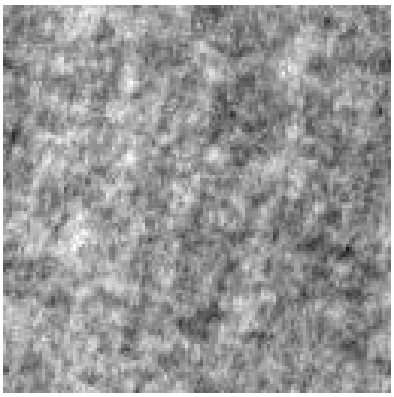
REPORT
ASSN. - 5

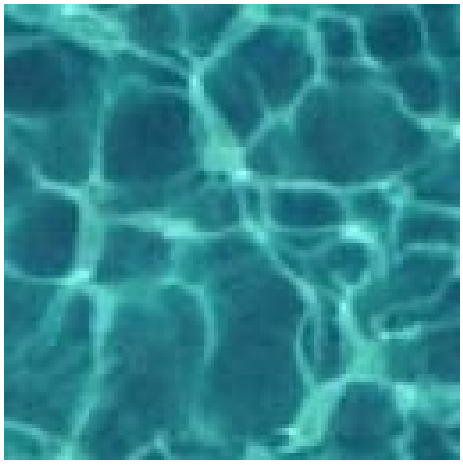
This assignment consisted of several methods of texture synthesis of which I implemented random phase noise, non-parametric synthesis, and quilting.
This report discusses nature and effectiveness of these various algorithms subjected to change in parameters.

Random Phase Noise:

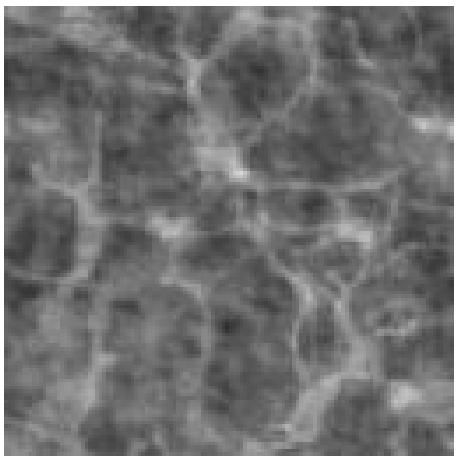
Input Image



Output Image

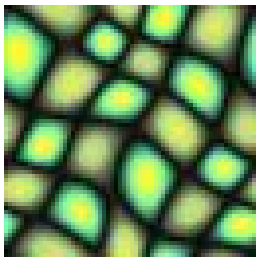


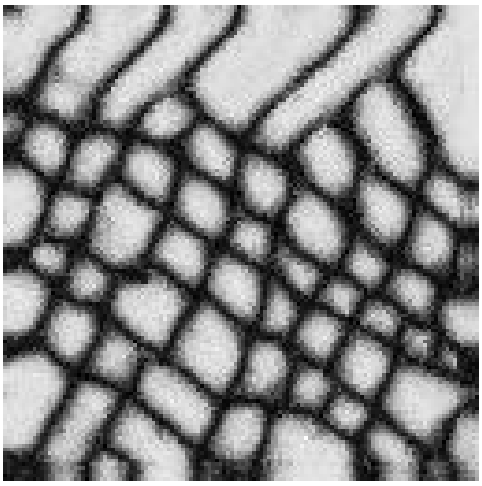
Input Image



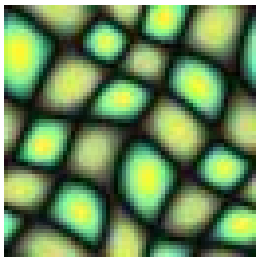
Output Image

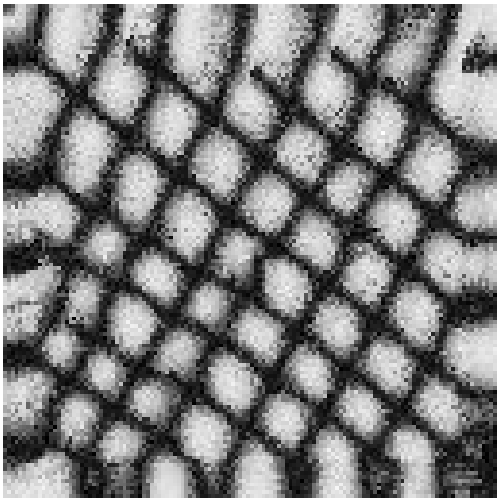
Non-Parametric Synthesis:



