Assignment -4

1. Image Restoration (Noise Removal)
    1. Arithmetic Mean
    2. Geometric Mean
    3. Local Noise Reduction Filter
    4. Median Filter
    5. Adaptive Median Filter

Due Date: Nov 18th, 11:59 PM

Image Restoration

Input

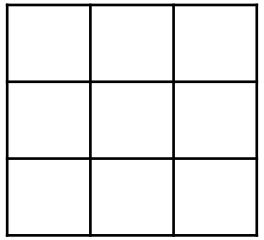
1. Noise Image

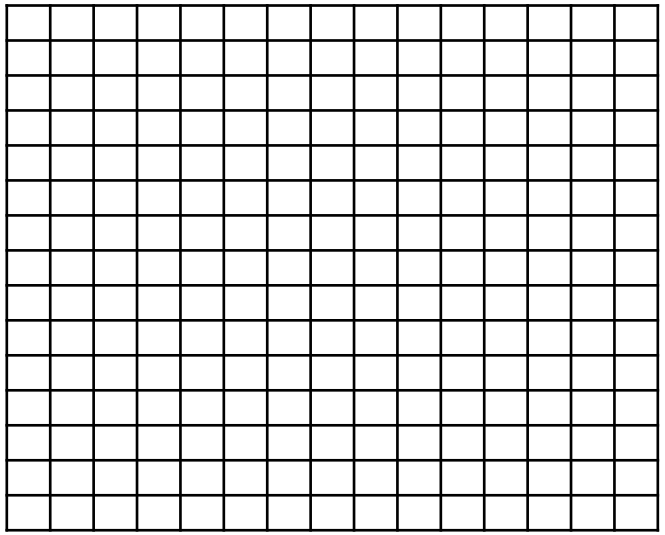
Gaussian

Bipolar (Salt and Pepper)

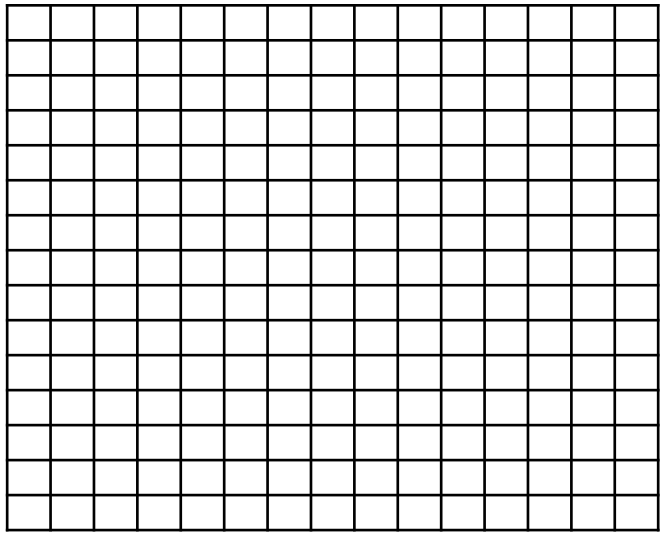
Filtering

Filter (3X3)





