

Practice 9 Repetition + 2D List

1. Given a 2D list of integers of square size, write function to average out values with 8 neighboring values. There are 8 neighbors left, right, up, down, left upper diagonal, right upper diagonal, left lower diagonal & right lower diagonal [Ignore first row, last row, first column & last column]
2. Given a 2D list of integers of square size, replace value with the max value in the neighbors, do it for 4 neighbors and 8 neighbors in separate functions
3. Given a 2D list of integers, print average of every 3x3 sub-list inside the 2D list

Explanation: Consider the blue box, having 9, 9, 5 in first row, 4, 7, 3 in second row and 10, 4, 4 in last row. The average of these values is $(9+9+5+4+7+3+10+4+4) = 55 / 9 = 6$ (Integer Division). In both left side and right side values in blue shade are corresponding. Means, in right side block bold, blue shaded 6 is average of numbers in left side block blue shaded.

Similarly, next block on the left is shown in orange color and corresponding average value 5 is shown in orange color in the right side block. Anyhow, you have to write a general code for any square 2D list.

| | | | | |
|----|---|----|---|---|
| 9 | 9 | 5 | 9 | 4 |
| 4 | 7 | 3 | 7 | 5 |
| 10 | 4 | 4 | 2 | 4 |
| 5 | 2 | 10 | 1 | 9 |
| 8 | 6 | 10 | 5 | 6 |

| | | | |
|---|---|---|---|
| 6 | 5 | 4 | 6 |
| 5 | 4 | 5 | 5 |
| 6 | 4 | 5 | 6 |
| 6 | 5 | 6 | 6 |

4. Given a 2D list print the list reversely. Such that print rows from top to bottom and right to left. See the original list on left side and required output on right side

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

| | | |
|---|---|---|
| 9 | 8 | 7 |
| 6 | 5 | 4 |
| 3 | 2 | 1 |