

### Task 3 - Allow changing blur *radius* and *weight*

Add two new options to the blur algorithm, as follows:

```
$ python esss_test.py -blur <image-file> <radius> <weight>
```

**Radius:** surrounding pixels from where color average is calculated should be determined by an integer radius value. Original algorithm has radius = 1 (meaning the 3×3 windows around each pixel). For example, a radius of 2 would use a 5×5 window around each pixel.

3	16	14	14	5	10
2	7	13	0	13	3
4	14	1	4	1	5
13	7	2	1	9	3
13	13	4	4	3	7
14	8	6	9	10	6

Example of pixels to use when radius = 2

	?	?	?	?	?
	?	?	?	?	?
	?	?	6	?	?
	?	?	?	?	?
	?	?	?	?	?

Output example when radius = 2 and weight = 1

In the example above:  $(7 + 13 + 0 + 13 + 3 + 14 + 1 + 4 + 1 + 5 + 7 + 2 + 1 + 9 + 3 + 13 + 4 + 4 + 3 + 7 + 8 + 6 + 9 + 10 + 6) / 25 = 6.12 = 6$ .

**Weight:** a weight to be applied to the central pixel *only* (all other pixels take the weight 1), in other words a *weighted average* should be used now.

3	16	14	14	5	10
2	7	13	0	13	3
4	14	1	4	1	5
13	7	2	11	9	3
13	13	4	4	3	7

Input example

		?	?	?	
		?	7	?	
		?	?	?	

Output with radius = 1 and weight = 8

The output for the example above is calculated from  $(1 \times 1 + 1 \times 4 + 1 \times 1 + 1 \times 2 + \underline{8} \times 11 + 1 \times 9 + 1 \times 4 + 1 \times 4 + 1 \times 3) / 16$  and rounded.

Note that with radius=1 and weight=1, one should obtain the exact same results as in the blur implemented in Task 2.