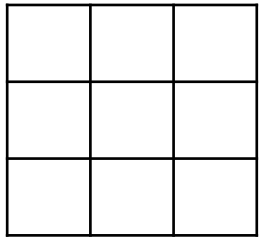
Noise image



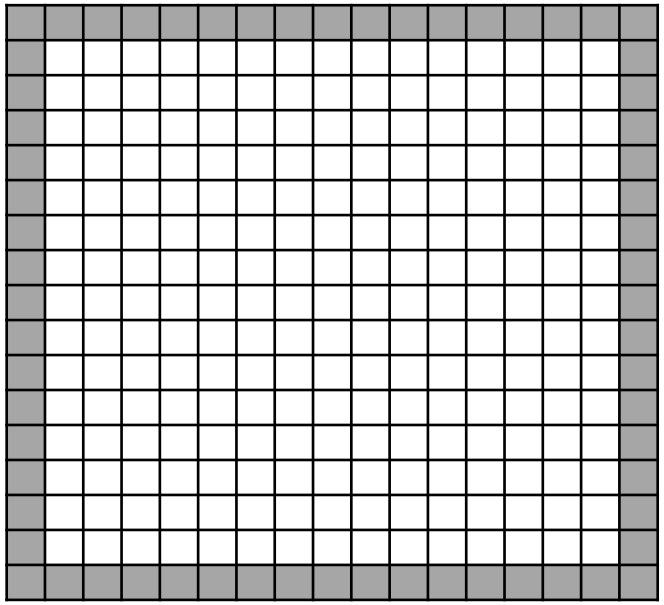
Output image

Filtering

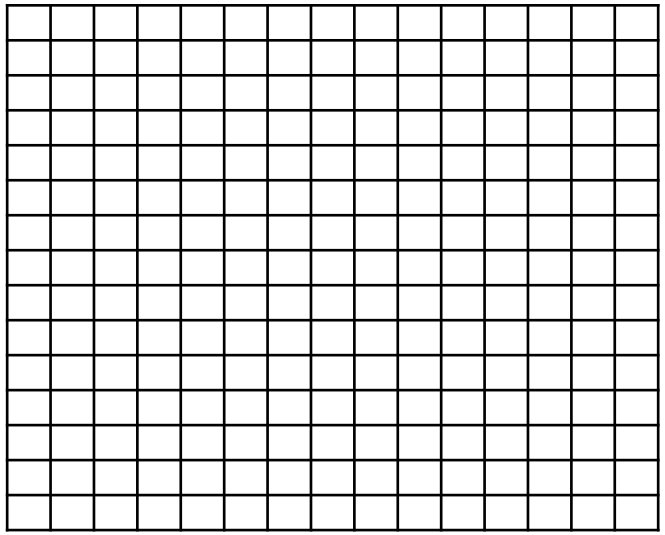
Filter (3X3)



