

ECE599 - Assignment Homework 2

Using the Late Submission Permitted for the Term (Deadline – Tuesday, Resubmitted – Thursday)

Opeyemi Ajibuwa

Question 1

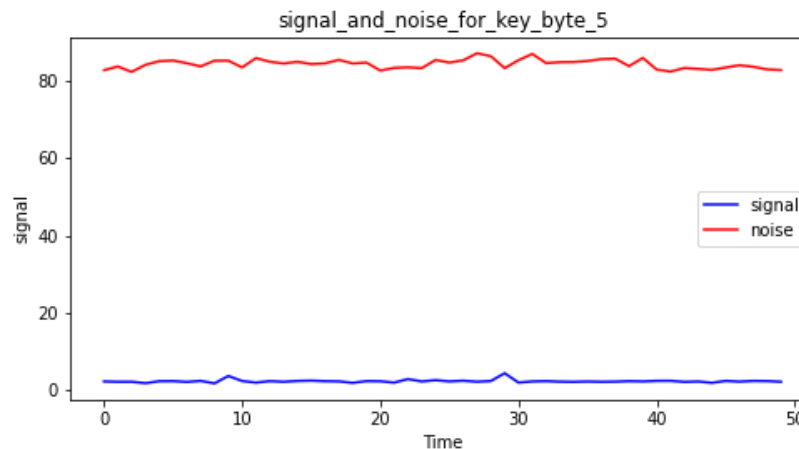
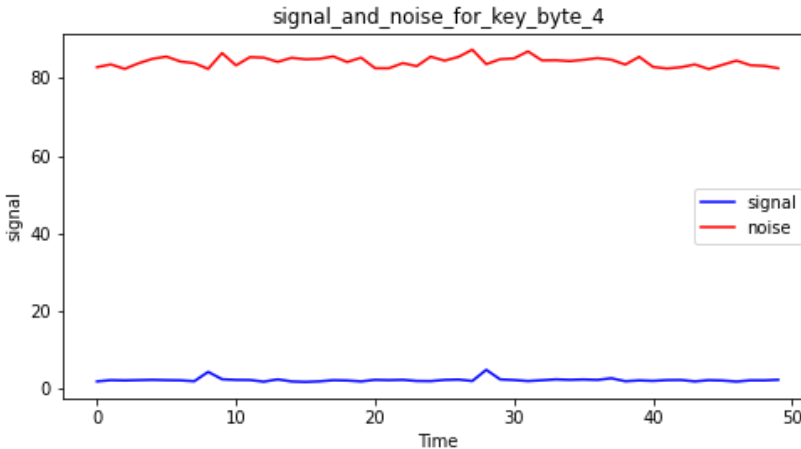
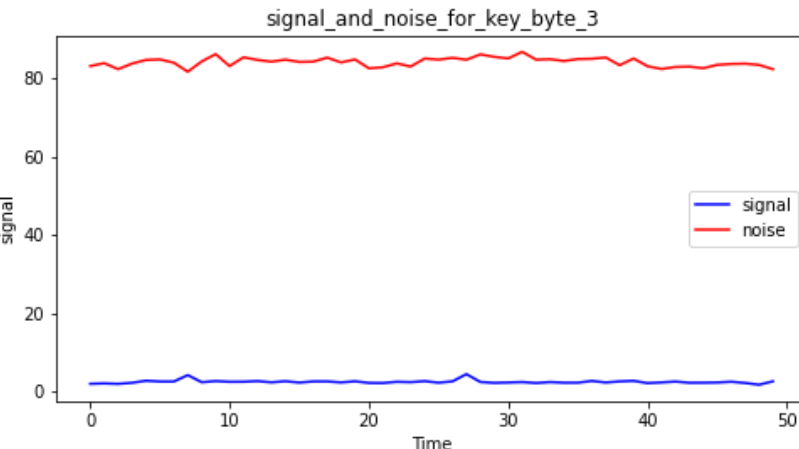
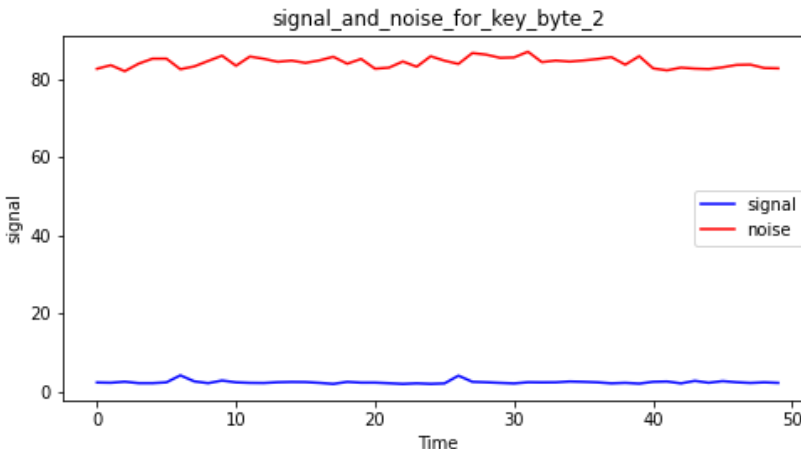
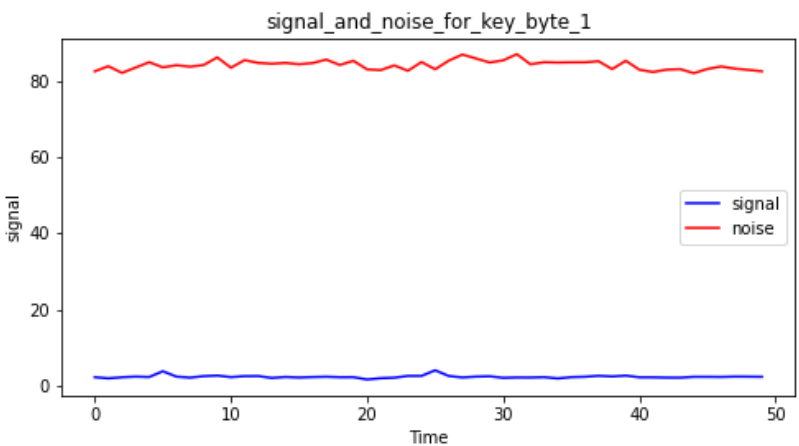
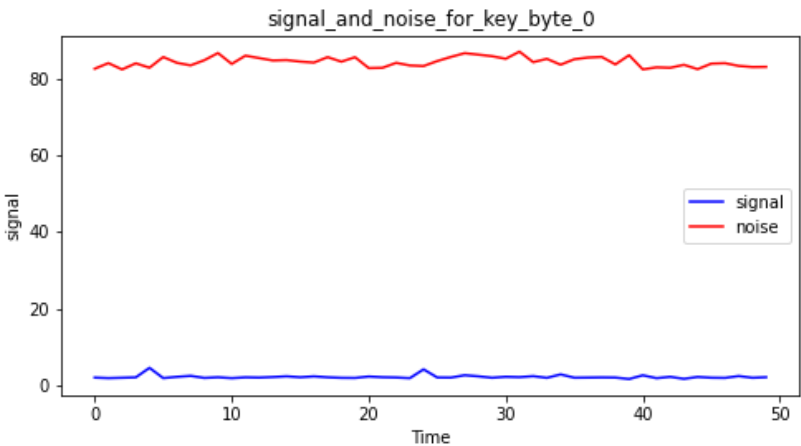
e. Compare the runtime of the different methods

