ET2595 Network and System Security

Crypto

Assignment 1

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Gattupalli Monica

(moga20@student.bth.se)

(19991130-5002)

Task-1: Enigma Encoding

In task to we the enigma tools to convert the given plain text to cipher text by using the key.

Link to enigma tool **https://cryptii.com/pipes/caesar-cipher.**

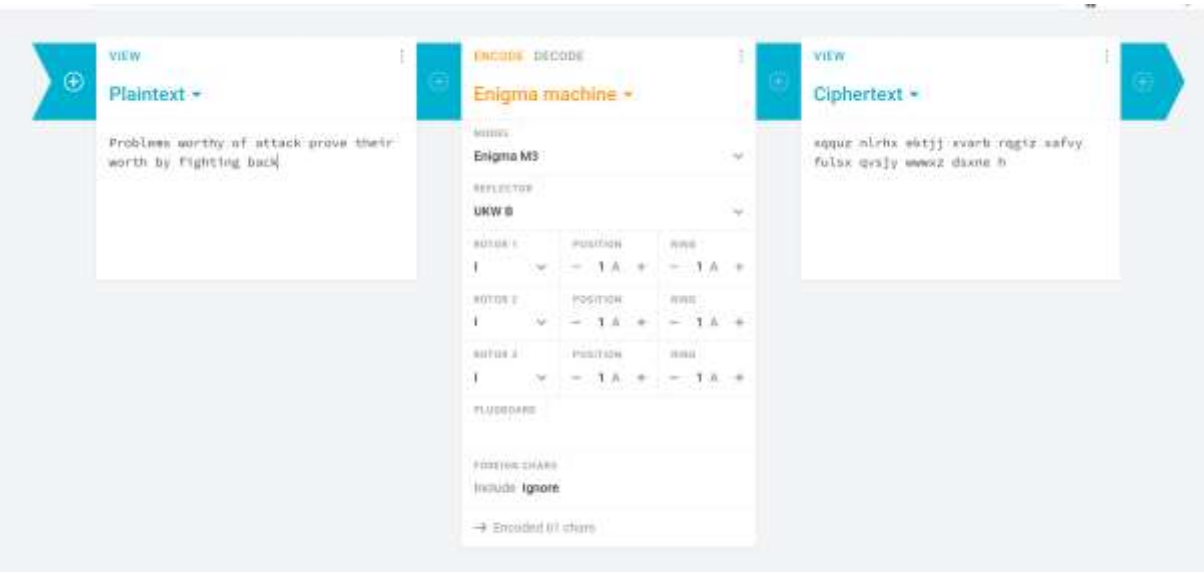


Figure-1: enigma encoding.

Task-2: Enigma Decoding

cipher text: “xqquz nlrhx ektjj xvarb rqgiz xafvy fulsx qvsjy wwwxz dsxne h”

