher devised a small game to make the task fun. A grid of 'm' rows and 'n' columns is filled with English alphabets.

She needs to search English words in this grid by moving one step at a time in any of the adjacent grid cells.

A grid of alphabets and a set of English words are given. Amanda can start from anywhere in the grid and can move in any of the 8 adjacent grid cells, one step at a time. Each grid cell can only be used once.

Input

You are given a template in which you need to implement a function whose signature is given below.

```
C
int findWordInAGrid(char grid[128][128], int m, int n, char word[32])
/* return 0 for false, 1 for true. */

C++
bool findWordInAGrid(char grid[128][128], int m, int n, char word[32])

Java
static boolean findWordInAGrid(char[][] grid, int m, int n, String word)
```

grid[][] represents the characters that are in the given grid. Only the first m rows and the first n columns should be considered relevant. word is the word whose occurance has to be found in the grid. Remember, word may start from any location in the grid. word will never contain more than 30 characters. Return true if word is found in the grid, false otherwise.

Output

The function should return true, if you can find the word in the grid and false otherwise.

Example

Let's consider the grid given below:

```
a b c
d e f
g h i
```

And set of words to be searched are:

```
abc
abedhi
efgh
```

Output:

The output of the above example should be:

```
abc: true
abedhi: true
efgh: false
```

Constraints

```
1 ≤ m,n ≤ 100
```

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