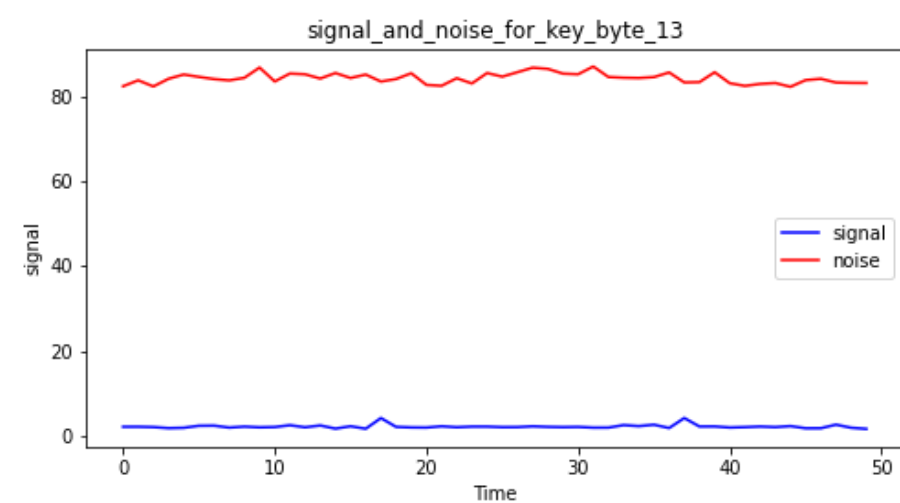
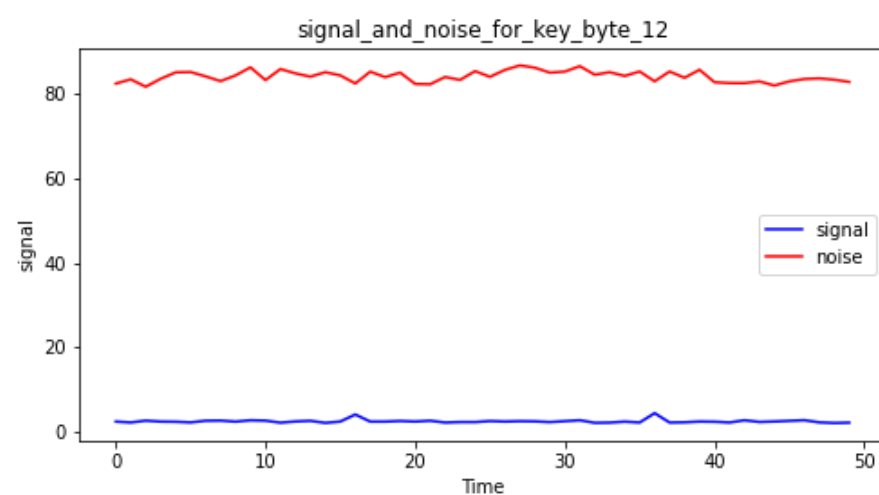
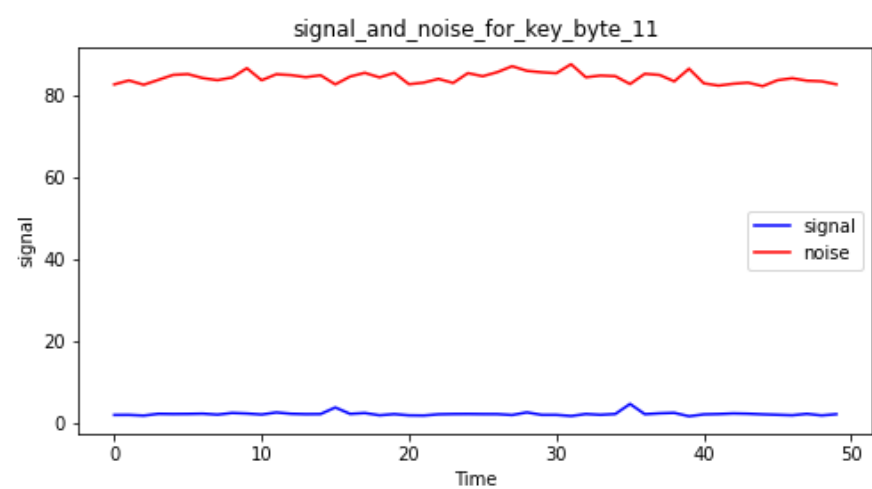
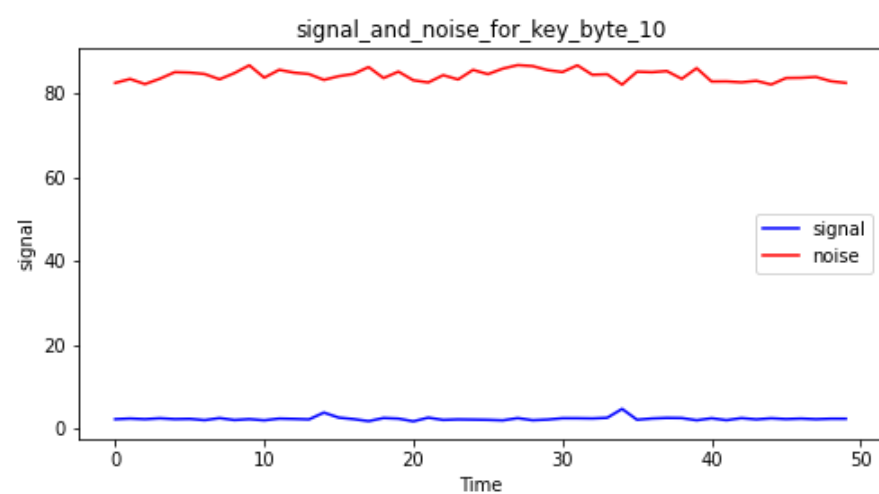
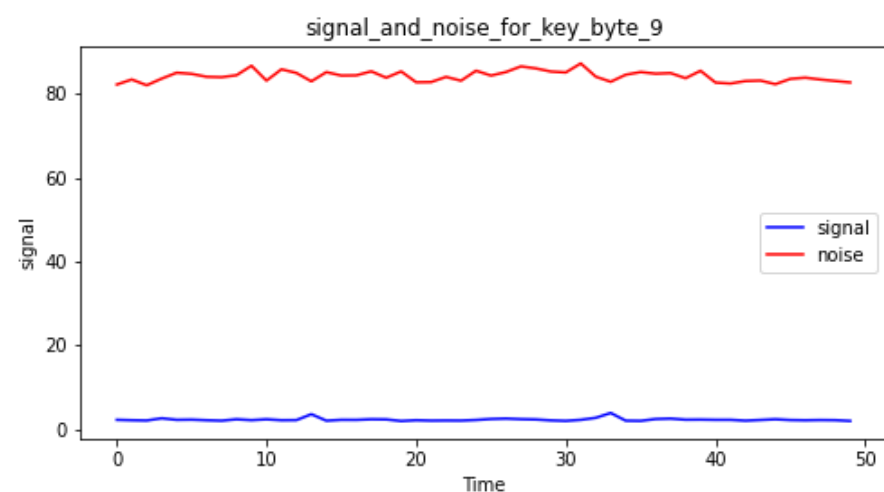
