# DWITE '10 R3 #4 - Forest Fires

**Time limit:** 1.0s **Memory limit:** 64M

### DWITE Online Computer Programming Contest, December 2010, Problem 4

Forest fires are really dangerous, and can be started by even the smallest flame. Spreading from tree to tree, fires can engulf an entire forest in a matter of weeks. Given a map of a forest with locations of where a fire (or multiple fires) might have started, determine how long it would take the fire to capture the entire forest.

The input will contain 5 test cases, each a $10 \times 10$ map, followed by a line of $10$ dashes for visual separation.

- `.` - blank space
- `T` - a tree
- `F` - a tree on fire

Fires only spread from existing fire to adjacent trees, in $4$ directions (so not diagonally). It takes $1$ unit of time for the fire to spread from one location to the next. The fire spreads in all $4$ directions at the same time.

The output will contain 5 lines, the time it takes for the fire to capture the entire forest. If some piece of the forest survives, output $-1$.

## Sample Input

```
..........
..........
..........
..........
..TTTTT...
..F...F...
..........
..........
..........
..........
----------
..........
..........
..........
...TT.TT..
...F......
..........
..........
..........
..........
..........
----------
```

## Sample Output

```
3
-1
```

Problem Resource: DWITE