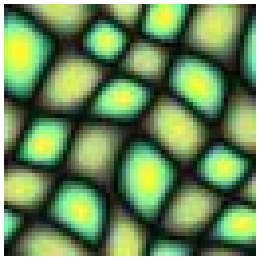


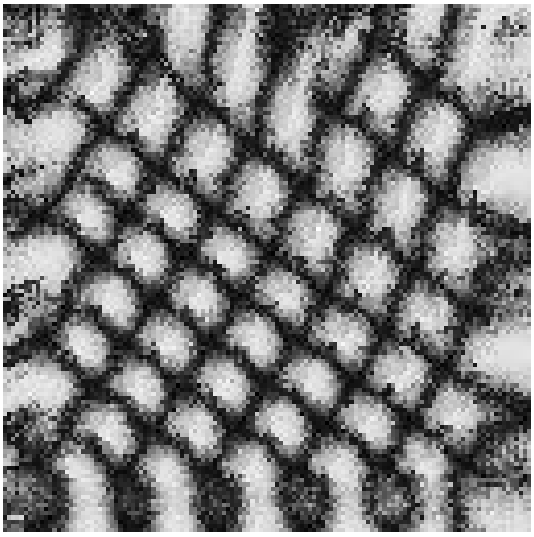
Window Size = 4 , Time taken = 140 sec





Window Size = 8, Time = 70 sec

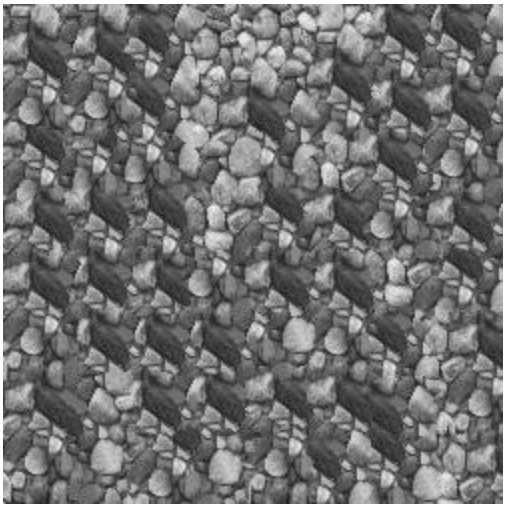




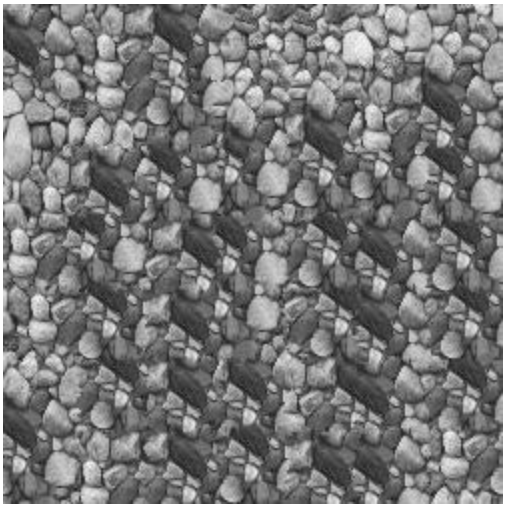
Window Size = 12, Time = 26 sec

The time taken for larger image sizes are quite high by this algorithm. As we can see with increasing window size the texture pattern in the image become more clear.

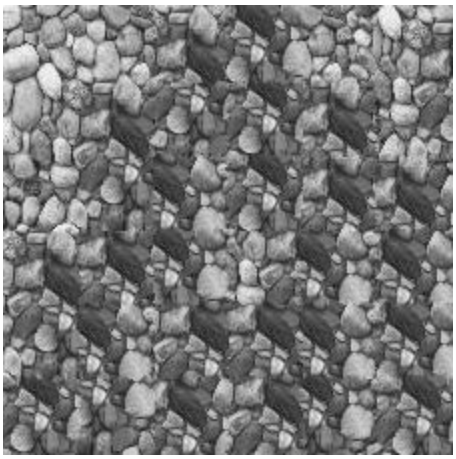
Quilting:



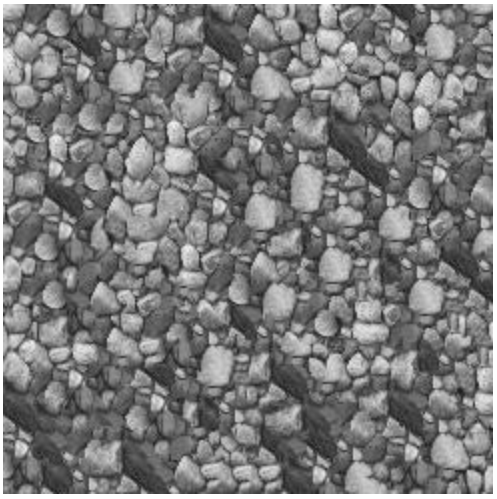
Tile Size = 40 , Overlap = 10



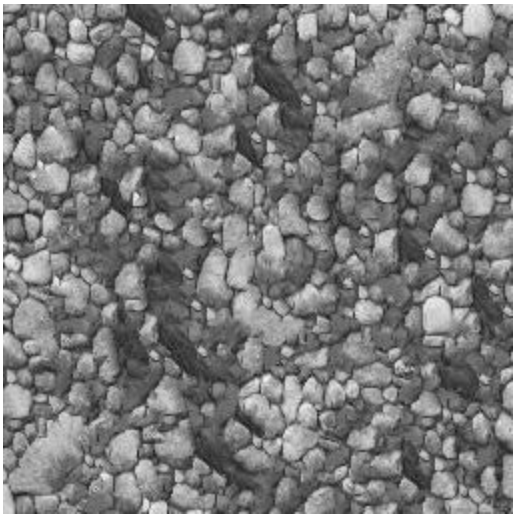
Tile Size = 40 , Overlap = 5



Tile Size = 40, Overlap = 3

Tile Size = 20, Overlap = 5

Tile Size = 10, Overlap = 5

From this trend, we note that the quality of texture created increases with a decrease in tile size however the time taken increases exponentially with decrease in tile size. Increasing overlapping regions increases the homogeneity and tries to smoothen any sudden change so it is preferable. However, too large or too small overlapping regions both will yield foul textures.