Due Date:	By 11:59pm Friday February 5, 2021
Evaluation:	2% of final mark (see marking rubric at the end of handout)
Late Submission:	none accepted
Purpose:	The purpose of this assignment is to help you learn Java identifiers, assignments, input/output and if and if/else statements.
CEAB/CIPS Attributes:	Design/Problem analysis/Communication Skills

General Guidelines When Writing Programs:
Include the following comments at the top of your source codes

```
// ------------------------------------------------------
// Assignment (include number)
// Written by: (include your name and student id)
// For COMP 248 Section (your section) – Winter 2021
// ------------------------------------------------------
```

- In a comment, give a general explanation of what your program does. As the programming questions get more complex, the explanations will get lengthier.
- Include comments in your program describing the main steps in your program. Focus in your comments rather on the why than the how.
- Display a welcome message.
- Display clear prompts for users when you are expecting the user to enter data from the keyboard.
- All output should be displayed with clear messages and in an easy to read format.
- End your program with a closing message so that the user knows that the program has terminated.

Question 1 - Password Encryption (4 pts)
Write a complete program that ask the user prompt a number with **6 digits** and output the encrypted password.
Your program should behave as follow:
1. Display a welcome message.
2. Ask the user for the input number.
3. Use a constant variables to store the value 10 in the program.
4. Display the encrypted number, which is equivalent by
   1) Swap the 1st and 6th digits
   2) Replace the second digit with the remainder of the second digit divided by 2.
   3) Add 1 to the third digit of your input.
   4) Replace the fourth digit with the remainder of the third digit divided by 3.
   5) Swap the 4th and 5th digits.
5. Display a farewell message, so that the user knows that the program has terminated normally.

Following are the sample screen shots to illustrate the expected behavior of your program. Assume a perfect user who will always enter a correct input with 6 digits.

Note: Your program must display the same information and formatted the same.

```
*****************************************
    Welcome to Password Encryption Program
*****************************************

Please enter a 6-digits number : 123456

Generating the encrypted number...

The encrypted 6-digits number is : 604511

Thank you for using Password Encryption Program!
```

Figure 1. Sample output of Question#1

```
*****************************************
    Welcome to Password Encryption Program
*****************************************

Please enter a 6-digits number : 009871

Generating the encrypted number...

The encrypted 6-digits number is : 110710

Thank you for using Password Encryption Program!
```

Figure 2. Sample output of Question#1

Question 2 – Letter Encryption (8 points)

Write a program that prompts the user for two words (W1 and W2) with 3 characters.

Your program should behave as follow:
1. Display a welcome message.
2. Ask the user for the inputs of two words.
3. Display the lengths of both words.
4. Use a new string to merge two words. The new word should follow:
   a. The sequence: 3rd character of W1 + 3rd character of W2 + 1st character of W1 + 1st character of W2 + 2nd character of W1 + 2nd character of W2, display the new generated word.
   b. Swap the 2nd and 6th characters of the new word.
   c. Swap the 1st and 5th characters of the new word.
5. Display the new word.
6. Display a farewell message, so that the user knows that the program has terminated normally.

Restrictions: No looping statements allowed (or needed). This question requires the use of the functions: length(), substring().

Following are the sample screen shots to illustrate the expected behavior of your program. Your program should work with any word with 3 characters entered by the user. Assume a perfect user who will always enter a word with exactly 3 characters.

**Note:** Your program must display the same information and formatted the same.

```
************************************************
   Welcome to Letter Encryption Program
************************************************

Enter the first word with 3 characters: abc
Enter the second word with 3 characters: cde

The length of the word abc is 3.
The length of the word cde is 3.

The encrypted word is: ceacbd.

Generating the encrypted word...

The encrypted word is: bdacce.

Thank you for using Letter Encryption Program!
```

Figure 3. Sample output of Question#2

```
************************************************
   Welcome to Letter Encryption Program
************************************************

Enter the first word with 3 characters: 12?
Enter the second word with 3 characters: p)+

The length of the word 12? is 3.
The length of the word p)+ is 3.

The encrypted word is: ?+1p2).

Generating the encrypted word...

The encrypted word is: 2)1p?+.

Thank you for using Letter Encryption Program!
```

Figure 4. Sample output of Question#2

Submitting Assignment 1

Please check your course Moodle webpage on how to submit the assignment.

Evaluation Criteria for Assignment 1 (20 points)

Source Code		
Comments for all 2 questions (5 pts.)		
Description of the program (authors, date, purpose)	2	pts.
Description of variables and constants	1	pt.
Description of the algorithm	2	pts.
Programming Style for all 2 questions (3 pts.)		
Use of significant names for identifiers	1	pt.
Indentation and readability	1	pt.
Welcome Banner or message/Closing message	1	pt.
Question 1 (4 pts.)		
Prompt and display the user's input	1	pt.
Follow the rules to encrypt the password	2	pts.
Display the correct result	1	pt.
Question 2 (8 pts.)		
Prompt user's inputs	1	pt.
Display the length of two words	1	pt
Follow the rules to generate the encrypted words	4	pts.
Display result	2	pts.
TOTAL	**20**	**pts.**