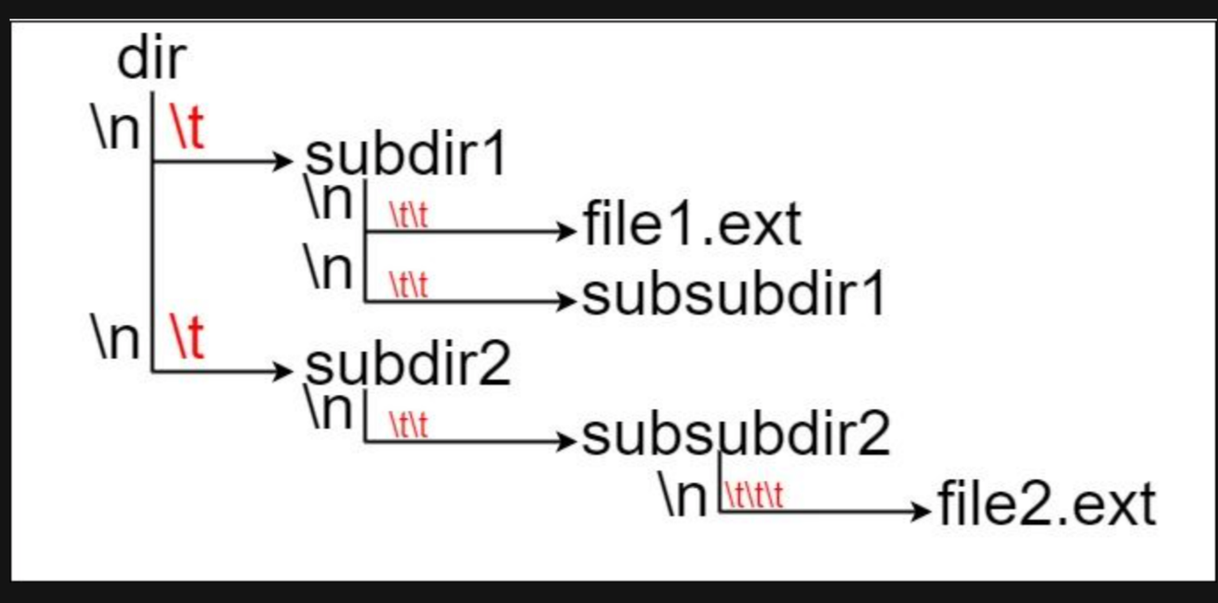
388. Longest Absolute File Path

Description

Suppose we have a file system that stores both files and directories. An example of one system is represented in the following picture:



Here, we have `dir` as the only directory in the root. `dir` contains two subdirectories, `subdir1` and `subdir2`. `subdir1` contains a file `file1.ext` and subdirectory `subsubdir1`. `subdir2` contains a subdirectory `subsubdir2`, which contains a file `file2.ext`.

In text form, it looks like this (with ⟶ representing the tab character):

```
dir
⟶ subdir1
⟶ ⟶ file1.ext
⟶ ⟶ subsubdir1
⟶ subdir2
⟶ ⟶ subsubdir2
⟶ ⟶ ⟶ file2.ext
```

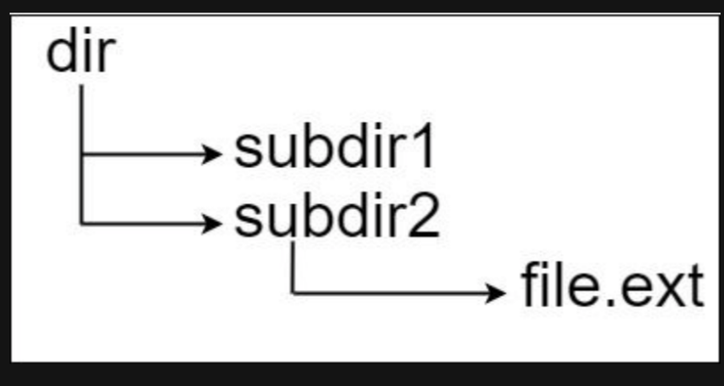
If we were to write this representation in code, it will look like this: `"dir\n\tsubdir1\n\t\tfile1.ext\n\t\tsubsubdir1\n\tsubdir2\n\t\tsubsubdir2\n\t\t\tfile2.ext"`. Note that the `'\n'` and `'\t'` are the new-line and tab characters.

