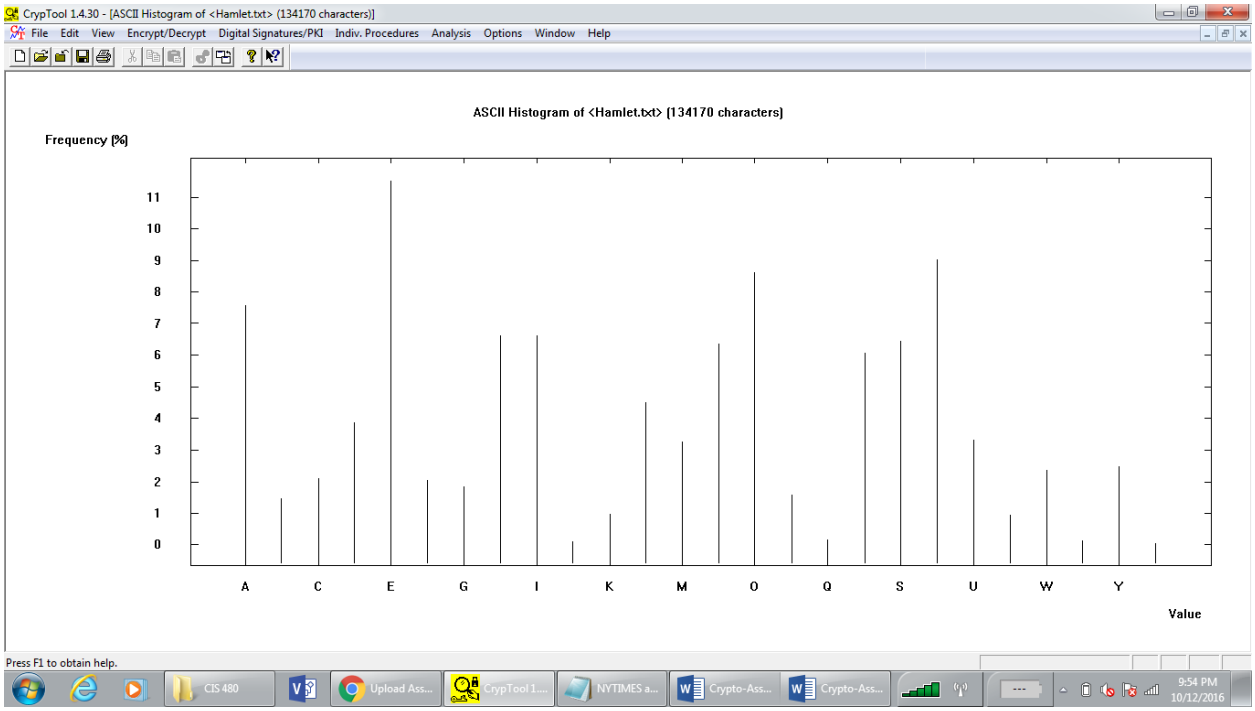
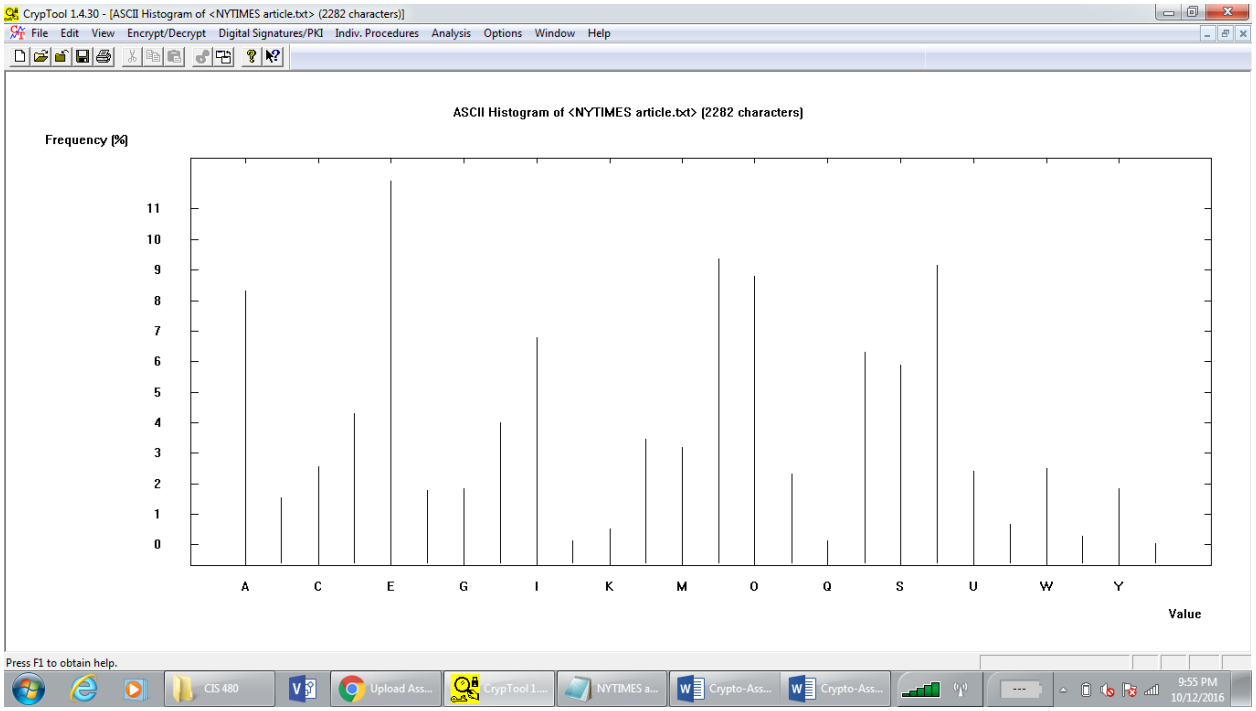
Crypto Assignment Outcome

