Lab Assignment 6

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CPSC1150 - Section 1

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Exercise Title: List Prime Palindrome Numbers

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Department: CPSC

**Program Quadratic Formula**

File Name: Lab06.java

Purpose: To encode and decode a message.

Input: Either a encoded or decoded message.

Output: encoded to decoded message or vice versa.

Technical Information:

Compiler: Java SDK 1.7

Computer: Intel Celeron 2955U 1.4GHz, 2.00 GB of RAM

Language: Java

Source Code:

Attached

Program Logic (Pseudocode)

(definitions)

userInput: call getInput

0.1: START

1. operation = userInput(options: encode or decode)
2. coding = userInput(int coding)
3. input = userinput(string input)
4. if operation is encoding:

call encodeMessage(input, coding)

1. else if operation is decoding:

call decodeMessage(input, coding)

END

**getInput**

(definitions)

0.1: userInput = user input from menu

START

1. input = userInput
2. return input

END

**encodeMessage**

(definitions)

0.1: input = user input

0.2 maxInClass = max hex value of a class of letters eg. S and A would be 90(Z)

0.3 minInClass = min hex value of class eg. G would be 65(A)

START

1. message = input
2. for each character in message

if character + coding < maxInClass

print minInClass + remainder of (maxInClass / (character + coding))

else

print character + coding

END

**decodeMessage**

(definitions)

0.1: input = user input

0.2 maxInClass = max hex value of a class of letters eg. S and A would be 90(Z)

0.3 minInClass = min hex value of class eg. G would be 65(A)

START

1. message = input
2. for each character in message

if character - coding > minInClass

print maxInClass - remainder of ((character + coding)) / maxInClass)/

else

print character - coding

END

**Test Cases:**

Encode/Decode

FORMAT: Input – coding – method

Test Case 1:

Input: ABC – 4 - (encoding)

Returns: 010001010100011001000111

Test Case 2:

Input: ZXC – 9 - (encoding)

Returns: 010010110100100101001100

Test Case 3a:

Input: AXCV – 8 – (encoding)

Returns: 01001001010010000100101101000110

Test Case 3b:

Input: 01001001010010000100101101000110 – 8 – (decoding)

Returns: AXCV

Test Case 4a:

Input: ABC1297SDERSA#$% - 8 – (encoding)

Returns: 01001001010010100100101100111001001100100011100100110111010000110100110001001101010110100100001101001001001000110010010000100101

Test Case 4b:

Input: 01001001010010100100101100111001001100100011100100110111010000110100110001001101010110100100001101001001001000110010010000100101 – 8 – (decoding)

Returns: ABC12***1***7SDERSA#$%

*Not quite but pretty close… :/*