TSN3251 (TSC2211): Assignment (BASH Scripting)

This assignment is to be done in a group of 4 students. Students do no need to belong to neither the same course code or to the same tutorial section.

This assignment is on the various components that are required to make up the Hill Cipher. For the Hill Cipher, we assume that we are only going to use a 2x2 key (4 letter key). For that, we need the following components:

- A letter to number translator, i.e. A -> 0, E -> 4, 3 -> D, 25 -> Z, etc. (1 student, to do integration as well)

- A function for encryption. (1 student)

- A function for decryption, must be able to handle the modulo of a negative number (2 students)

The following is expected as the outcome of the assignment.

- Report: Write a technical report on the design and the details of the assignment. You can include things (not necessary) like UML, Flow Charts, Project Planning, Function description, etc. The report should also include an explanation on Hill Cipher (in your own words) with an example and what kind of possible attacks can be performed on it. Please ensure that you have your references clearly stated. Following which, the report should also include a section on how to use your code.
***** submit a hardcopy report, also submit your softcopy report as well as the code in a CD/DVD.**

- Demonstration: You are expected to demonstrate your solution which has to be written in BASH (Note: No other language is allowed). For the demonstration; how well you organize, narrate and demonstrate it will be the evaluated.

Marking Guide

- Report Submission (4%)
The expected report should be bound, well formatted and should be around 10 - 20 pages long. Marks will also be awarded for clarity.

- Report Content and Code Clarity (7%)
Proper flow of the report, from introduction to conclusion is expected. There is not fixed expectations on the content and it is up to the team to work this out. Also, a high percentage of the marks will be on the code, the design and the explanation behind it.

- Demonstration (4%)
The expectation is a 5 – 10 minutes demonstration. It is expected that the implement code is clearly explained in the report and tally with the demonstration.

***submit by week 12, during lecture time.

***demonstration start week 12/13.