Due Date:	By 11:59pm October 15, 2021
Evaluation:	3% 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, selection and flow of control statements: if, if/else, and for loops
CEAB/CIPS Attributes:	Design/Problem analysis/Communication Skills

Please note: *you are NOT allowed to post the assignment/solution anywhere on the Internet. Intellectual Property rights are reserved. If any similar cases are found via your account or IP, your submission will NOT be considered and will be reported immediately.*

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) – Fall 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: University Registration Program during Pandemic (6 pts)
In this question, you will write a registration program for new coming Concordia University students.

Your program should follow the following rules:
- Prompt the new student to enter name, date of birth, vaccine passport and department.
- The student name should be entered as "***LastName, FirstName***" (separated by comma, and with first letter of last name and first name upper case letters). Please note the whole name should be saved in one string.
- The date of birth and department should be saved in two separate strings.

- The vaccine passport should be save as a Boolean type. If it is no, your program should display the info " *Hope you will get your vaccine passport soon! Take care!* "
- Your program should be able to generate a 7-digit random number as student ID.
- Display welcome & closing messages.

Hint: you may use *Math.random()* to generate a random number. Please refer to HERE.

The following are samples of screen shots to illustrate the expected behavior of your program. Your program must display the <u>same information with the same format</u>.

```
++++++++++++++++++++++++++++++++++++++++++++++
   Welcome to Concordia University
++++++++++++++++++++++++++++++++++++++++++++++

Are you a new coming student at Concordia? (yes or no)no

Welcome back! Hope you are having a great semester!

Thank you for using this Program!
```

Figure 1: Sample1 output of Question1.

```
++++++++++++++++++++++++++++++++++++++++++++++
   Welcome to Concordia University
++++++++++++++++++++++++++++++++++++++++++++++

Are you a new coming student at Concordia? (yes or no)yes

Please enter your name (Lastname, Firstname seperated by comma): Yang,Lily

Please enter your date of birth: 1998-03-16

Do you have covid19 vaccine passport? (true or false): true

Please enter your department: CSSE

Congratulations, Lily Yang! You have successlly registered at Concordia University!

Your student ID is 8011049.

Thank you for using this Program!
```

Figure 2: Sample2 output of Question1.

```
+++++++++++++++++++++++++++++++++++++++++++++++
   Welcome to Concordia University
+++++++++++++++++++++++++++++++++++++++++++++++

Are you a new coming student at Concordia? (yes or no)yes

Please enter your name (Lastname, Firstname seperated by comma): Mackeniz,Tom

Please enter your date of birth: 2002-09-08

Do you have covid19 vaccine passport? (true or false): false

Please enter your department: JMSB

Congratulations, Tom Mackeniz! You have successlly registered at Concordia University!

Your student ID is 4050179.

 Hope you will get your vaccine passport soon! Take care!

Thank you for using this Program!
```

Figure 3: Sample3 output of Question1.

Questions #2: Covid-19 Vaccine Appointment Booking Program (8 pts).

In this question, you will write a program to book a Covid-19 vaccine appointment.

Your program should follow the following rules:
- Prompt the user to enter the choice based on the vaccine menu.
- Display the available time slots for the chosen vaccine and prompt user for the time.
- Ask the user for the option of the 1st or 2nd shot.
- Display a confirmation if the appointment is booked successfully, otherwise, remind the user to make another appointment later.

Vaccine	Location	Schedule
1. Pfizer	1. Pharmaprix 2. Jean Coutu	2:00 - 2:15, 2:20 - 2:35, 2:40 - 2:55, 3:00 - 3:15 pm
2. Moderna	1. Pharmaprix 3. Uniprix Clinique 4. Health Center	2:00 - 2:15, 2:20 - 2:35, 2:40 - 2:55, 3:00 - 3:15 pm
3. AstraZeneca	2. Jean Coutu 3. Uniprix Clinique	2:00 - 2:15, 2:20 - 2:35, 2:40 - 2:55, 3:00 - 3:15 pm
4. Johnson & Johnson	4. Health Center	2:00 - 2:15, 2:20 - 2:35, 2:40 - 2:55, 3:00 - 3:15 pm
5. Sinovac	Not available	2:00 - 2:15, 2:20 - 2:35, 2:40 - 2:55, 3:00 - 3:15 pm
6. Gamaleya	Not available	2:00 - 2:15, 2:20 - 2:35, 2:40-2:55, 3:00 - 3:15 pm
7. Exit		

- Your program should check the user's inputs are valid.
- Your program should be able to ask user's new choice if the user does not book the appointment successfully.

- If the vaccine is not available, your program should display "*Sorry, the vaccine is currently not available now!*".
- Your program should display the confirmation info if the appointment is booked successfully.
- Display welcome/closing messages.

The following are samples of screen shots to illustrate the expected behavior of your program. Your program must display the same information with the same format.