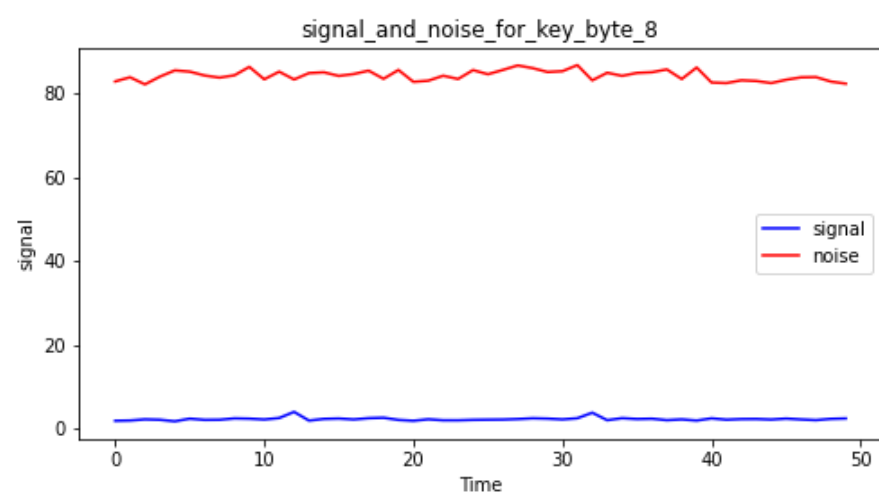
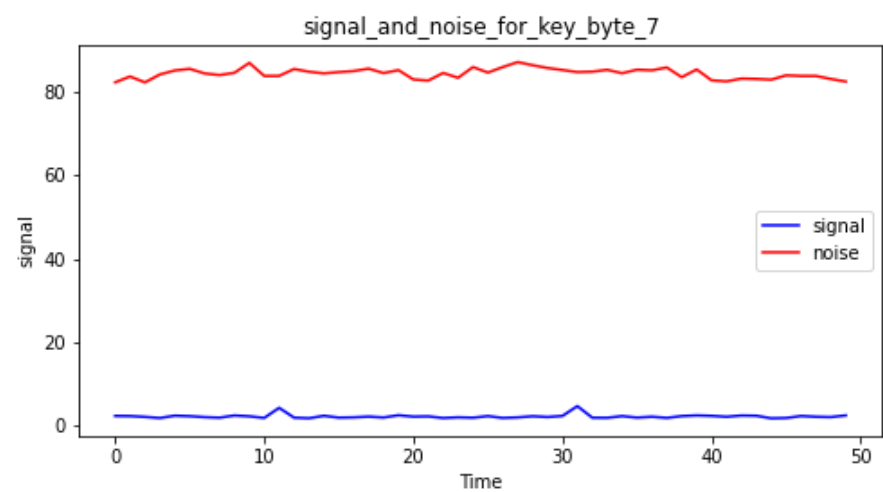
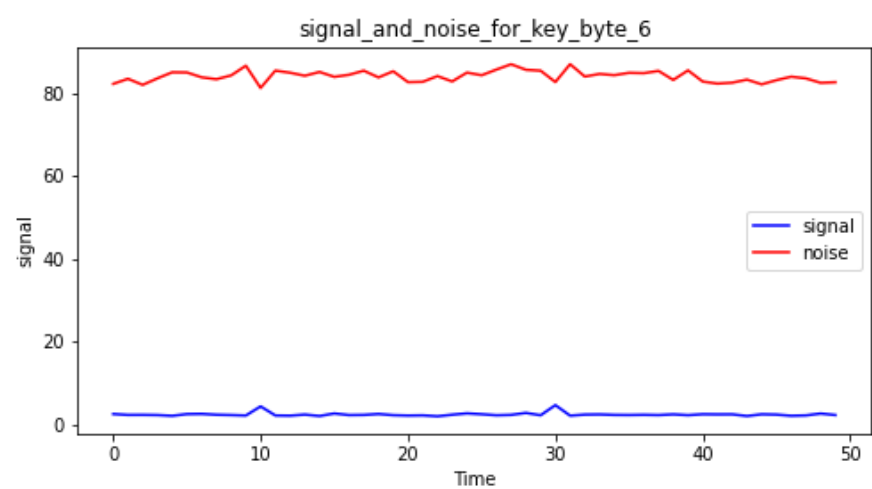
	Runtime (seconds)
Naïve Approach	7.2
Welford Algorithm	105.1
One-pass Arbitrary	66.5
Histogram	93.7