Task 1 (4 points)

- (2 points) Create the histograms showing in the graphical form the relative frequency of letters in two prepared texts. Provide the two histograms in screen shots. For this, go to Analysis > Tools for Analysis.
    - Hamlet
    - 

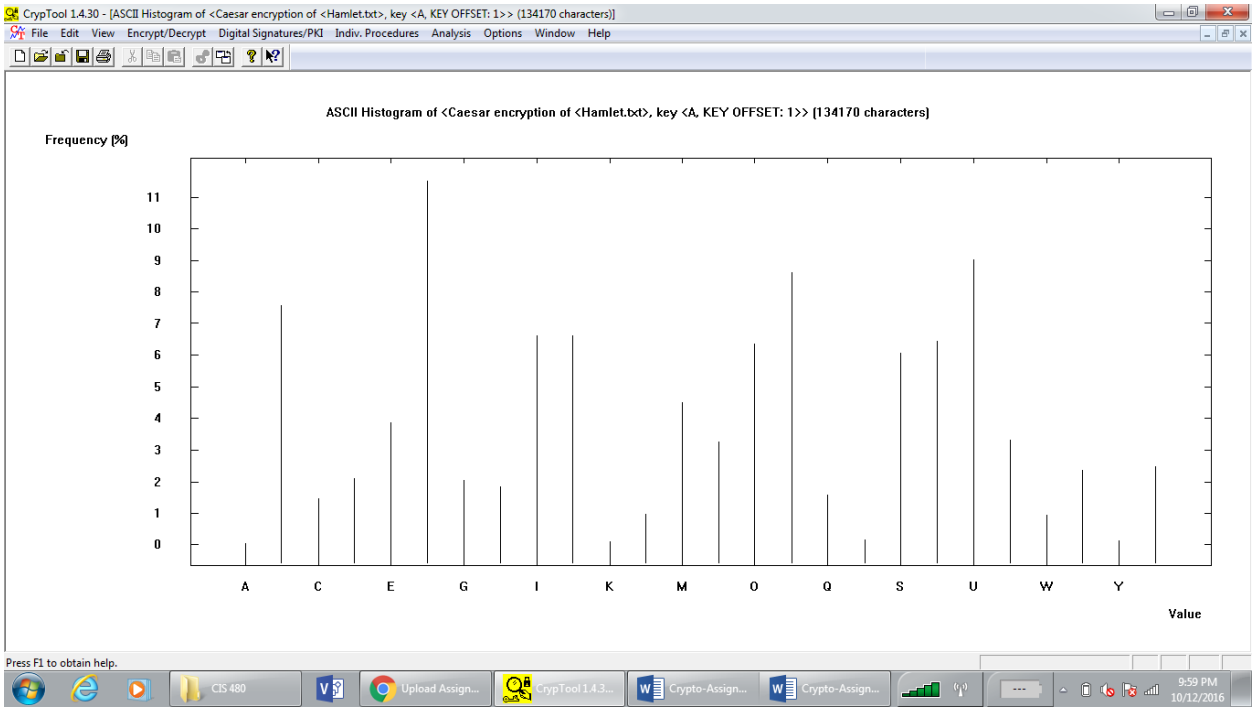
    - NYTIMES



- (2 points) Do the two histograms depend significantly on the text documents you have provided?
    - Both of the histograms are very similar which makes me think that they don't depend on the text document very much.