Every file and directory has a unique **absolute path** in the file system, which is the order of directories that must be opened to reach the file/directory itself, all concatenated by `'/'s`. Using the above example, the **absolute path** to `file2.ext` is `"dir/subdir2/subsubdir2/file2.ext"`. Each directory name consists of letters, digits, and/or spaces. Each file name is of the form `name.extension`, where `name` and `extension` consist of letters, digits, and/or spaces.

Given a string `input` representing the file system in the explained format, return *the length of the* ***longest absolute path*** *to a* ***file*** *in the abstracted file system*. If there is no file in the system, return `0`.

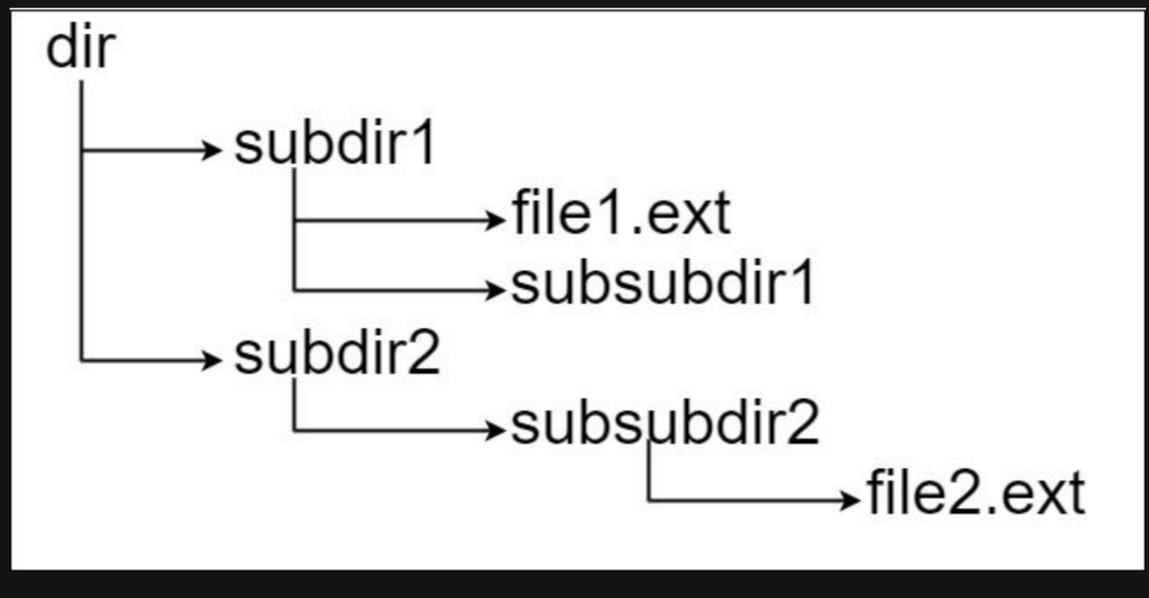
Note that the testcases are generated such that the file system is valid and no file or directory name has length 0.

Example 1:




```
Input: input = "dir\n\tsubdir1\n\tsubdir2\n\t\tfile.ext"
Output: 20
Explanation: We have only one file, and the absolute path is "dir/subdir2/file.ext" of length 20.
```

Example 2:




```
Input: input = "dir\n\tsubdir1\n\t\tfile1.ext\n\t\tsubsubdir1\n\tsubdir2\n\t\tsubsubdir2\n\t\t\tfile2.ext"
Output: 32
Explanation: We have two files:
"dir/subdir1/file1.ext" of length 21
"dir/subdir2/subsubdir2/file2.ext" of length 32.
We return 32 since it is the longest absolute path to a file.
```

Example 3:

```
Input: input = "a"
Output: 0
Explanation: We do not have any files, just a single directory named "a".
```

Constraints:

- `1 <= input.length <= 10^4`
- `input` may contain lowercase or uppercase English letters, a new line character `'\n'`, a tab character `'\t'`, a dot `'.'`, a space `' '`, and digits.
- All file and directory names have **positive** length.