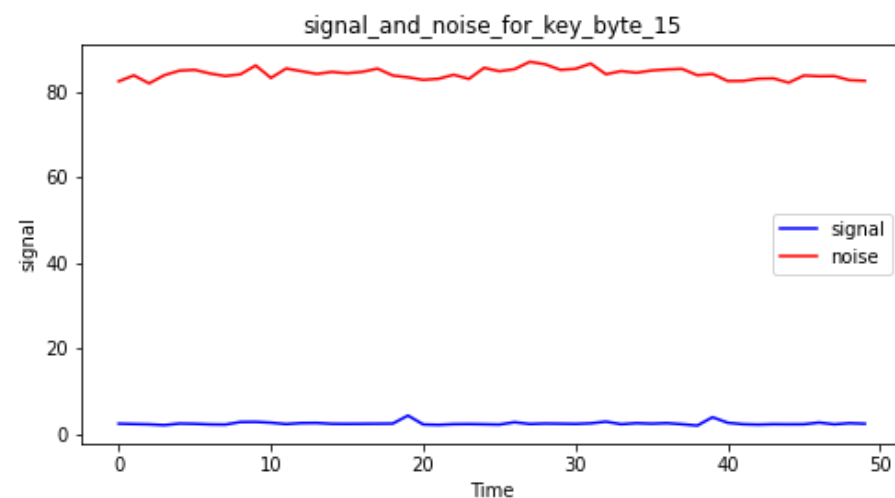
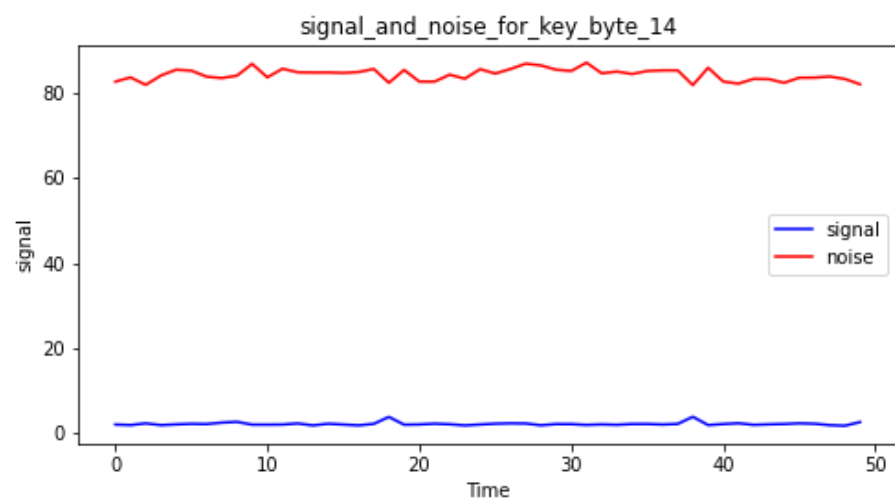
Question 2

