

```
def fill_gaps(grid: list[list[int]]) -> list[list[int]]:
    new_grid = copy.deepcopy(grid)
    a.) new_grid = copy.deepcopy(grid)
    b.) row = 0
    c.) col = 0
    d.) neighbour_list = []
    e.) for i in grid:
    f.)     for j in i:
    g.)         if j == 0:
    h.)             neighbour_list = find_neighbour_values(grid,row,col)
    i.)             avg = sum(neighbour_list) // len(neighbour_list)
    j.)             new_grid[row][col] = avg
    k.)             col += 1
    l.)         row += 1

    m.) return new_grid
```

```

| 1  0 |
|     |
| 3  4 |
|     |

```

b.) row = 0
c.) col = 0
d.) taking an empty list for neighbour list
e.) i = [1,0]
f.) j = 0
g.) if j == 0 which is true this time
h.) the neighbour list looks for the surrounding numbers for j == 0 which is [1,3,4]
i.) the variable avg finds the avg of the surrounding numbers which is $1+3+4 = 8$ and divides it by the number of lists which is 3. Thus $8/3=2.667 \approx 3$
j.) this line replaces the 0 with 3 which is the estimated value of the plot. Thus new grid is [[1,3], [3,4]]
k.) here the value of column is 1 since **col = col + 1**
l.) here the value of row is 1 since **row = row + 1**
m.) we return to the loop again
b.) row = 1
c.) col = 1
d.) taking an empty list for neighbour list
e.) i = [3,4]
f.) j = 3 which is not equals to 0
g.) if j == 0 which is false this time thus we do not go through the h,i and k
k.) col = 2
l.) row = 2

Thus we get that there are 2 columns and 2 rows in the function where we get the final matrix as

```

| 1  3 |
|     | which is the new_grid.
| 3  4 |
|     |

```