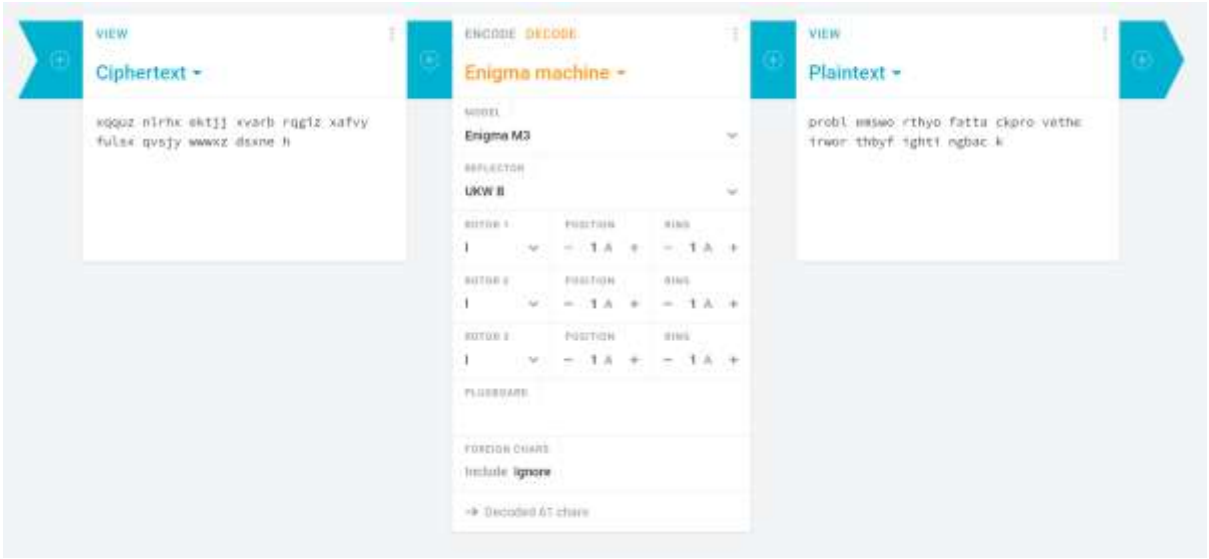


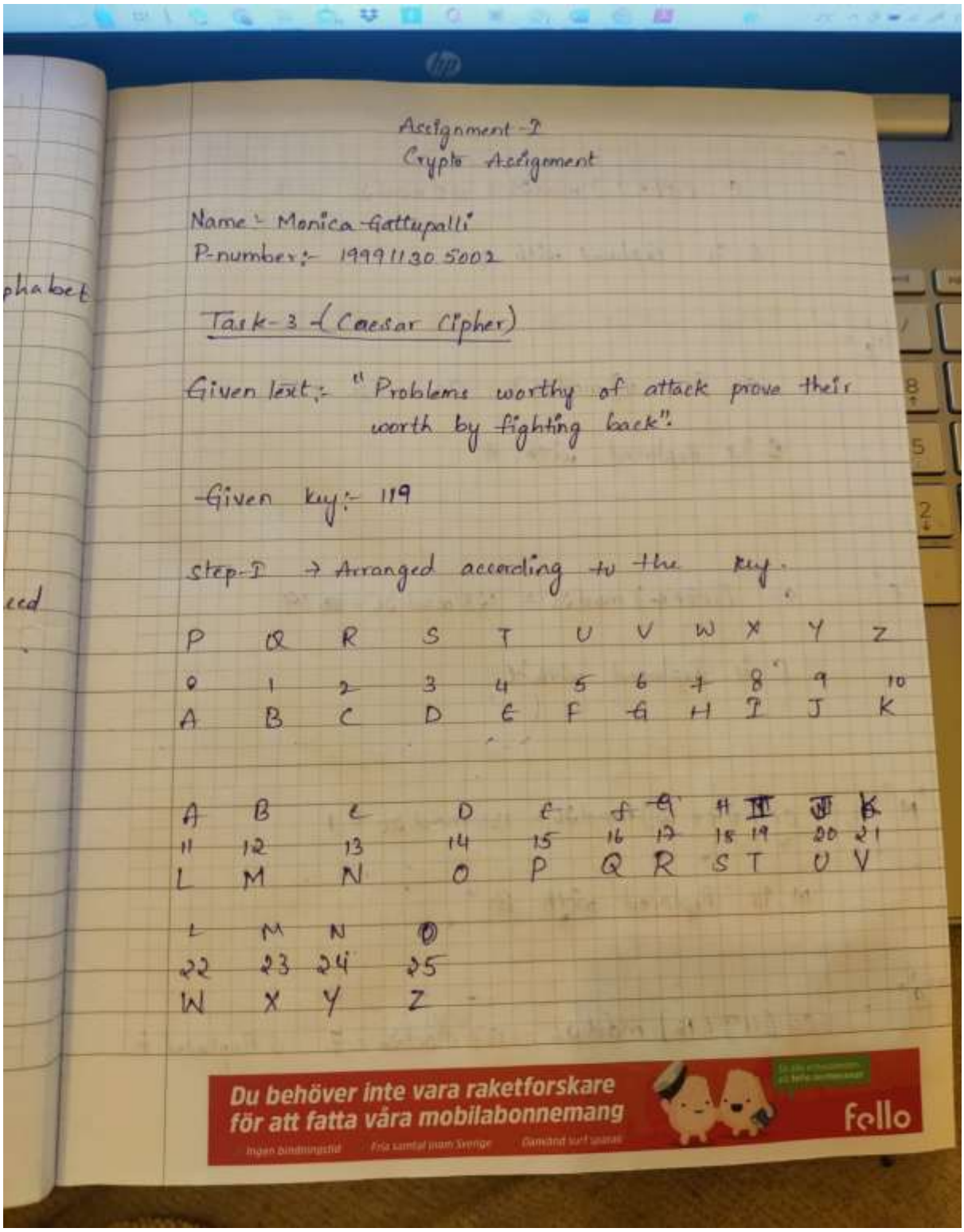
Figure-2: enigma decoding.