a.b. Compute the numerator (‘signal’) and denominator (‘noise’) of the traces and plot the result

The following figures correspond to the signal and noise of each of the plaintext bytes:

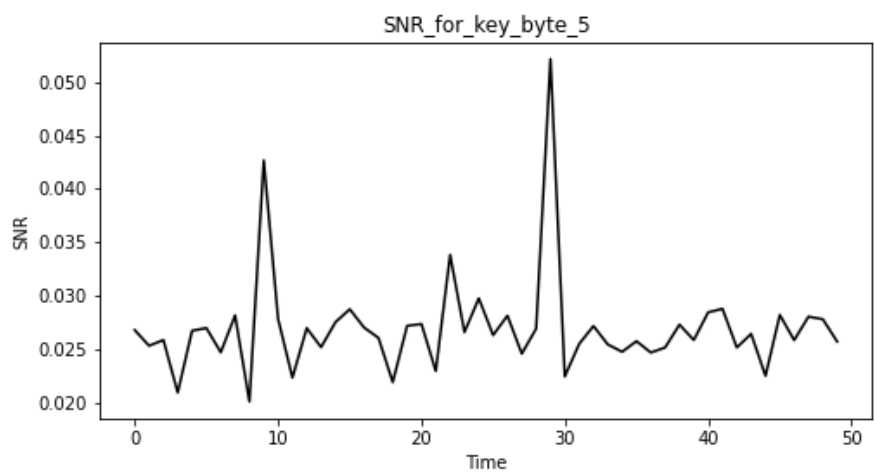
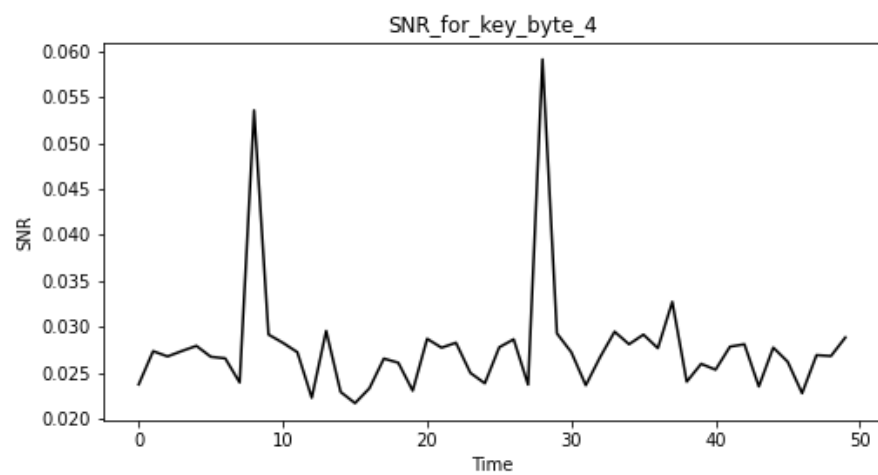
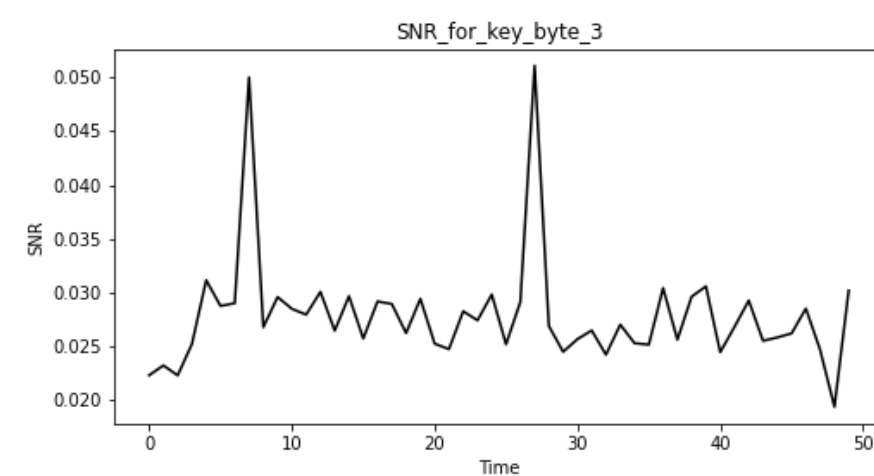
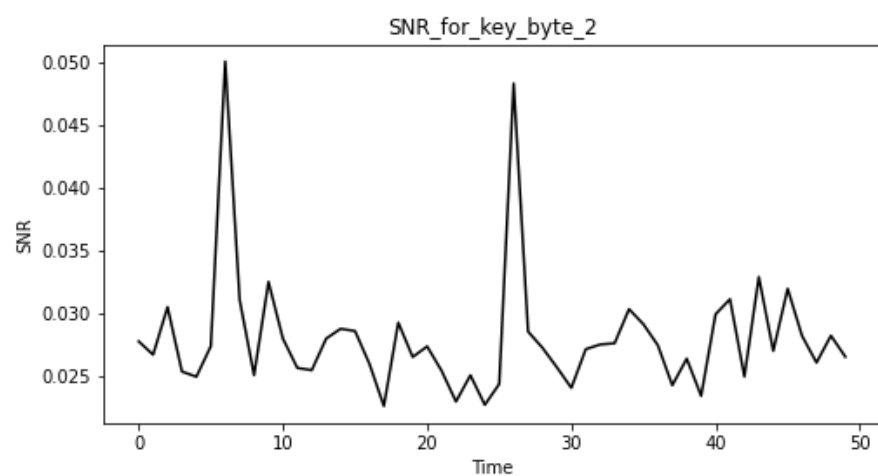
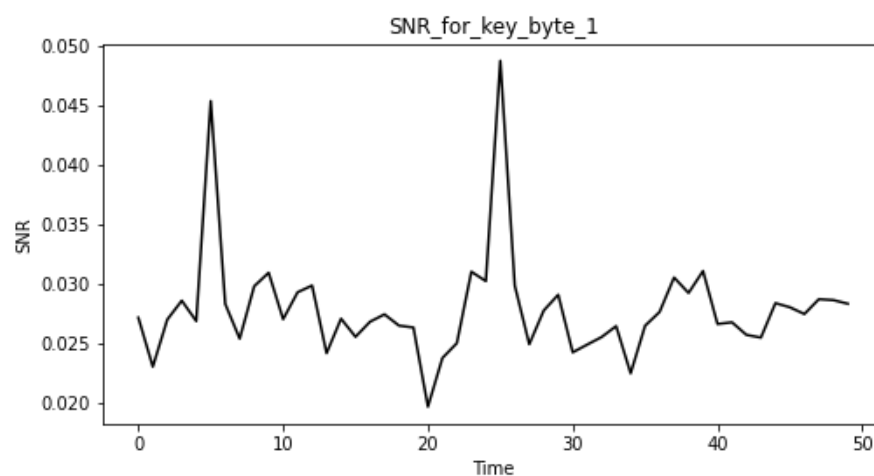
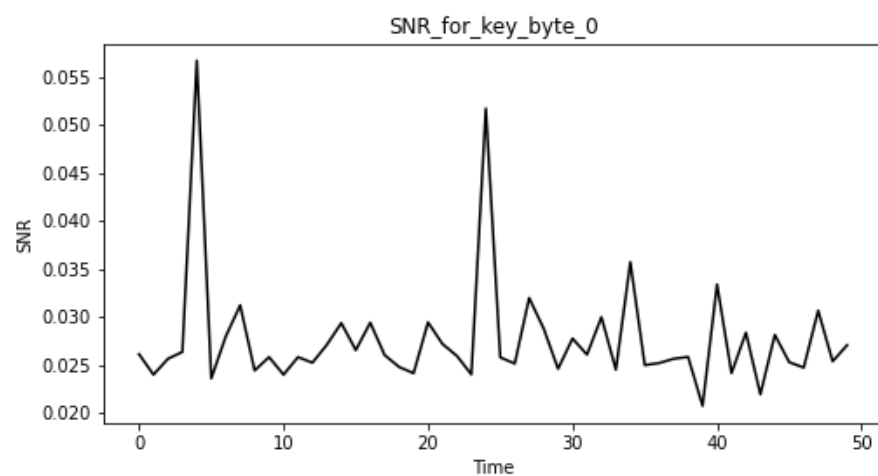