Zero padding

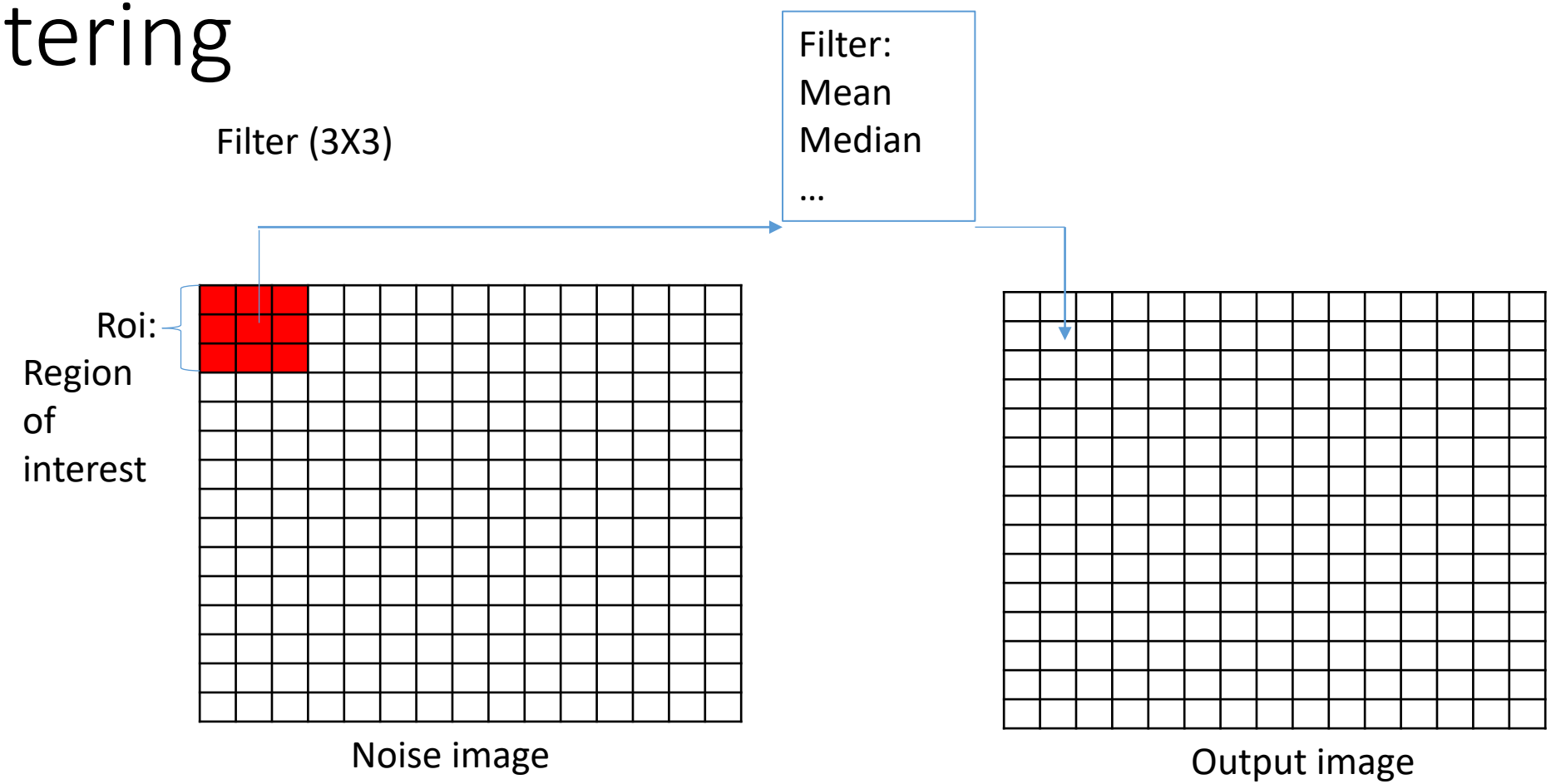


Noise image

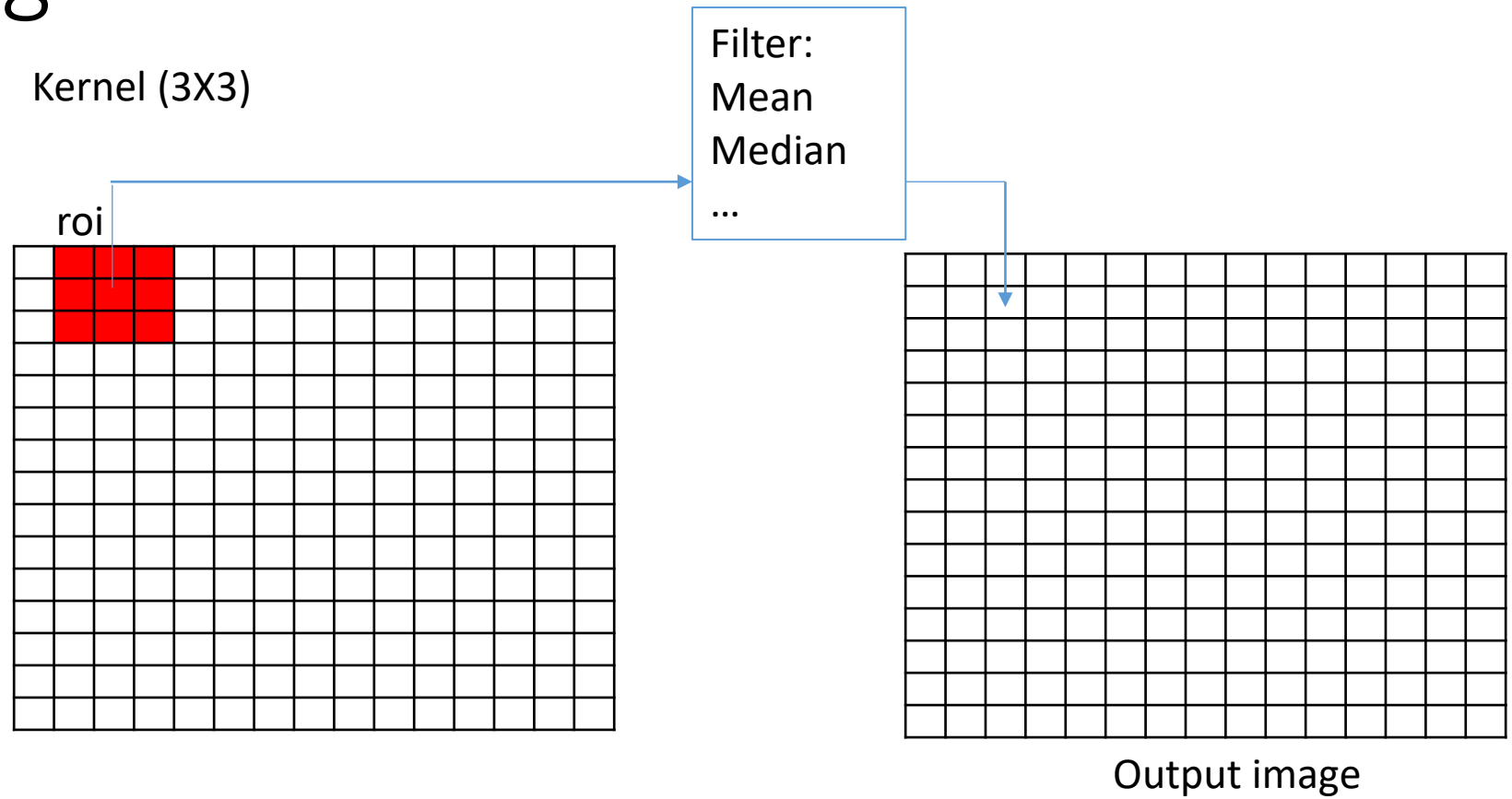


Output image

Filtering


Filter (3X3)
Filter:
Mean
Median
…
Roi:
Region
of
interest
Noise image
Output image

Filtering



Arithmetic Mean Filter

Gaussian Mean: 0, Var: 100

Filter Size: 7

Geometric Mean Filter

Gaussian Mean: 0, Var: 100

Filter Size: 9

Local Noise Mean Filter

Gaussian Mean: 0, Var: 100

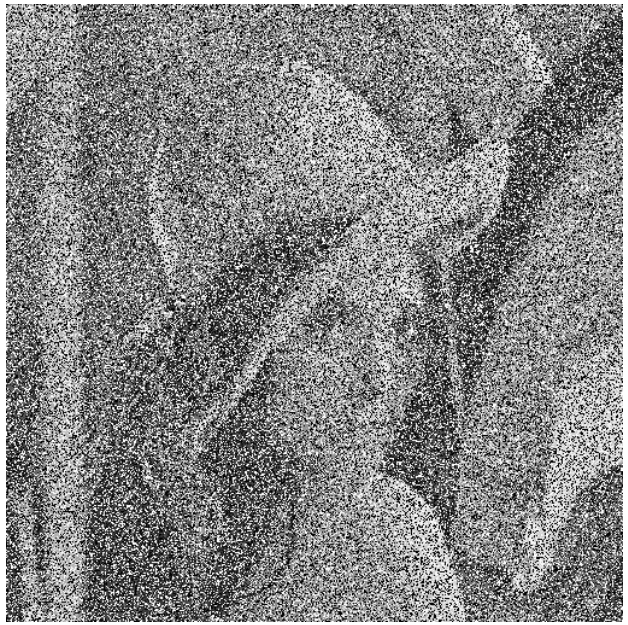
Filter Size: 9

Median Filter

Bipolar: Salt/Pepper
probability: 0.01

Filter Size: 3

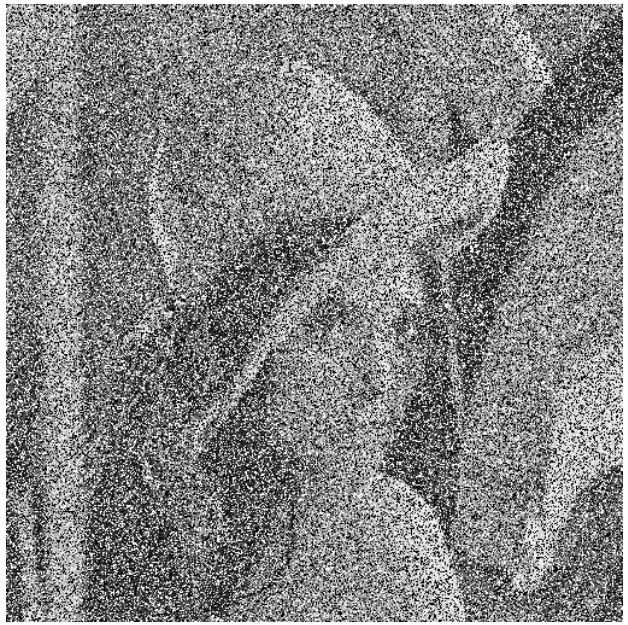
Median Filter



Bipolar: Salt/Pepper
probability: 0.5

Filter Size: 7

Adaptive Median Filter



Bipolar: Salt/Pepper
probability: 0.5

Filter Size: 7

Median vs. Adaptive Median

Median

Adaptive Median

Assignment -4

1. Image Restoration – 75 Pts

Total: 75 Pts.

Submission Instructions

- Must use the **starter code** available in **Github**
- Submission allowed only through **Github**
- You will receive an email with invitation to join **Github** classroom
- Start by reading the **readme.md** file. Instructions are available here
- Github will **automatically** save the **last commit as a submission** before the deadline