Plain text: “probl emswo rthyo fatta ckpro vethe irwor thbyf ighti ngbac k”

According to my personal number, the plain text, keys and the cipher are given for both the technique and the below are the tasks performed for the encryption and decryption

Task-3: Caesar cipher encryption

The task -3 is Caesar cipher encryption is performed, I need to encrypt the given plain text by using the key the below figure gives the plain text, key, and cipher text.



step II

by using formula;

$$c = [k + p] \bmod 26$$

c :- cipher, k = key, p = value of the alaphabet

let's use the formula for "Problems"

"P"

$c = [119 + 15] \bmod 26$

$= 134 \bmod 26$

$= 4$

So 4 is e in the alaphabets so p is Replaced with e $\boxed{p = e}$

"R"

$c = [119 + 17] \bmod 26 = [136 \bmod 26] = 6$

R is replaced with G

"O"

$c = [119 + 14] \bmod 26 = [133 \bmod 26] = 3$

O is replaced with D

"B"

$C = [119 + 1] \bmod 26 = 120 \bmod 26 = 16$

B is Replaced with q

"t"

$C = [119 + 11] \bmod 26 = 130 \bmod 26 = 0$

t is Replaced with A

"E" $C = [119 + 4] \bmod 26 = 123 \bmod 26 = 19$

E is Replaced with t

"M" $C = [119 + 12] \bmod 26 = 131 \bmod 26 = 1$

M is Replaced with B

"g" $C = [119 + 18] \bmod 26 = 137 \bmod 26 = 7$ S Replaced h

after following this formula for all we will get the encrypted text is

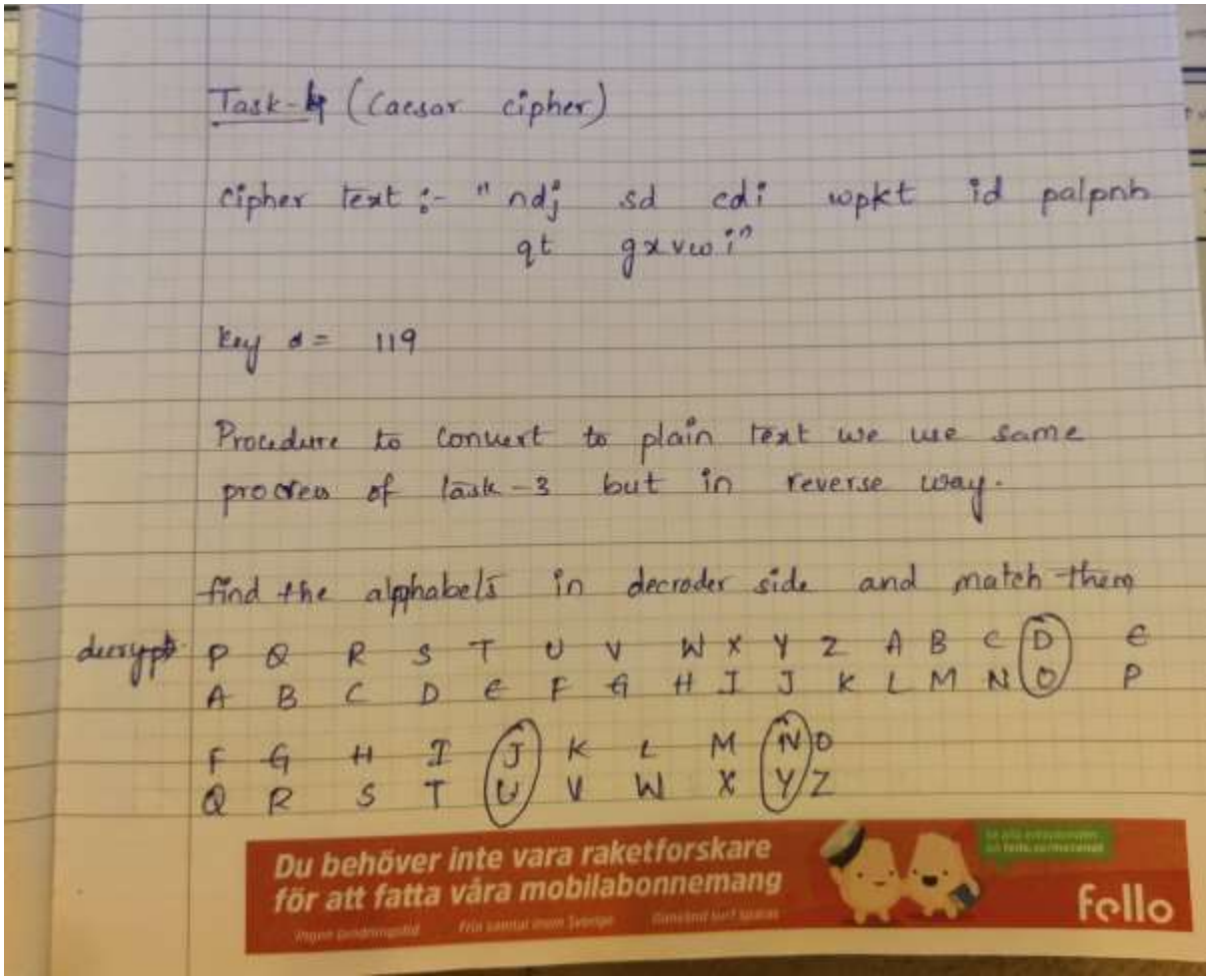
"