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++
   Welcome to Covid19 Vaccine Appointment Program!
++++++++++++++++++++++++++++++++++++++++++++++++++++++
Here is the Covid-19 vaccine menu:
     1. Pfizer
     2. Moderna
     3. AstraZeneca
     4. Johnson&Johnson
     5. Sinovac
     6. Gamaleya
     7. Exit
++++++++++++++++++++++++++++++++++++++++++++++++++++++

Please enter your choice (1-7): 9

That is a wrong input. Please try again!
Please enter your choice (1-7): 0

That is a wrong input. Please try again!
Please enter your choice (1-7): 5
Sorry, Sinovac is not available now!
Your appoinment is not booked successfully! Would you like to try again? (yes or no)
yes

Please enter your choice (1-7): 6
Sorry, Gamaleya is not available now!
Your appoinment is not booked successfully! Would you like to try again? (yes or no)
yes

Please enter your choice (1-7): 7

Your appoinment is not booked successfully! Would you like to try again? (yes or no)
no

Thank you for using Covid19 Vaccine Appointment Program!
```

Figure 4: Sample1 output of Question2.

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++
   Welcome to Covid19 Vaccine Appointment Program!
++++++++++++++++++++++++++++++++++++++++++++++++++++++
Here is the Covid-19 vaccine menu:
    1. Pfizer
    2. Moderna
    3. AstraZeneca
    4. Johnson&Johnson
    5. Sinovac
    6. Gamaleya
    7. Exit
++++++++++++++++++++++++++++++++++++++++++++++++++++++

Please enter your choice (1-7): 1
Your choice is: Pfizer.

Please choose the location of vaccine Pfizer:
        1 - Pharmaprix
        2 - Jean Coutu
Please enter your choice: 2

Please choose the time slots :
        1 - 2:00 - 2:15
        2 - 2:20 - 2:35
        3 - 2:40 - 2:55
        4 - 3:00 - 3:15
        5 - Quit
Please enter your choice (1-5): 5

Your appoinment is not booked successfully! Would you like to try again? (yes or no)
yes

Please enter your choice (1-7): 5
Sorry, Sinovac is not available now!
Your appoinment is not booked successfully! Would you like to try again? (yes or no)
no

Thank you for using Covid19 Vaccine Appointment Program!
```

Figure 5: Sample2 output of Question2.

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++
   Welcome to Covid19 Vaccine Appointment Program!
++++++++++++++++++++++++++++++++++++++++++++++++++++++
Here is the Covid-19 vaccine menu:
    1. Pfizer
    2. Moderna
    3. AstraZeneca
    4. Johnson&Johnson
    5. Sinovac
    6. Gamaleya
    7. Exit
++++++++++++++++++++++++++++++++++++++++++++++++++++++

Please enter your choice (1-7): 2
Your choice is: Moderna.

Please choose the location of vaccine Moderna:
        1 - Pharmaprix
        3 - Uniprix Clinique
        4 - Health Center
Please enter your choice: 3

Please choose the time slots :
        1 - 2:00 - 2:15
        2 - 2:20 - 2:35
        3 - 2:40 - 2:55
        4 - 3:00 - 3:15
        5 - Quit
Please enter your choice (1-5): 3
Please enter the 1st or 2nd vaccine shot (1 or 2): 2

Your booked appointment is: Moderna, 2nd dose.
Your schedule is: 2:40 - 2:55 @ Uniprix Clinique.

Thank you for using Covid19 Vaccine Appointment Program!
```

Figure 6: Sample3 output of Question2.

Submitting Assignment 2

- Zip the source code (the .java files only please) of this assignment.
- Naming convention for zip file: Create one zip file, containing the source files for your assignment using the following naming convention:
  - ➢ The zip file should be called *a#_studentID*, where # is the number of the assignment and *studentID* is your student ID number.
    For example, for the second assignment, student 123456 would submit a zip file named a2_123456.zip
- Submit your zip file on Moodle or e-Concordia course webpage.

Evaluation Criteria for Assignment 1 (20 points)

Source Code		
Comments for all 3 questions (3 pts.)		
Description of the program (authors, date, purpose)	1	pt.
Description of variables and constants	1	pt.
Description of the algorithm	1	pt.
Programming Style for all 3 questions (3 pts.)		
Use of significant names for identifiers	1	pt.
Indentation and readability	1	pt.
Welcome Banner/Closing message	1	pt.
Question 1 – 5 pts.		
Prompt user & read data	1	pt.
Determine the correctness of user's information (passport)	1	pt.
Generate 7-digit student's id	1.5	pts.
Display results	1.5	pts
Question 2 (9 pts.)		
Ask for & read input data	1	pt.
Check the valid inputs	1	pt.
Determine the vaccine choice	2	pts.
Determine the location and schedule	4	pts
Display the result	1	pt.
TOTAL	**20**	**pts.**