End Semester Lab Examination, Febuary-2023

CSE 1001: Introduction to Computer Programming

SET-D

Please note that Grading will be strict and without compromise. Hence, you are kindly requested to go through the instructions thoroughly

Problem (Part-1)

Let you have an ATM card having 4 digit PIN number. You need to send it to your younger brother but it need to be sent in a secret manner by using the below given method.

Let you have an ATM PIN number=3479.

1.Convert each digit of the PIN number to it corresponding ASCII value.

ASCII value of "0"=48

ASCII value of "1"=49

….

ASCII value of "9"=57

2.Using a secret key encrypt your ATM PIN number.

Key Range(1-10)

Let key =8

ASCII of "3" =51, add the key value i.e 51+8=59(equivalent character is ';')

ASCII of "4"=52, add the key value i.e 52+8=60(equivalent character is '<')

ASCII of "7" =55, add the key value i.e 55+8=63(equivalent character is '?')

ASCII of "9"=57, add the key value i.e 57+8=65(equivalent character is 'A')

So, the encrypted PIN number of 3479= ;<? A

So, the encrypted PIN number ";<? A" will be sent to your younger brother with key 8

Part-1[9 Points]

1.[1 points]

Read the 4 digit PIN number and store it in a variable called PIN and read the key and store it in variable called key.

2. [3 points] Convert each digit of the PIN number to it corresponding ASCII value. Add ASCII value of '0' i.e 48 to each extracted digit of the PIN number.

e.g: 3+48(ASCII value of '0') = 51

3. [5 points] Add the key value to the converted ASCII value of extracted digits and store the corresponding character value in an character array named as encrypted_Array[].

e.g: Encrypted ASCII value of 3=Converted ASCII value of 3+Key

encrypted_ASCII=51+8=59

To convert 59 to its equivalent character value, use explicit typecasting
(char)encrypted_ASCII

encrypted_Char=(char)encrypted_ASCII ecnypted

char of 59=';'

So the encrypted Array is given below:

;	**<**	**?**	**A**

Problem (Part-2)

Your younger brother will receive the encrypted characters with the key. By using the key he will find the actual PIN number. So the encrypted character array obtained in part 1 act as input in this part. So the encrypted Array is given below: -

;	**<**	**?**	**A**

And the Key is 8.

Part-2[6 Points]

1.[2 points]

Extract each character from the array and find its corresponding ASCII value.

e.g: ASCII value of ';' = 59

2.[2 points]

By using the key decrypt the character.

e.g 59(ASCII value of ';') - 8(key)=51

3.[2 points]

Find the actual PIN number.

To find the actual digit use explicit type casting (char)51 i.e nothing but 3 Similarly find the complete PIN number and display it.

More over for the above Problem (part-1 and part 2) create a java file named as Secret_PIN.java

Use meaningful identifiers to enhance readability of your code. Please don't plagiarize.

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