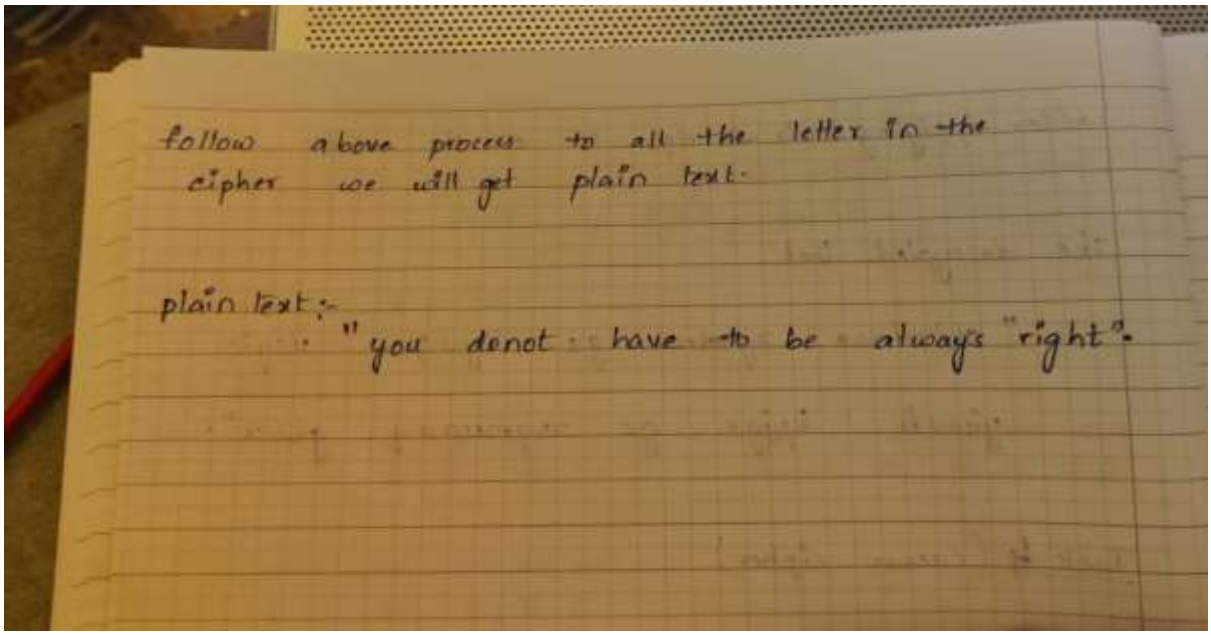
eqdqatbh ldgiwn du piiprz. eqdkt iwtxq

ldgiw qn uxvwizcv qprz".

