

# MineMine

## ZPRAC-16-17-Lab12

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MINEMINE [30 Points]

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### ANNOUNCEMENT:

Up to 20% marks will be allotted for good programming practice. These include

- Comments for non trivial code
  - Indentation: align your code properly
  - Use dynamic memory allocation whenever array memory is needed, not doing so will lead to zero marks
  - Use the function definition given, changing the definition will lead to zero marks.
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Minesweeper is a famous game usually found in windows computers. In minesweeper, you have a grid with mines placed at some places and the other positions are the safe positions.

Under a safe position, there is a hint hidden which tell you how many mines are neighbouring that cell. Given an  $n \times n$  matrix of a minesweeper game, filled with o's and x's, o represents a safe position and x represents a mine position. You need to print a hint matrix which is also an  $m \times n$  matrix.

The hint matrix will have -1 wherever there is a mine, otherwise, it will have the count of mines in its immediate neighbourhood.

Note that corner cells have 3 neighbours, edge cells have 5 neighbours and normal cells have 8 neighbours.

Input:

The first line contains  $n$ , next  $n$  lines follow, each containing a string of length  $n$ . These  $n$  lines denote the mine matrix.

Output:

$n$  lines, each containing  $n$  spaced integers denoting the hint matrix.

Constraints:

$1 \leq n \leq 200$

Example:

3

xox

oox

ooo

Output:

-1 3 -1

1 3 -1

0 1 1

Function prototype: `int **gen_hint(int **A, int n);`