



# Visualization of Information

MSDS 6390

Live session 5

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# Assignment 4

Dynamic particles

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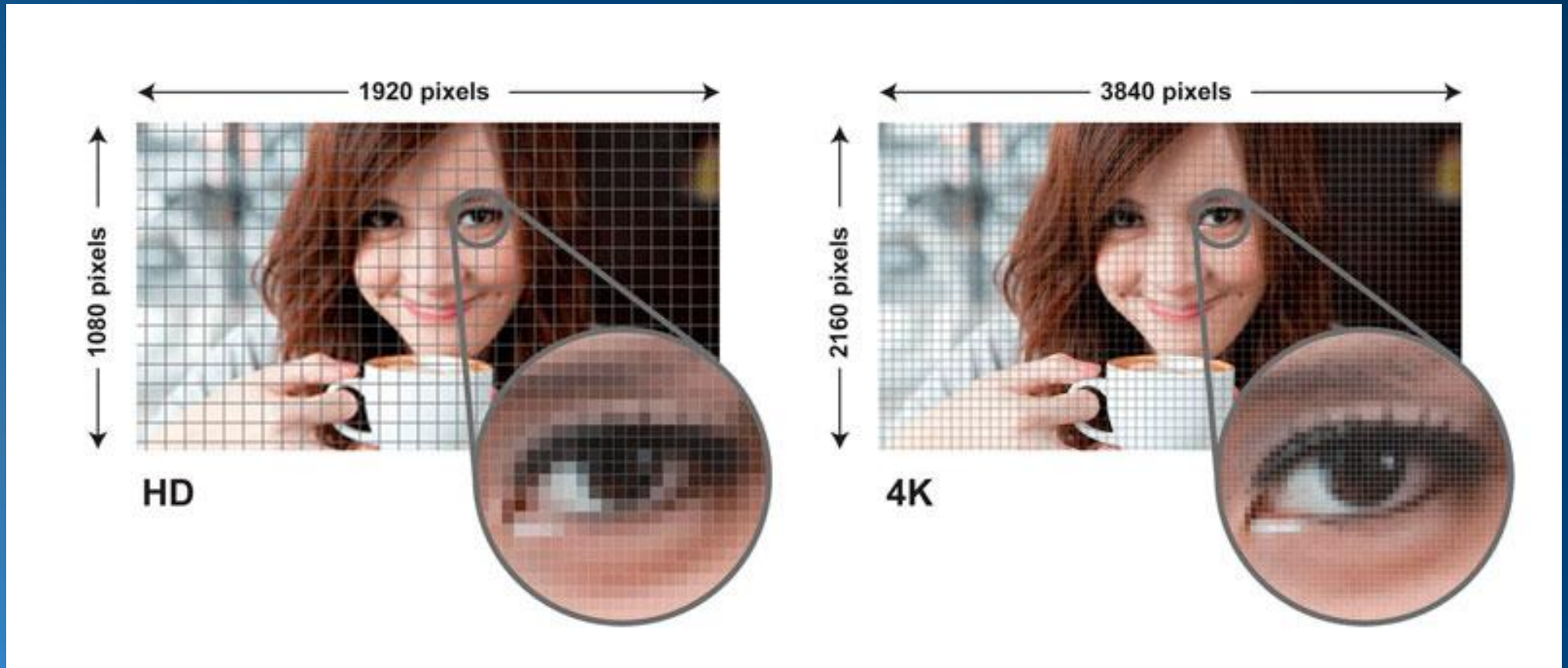


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# Images in computer graphics

- Pixels



<http://www.ubergizmo.com/what-is/ppi-pixels-per-inch/>

# Images in computer graphics

- Images in processing
  - pixels
  - loadPixels()
  - updatePixels()
- PImage
  - createImage()

How the pixels look:

0	1	2	3	4
5	6	7	8	9
10	11	12	13	14
15	16	17	18	19
20	21	22	23	24

How the pixels are stored:

0	1	2	3	4	5	6	7	8	9	.	.	.		
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<https://processing.org/tutorials/pixels/>

# Convolutions

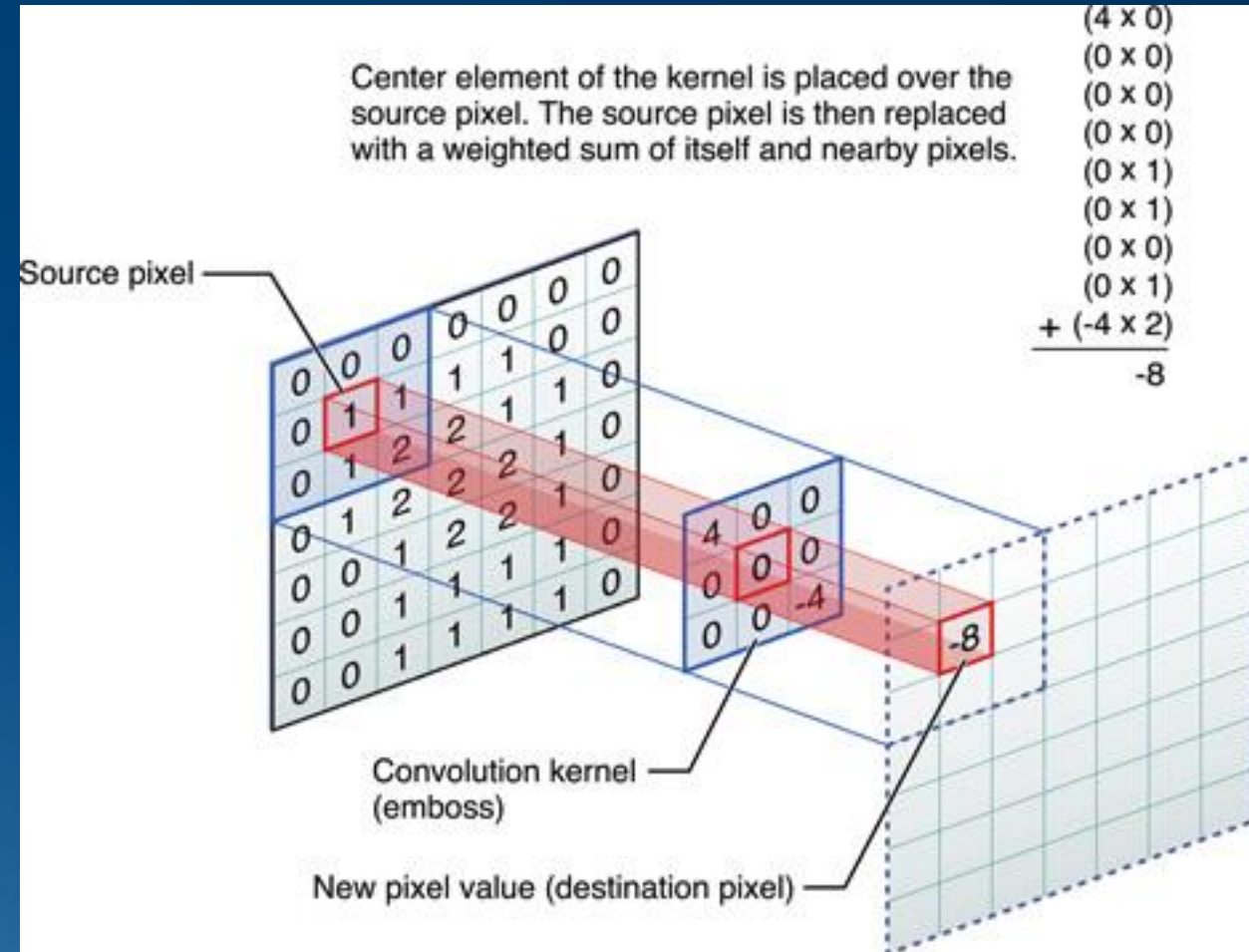
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# Convolutions