Task-4: Caesar cipher decryption

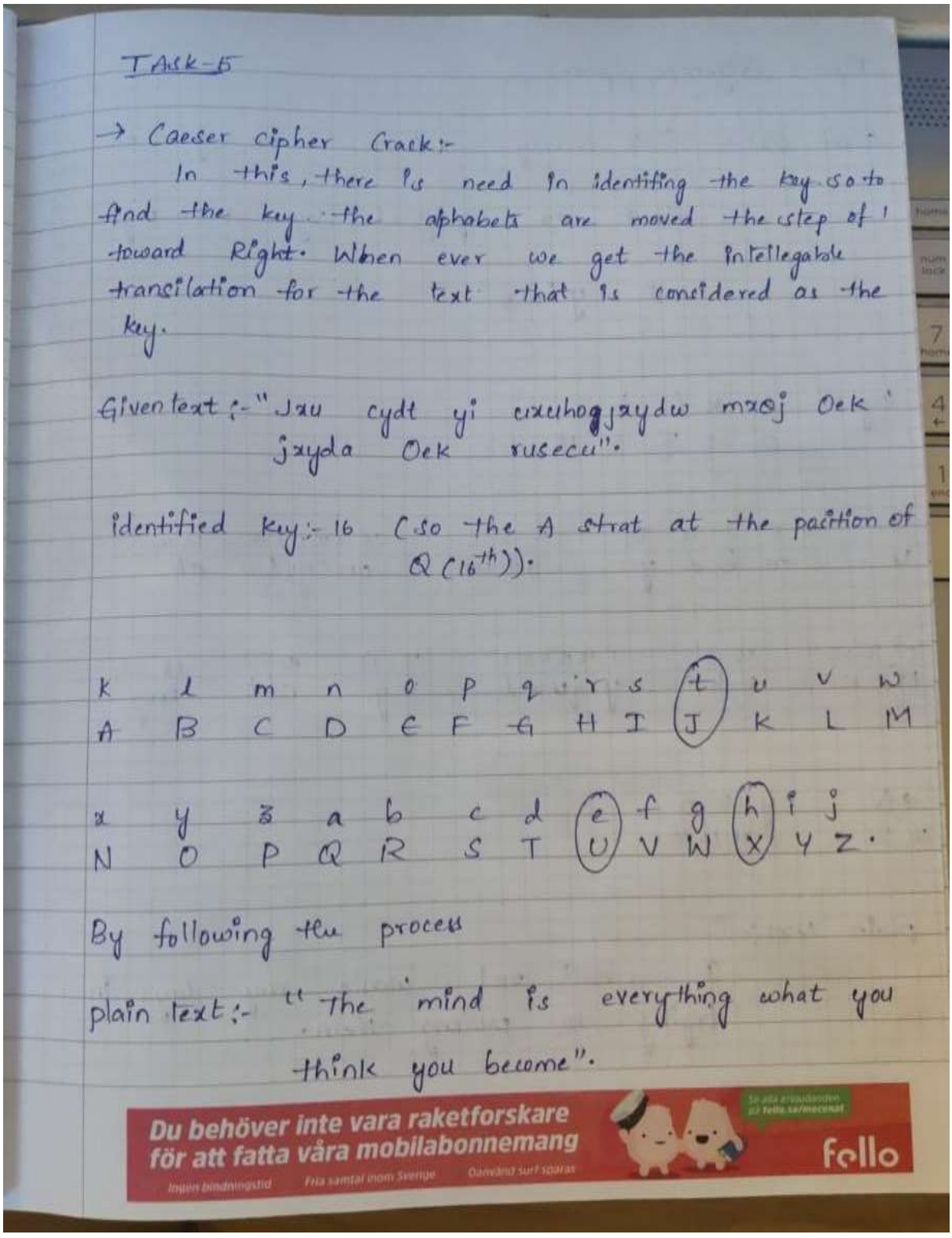
The task -4 is Caesar cipher decryption is performed, I need to decrypt the given cipher text by using the key the below figures give the plain text, key, and cipher text.





Task-5: Caesar cipher Crack

In this we need to identify the key to decrypt the given plain text, so to that alphabets are moved towards right by one step until the correct plain text is identified.



TASK-5

→ Caeser cipher Crack:-

In this, there is need in identifing the key so to find the key. the alphabets are moved the step of 1 toward Right. When ever we get the intellegable translation for the text that is considered as the key.