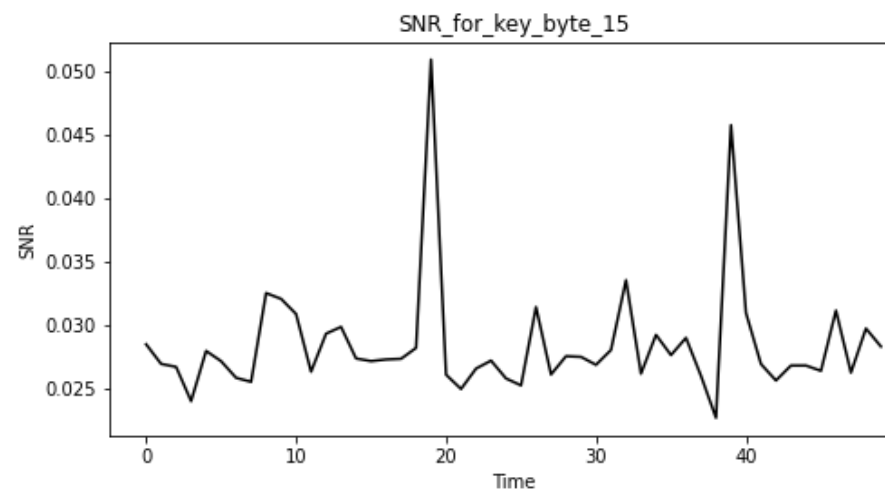
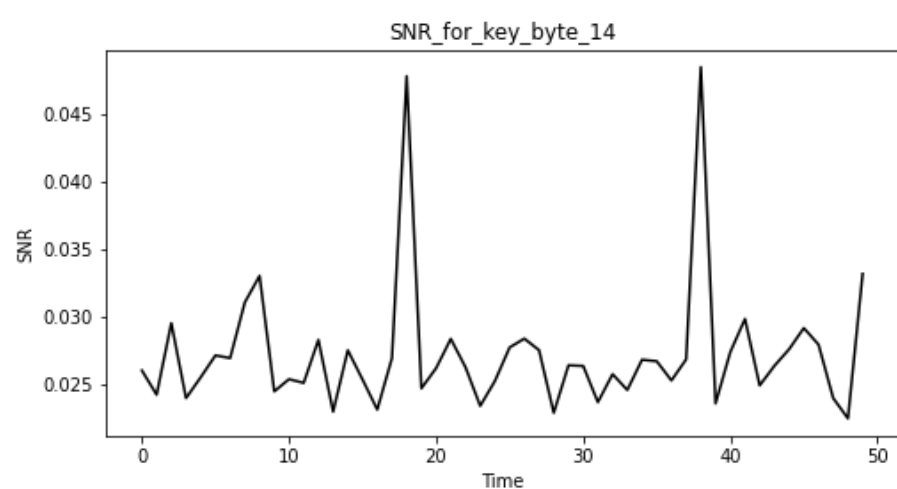
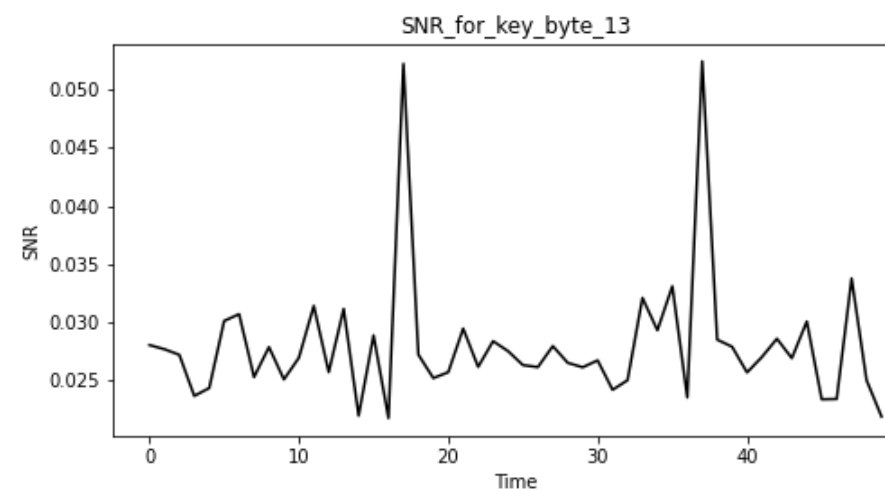
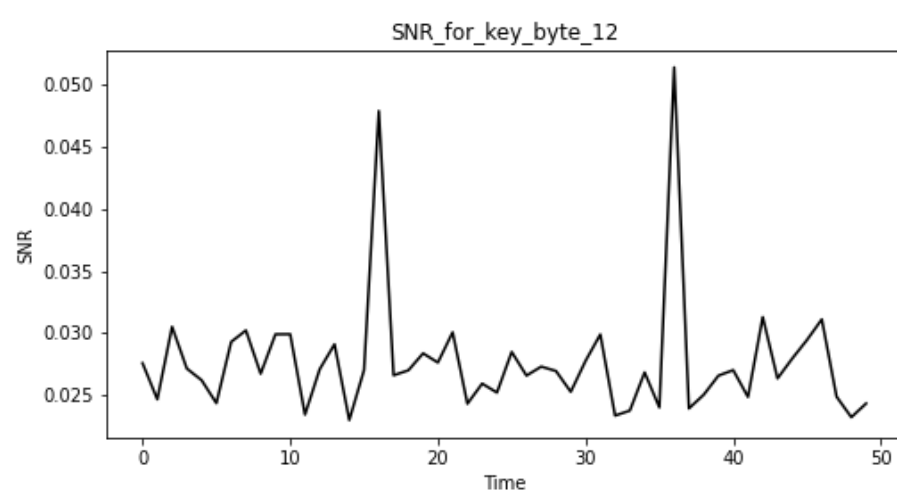
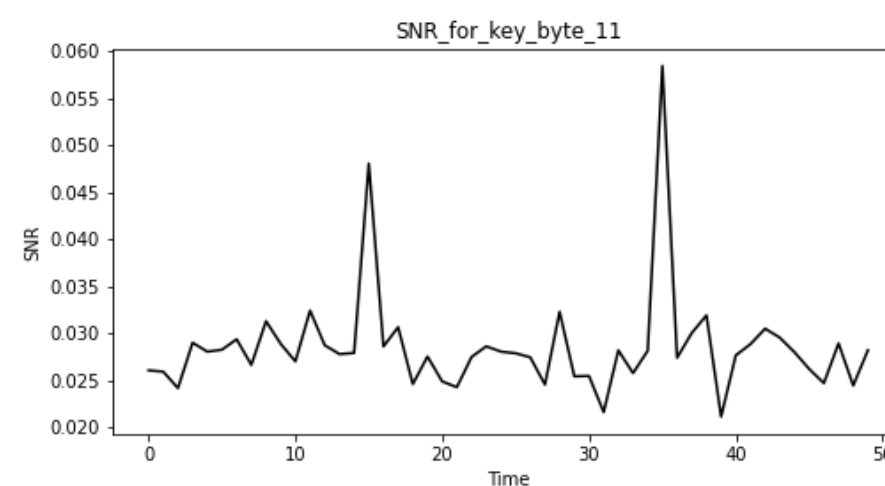
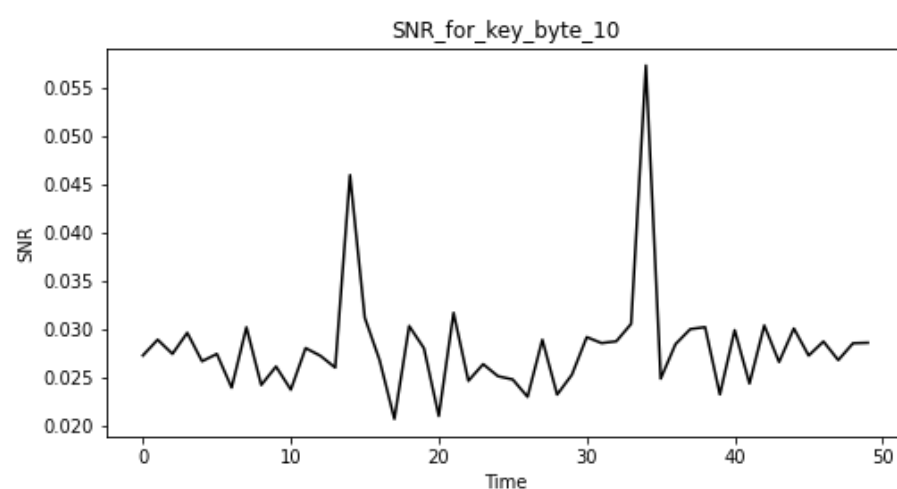
