Computer Organization 1st Assignment Report

An example input and output from program terminal:

Please enter grid count: 6
6
Please enter column count: 7
7
Please enter the entire grid in one line: ..........O.......O.........OO.....OO.....
OOO.OOO
OO...OO
OOO...O
..OO.OO
...OOOO
...OOOO

-- program is finished running –

Another example:

Please enter grid count: 3
3
Please enter column count: 3
3
Please enter the entire grid in one line: ....O....
O.O
...
O.O

-- program is finished running --

Program Flow

Program takes three inputs from the user: grid count, column count and the entire grid in one line. Program starts with jump and link to take_row_and_column_count. In this method, the program prints "Please enter grid count: " and takes the grid count. Then, the program prints "Please enter the column count: " and takes the column count. And the program links back to main and jump and links to take_the_grid method.

In this method, the program takes the grid as a string and links back to main. Then program jump and links to fill_the_new_grid method. In this method, the program fills another new array with 'O' characters with the same row and column count of the user provided array. And the program links back to main.

Then, program jump and links to explode_and_refill_grid method. In this method, the program searches for each element of the string which is given by the user.

It searches each element of the provided grid. If the current element is a bomb ('O'), it turns the same index of the newly created array which is filled with 'O' characters into '.' character.

Then, the program checks if this element is on the left edge; if it isn't, it makes '.' the left index of this element. If it is on the left edge, it skips to check if the element is on the right edge.

If its not on the right edge, program makes the right index of the current element '.' character. If its on the right edge, it skips to check if the current index is on the top grid.

If its not on the top grid, it makes the above cell '.' character. If its on the top grid, it skips to check if the current element is on the bottom grid.

If its not on the bottom grid, it makes the below cell '.' character. If its on the bottom grid, it jumps to increment index method. It increment the strings search index and column index.

If the column index is equal to column count, it means it was the last element of this grid and it jumps to reset_col_ndex_decrease_grid_count method. It resets the col index to 1 and decrements grid count -1 and jumps to check_next_position back. If the grid_count is 0, it means the search is over and it jumps to end_check. In end_check, program prints the entire grid line by line.

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