Given text:- "Jxu cydt yi uxuhoqjxydw mxoj Oek jxyda Oek rusecu".

identified key:- 16 (so the A strat at the position of Q (16th)).

k l m n o p q r s t u v w
A B C D E F G H I J K L M

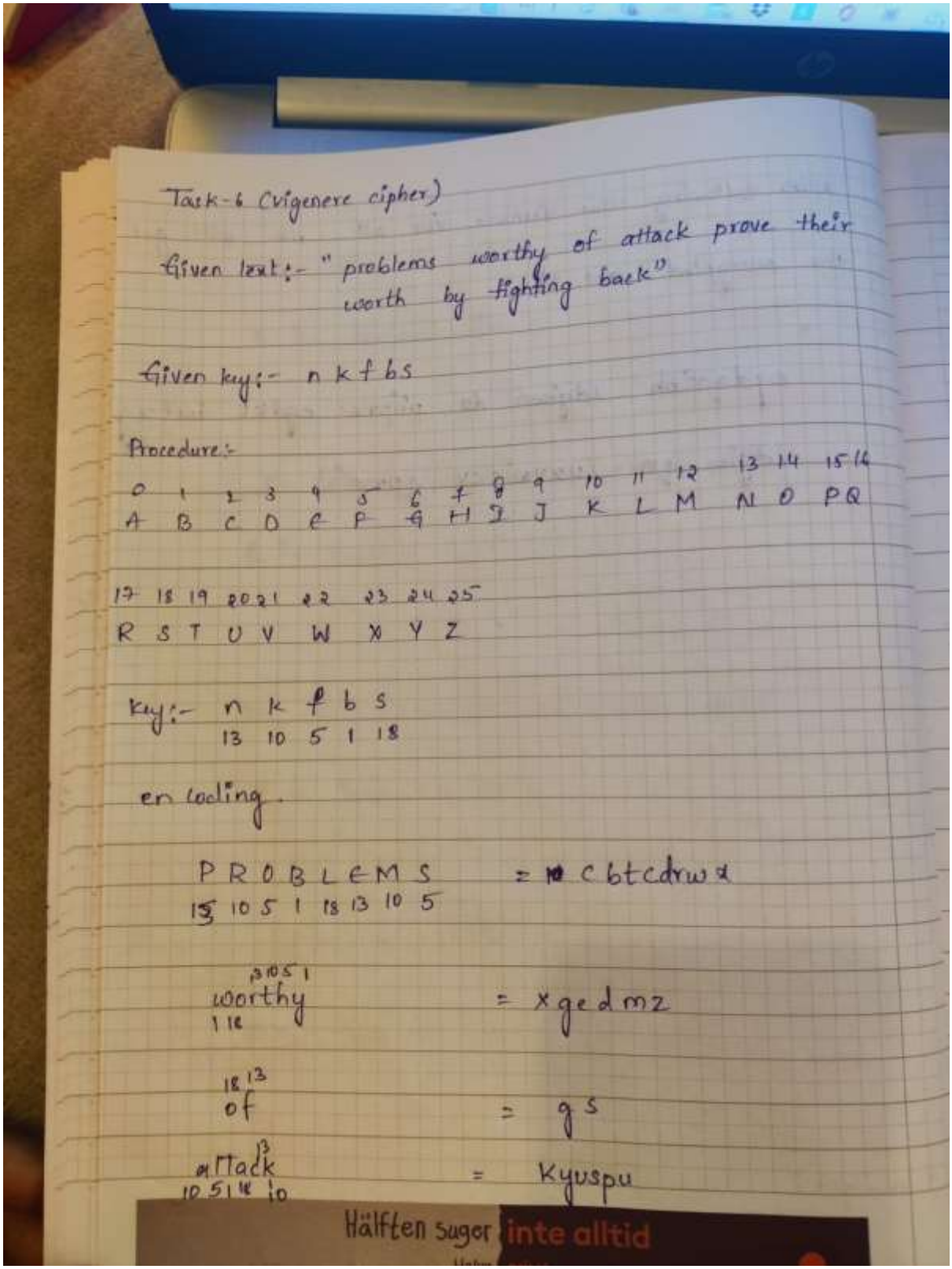
x y z a b c d e f g h i j
N O P Q R S T U V W X Y Z.

By following the process

plain text:- "The mind is everything what you think you become".

Task-6: Vigenère cipher encryption

The task-6 is Vigenère cipher encryption is performed, I need to encrypt the given plain text by using the key the below figure gives the plain text, key, and cipher text.



after applying this technique to all the words.

The decrypted text

" cbtcdrwx xgaadmz gs kyuspu usgio

yiwvb bpjgr gz xvqmuaaq gbux".

Task - 7 Vigenère cipher decryption

The task -7 is Vigenère cipher encryption is performed, I need to decrypt the given cipher text by using the key the below figures give the plain text, key, and cipher text.