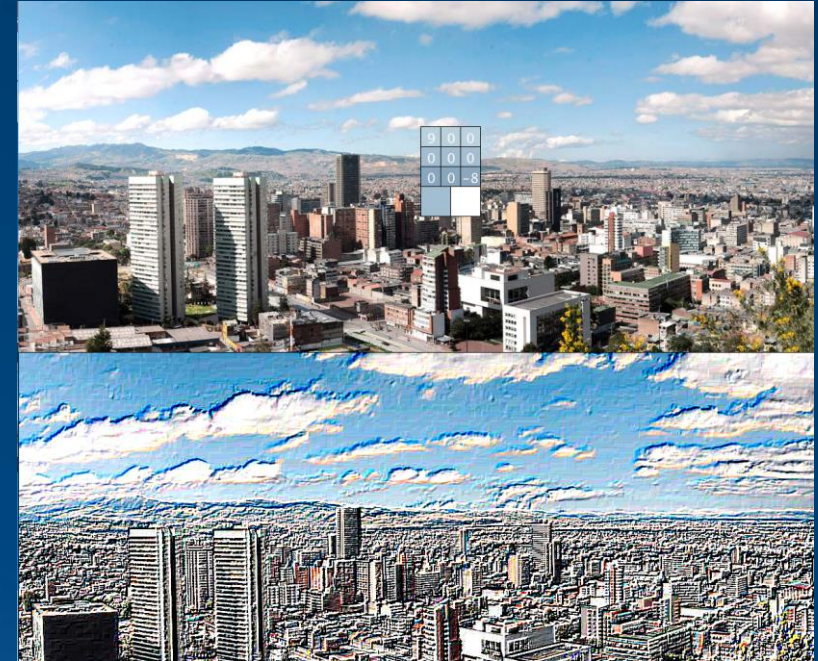
- Change the pixels' values of an image using a convolution kernel
- Each pixel new value depends on its neighbors' pixel values
  - Identity
  - Edge detection
  - Sharpen
  - Blur



[https://developer.apple.com/.../kernel\\_convolution.jpg](https://developer.apple.com/.../kernel_convolution.jpg)



# Live coding



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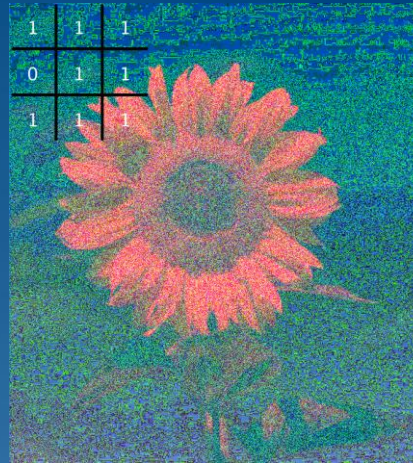
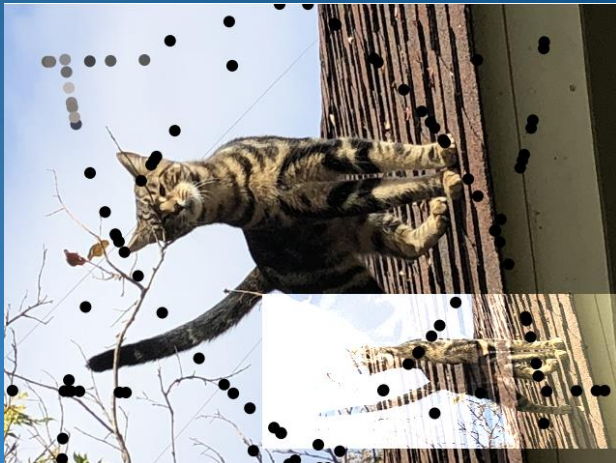


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# Assignment 5

- Select an image related to an issue you are interested in. Using Processing's pixels array and imaging functions, alter the image based on simple data pertaining to the issue. Please be prepared to discuss how your image alteration expresses the data and/or your message.



# Questions?

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