Task 2 (4 points)

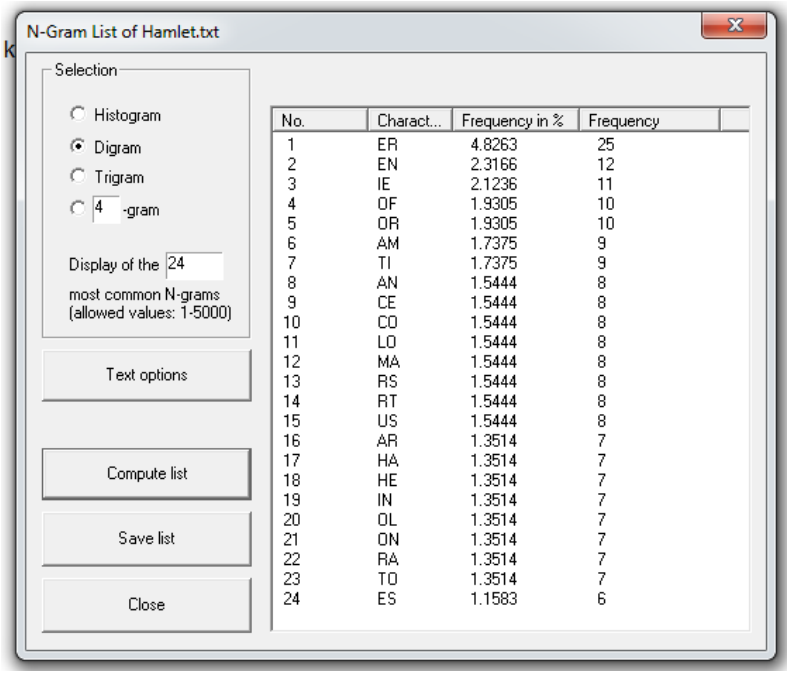
- (2 points) What are the characteristic features of the obtained distribution compared with the result in Task 1? Provide a screen shot to answer the question.
    - Bars for each letter has shifted to the right which minor changes in frequency.

- 

- (2 points) How can you use the above features in cracking the key?
  - The shift can be used to see how the letters were moved. From this we can see that letters were shifted to the left by 1 letter. This information can be used to find the key

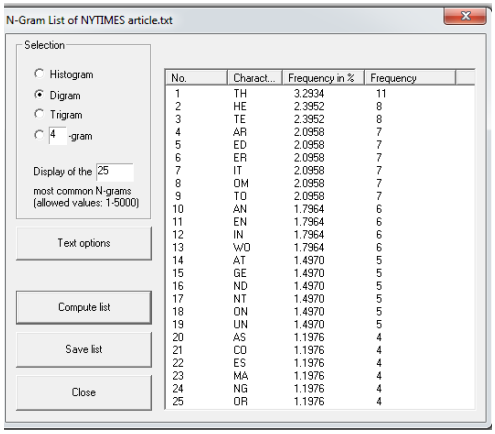
Task 3 (4 points)

- (1.5 points for Hamlet.txt) Summarize your observation of the frequency distribution. Also, provide a screenshot of the frequency distribution.



Certain character combinations are used more often than others. In this case, ER, EN, IR etc are the most used ones. Difference in frequency for character combinations is huge.

- (1.5 points for a NYT article) Summarize your observation of the frequency distribution. Also, provide a screenshot of the frequency distribution.

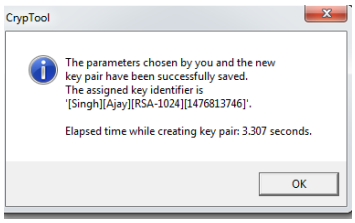


Characters are close to each other in the frequency.

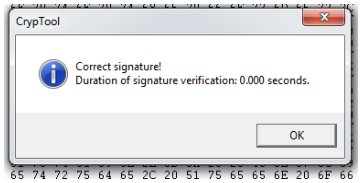
- (1 point) Compare and contrast the two frequency distributions.
  NYT had frequency levels that were close to each other. There wasn't big difference in what characters are used unlike the hamlet text. Where highest used character was 25 and lower end being 6.

Task 4 (4 points)

- (2 points) Attach a screen shot that shows the successful creation of the key pair.

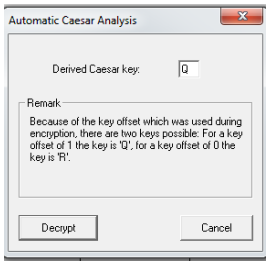


- (2 points) Attach a screenshot that displays the signature verification.



Task 5 (4 points)

- (1 points) List the cipher and the key for Ciphertext 1.
  Caeser, Key: Q



- (1 points) List the cipher and the key for Ciphertext 2.
  Vignere
- (2 points) List the cipher and the key for Ciphertext 3.
  Substitution, Key: QWERTYUIOMASDFGHJKLZXCVBNP