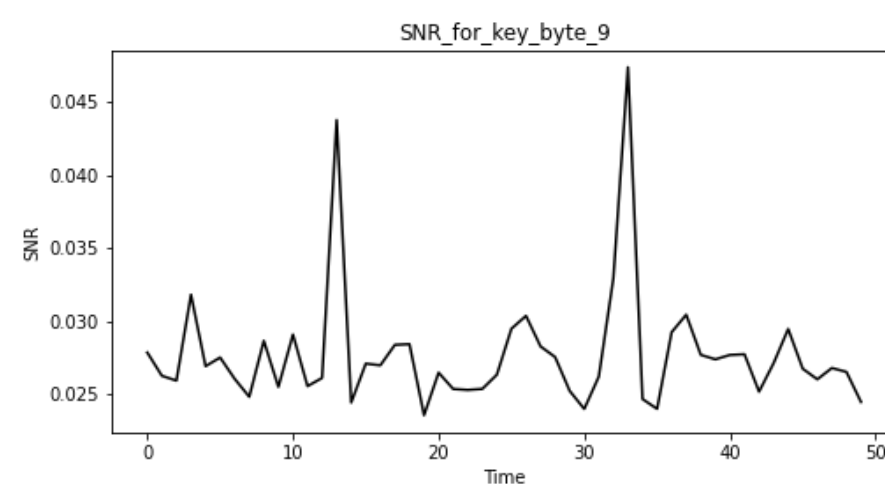
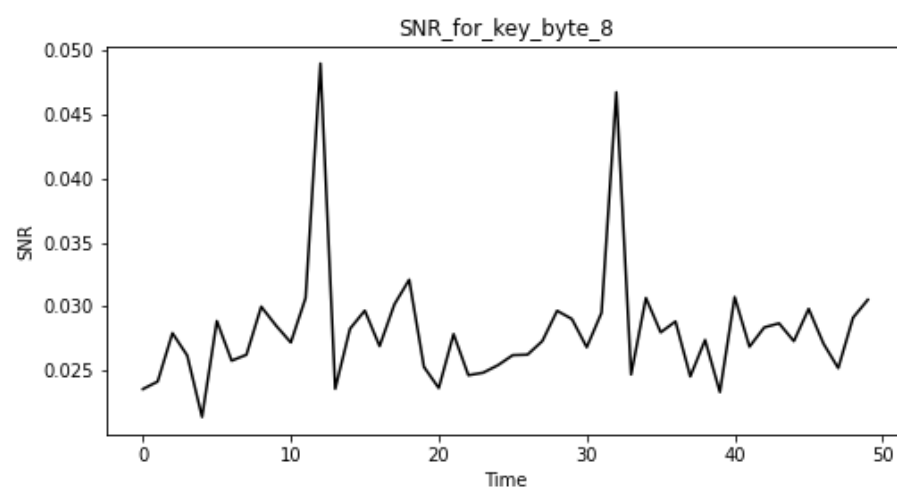
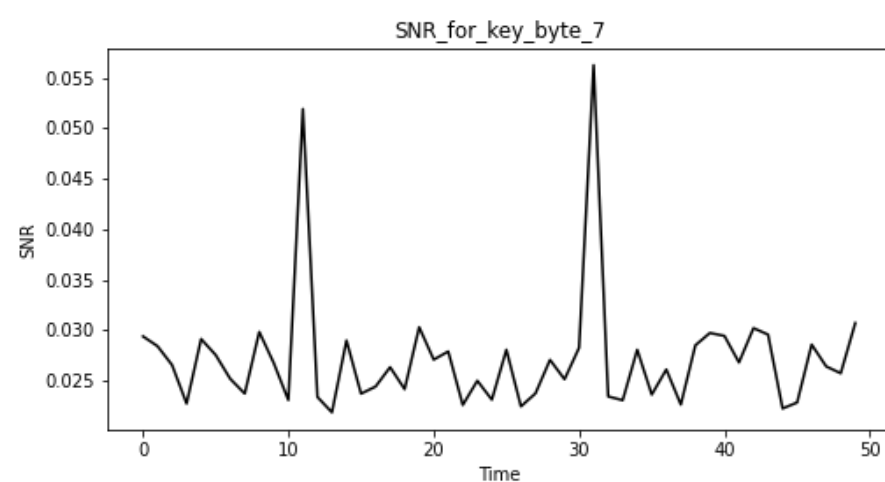
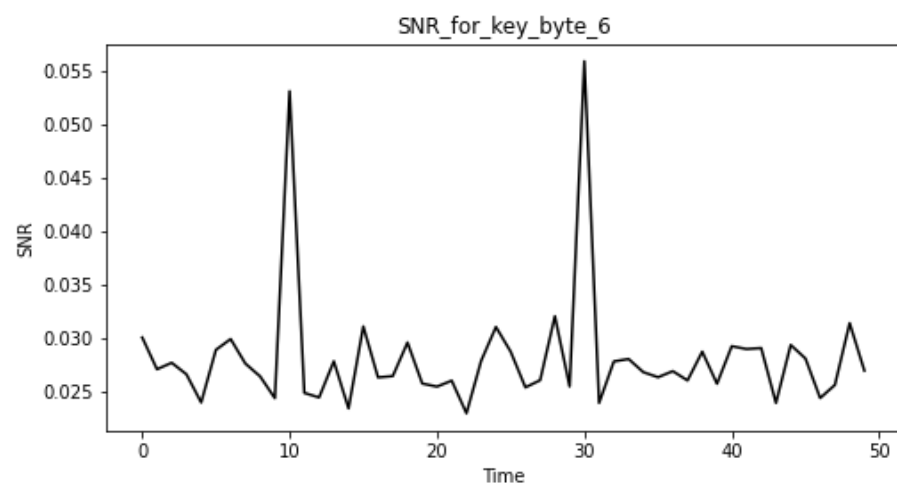




c. Compute the whole SNR and plot the result.

The following figures correspond to the SNR of each of the plaintext bytes:





Question 3

Execution time	26.5757 secs
Extracted Keys	237, 58, 24, 116, 22, 40, 132, 182, 197, 231, 224, 64, 215, 78, 87, 187
Processor	AMD Ryzen 9 5900HX, 3.30Ghz, 8 Core(s), 16 Logical Processors with Nvidia GeForce RTX 3060
Memory	32GB
OS	Windows 11