


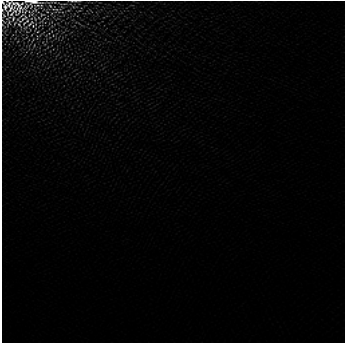


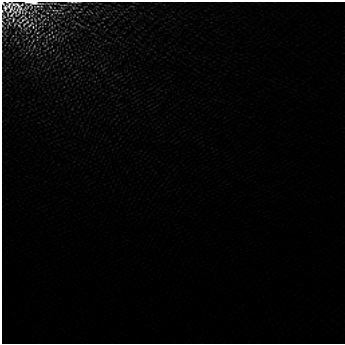


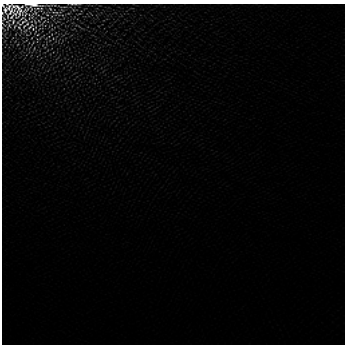

## 2D Discrete Cosine Transform Implementation

- **Code**

The Code in the path “./Code/DCT.cpp”.

- **Result**

The Result shown 3 different block size with Spatial Domain image, Frequency Domain image and DCT image.

Spatial Domain	Frequency Domain	DCT
		
Block Size = 4		
		
Block Size = 8		
		
Block Size = 16		

## ● Discussion

I found a DCT problem after doing the experiment. The code running time is too long. Running DCT code needs to about 4-5 minutes at the image size is  $256 \times 256$ . As the size of the picture gets bigger, it takes longer. Because this reason, I tried to add the parallel computing to resolve only one CPU core is busy state but others are idle state. In the experiment results, it did reduce the time spent but the code has some bugs need to fixed so I don't Attach the changed source code.

The quality experiment I was put 3 different block size 4, 8 and 16. As theory that the larger block size value, the worse image quality. But running time was increased not to much.