Concordia University
Computer Science & Software Engineering
Faculty of Engineering and Computer Science

Concordia University
COMP 248 – Summer 2021
Assignment 2

Due Date:	By 11:59pm Wednesday June 9, 2020
Evaluation:	6% 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 nested if and if/else statements, switch statements and non-nested loops.
CEAB/CIPS Attributes:	Design/Problem analysis/Communication Skills

General Guidelines When Writing Programs:
Refer to handout of assignment 1 for details.

Question 1 – Switch / nested selection statement (9.5 pts)

You are going to write a Java program to simulate the process of making an appointment for COVID-19 vaccine. Your program must prompt the user for an integer number to choose the vaccine name and the option for available time slots. If the user gives wrong input, your program should ask again until getting a correct input.

The input data and corresponding info of output data should be calculated in your program are listed in the table below.

Vaccine	Type	Dose
Pfizer	m-RNA	2
Moderna	m-RNA	2
AstraZeneca	Viral vector	2
Johnson & Johnson	Viral vector	1
Sinovac	Inactivated virus	2
Gamaleya	Viral vector	2

Location	Vaccine	Schedule
1. Pharmaprix	Pfizer, Moderna	2:00 – 2:15, 2:20 – 2:35, 2:40-2:55, 3:00 - 3:15 pm
2. Vaccination Center	Pfizer, Moderna	2:00 – 2:15, 2:20 – 2:35, 2:40-2:55, 3:00 - 3:15 pm
3. PJC Jean Coutu	AstraZeneca	2:00 – 2:15, 2:20 – 2:35, 2:40-2:55, 3:00 - 3:15 pm
4. Health Center	Johnson & Johnson	2:00 – 2:15, 2:20 – 2:35, 2:40-2:55, 3:00 - 3:15 pm
5. Uniprix Clinique	AstraZeneca	2:00 – 2:15, 2:20 – 2:35, 2:40-2:55, 3:00 - 3:15 pm

Your program should use parallel if statements (without else), nested-if, and switch statement, all at least once.

Following are some sample output to illustrate the expected behavior of your program. Your program should work for any input, not just the ones in the samples below. The text in green is user input. Be aware of the single or plural form of dose in the output.

```
-------****-------****-------****-------****-----
      Welcome to Vaccine Program!
-------****-------****-------****-------****-----

Here are some vaccine you could choose:
        1 - Pfizer
        2 - Moderna
        3 - AstraZeneca
        4 - Johnson&Johnson
        5 - Sinovac
        6 - Gamaleya
        7 - Quit

Please enter the digit corresponding to your option: 7

Thank you for using this program!!
```

Figure 1- Question1 Sample Output

```
-------****-------****-------****-------****-----
      Welcome to Vaccine Program!
-------****-------****-------****-------****-----

Here are some vaccine you could choose:
        1 - Pfizer
        2 - Moderna
        3 - AstraZeneca
        4 - Johnson&Johnson
        5 - Sinovac
        6 - Gamaleya
        7 - Quit

Please enter the digit corresponding to your option: 1
Here is the location for the vaccine you chose:
        1 - Pharmaprix
        2 - Vaccination Center

Please enter the digit corresponding to your option: 1
Here are some time slots you could choose:
        1 - 2:00 - 2:15
        2 - 2:20 - 2:35
        3 - 2:40 - 2:55
        4 - 3:00 - 3:15
        5 - Quit

Please enter the digit corresponding to your option: 1

The booked vaccine is: Pfizer(m-RNA, 2 doses .
Your schedule is: 2:00 - 2:15 @ Pharmaprix .


Thank you for using this program!!
```

Figure 2 - Question1 Sample Output

```
-------****-------****-------****-------****-----
      Welcome to Vaccine Program!
-------****-------****-------****-------****-----

Here are some vaccine you could choose:
        1 - Pfizer
        2 - Moderna
        3 - AstraZeneca
        4 - Johnson&Johnson
        5 - Sinovac
        6 - Gamaleya
        7 - Quit

Please enter the digit corresponding to your option: 5

Sorry! the vaccine Sinovac is not available.

Hope you can take the vaccine very soon! Take care!

Thank you for using this program!!
```

Figure 3 - Question1 Sample Output

```
-------****-------****-------****-------****-----
      Welcome to Vaccine Program!
-------****-------****-------****-------****-----

Here are some vaccine you could choose:
        1 - Pfizer
        2 - Moderna
        3 - AstraZeneca
        4 - Johnson&Johnson
        5 - Sinovac
        6 - Gamaleya
        7 - Quit

Please enter the digit corresponding to your option: 4
Here is the location for the vaccine you chose:
        4 - Health Center

Please enter the digit corresponding to your option: 0
Invalid choice!!! Try again: 4
Here are some time slots you could choose:
        1 - 2:00 - 2:15
        2 - 2:20 - 2:35
        3 - 2:40 - 2:55
        4 - 3:00 - 3:15
        5 - Quit

Please enter the digit corresponding to your option: 1

The booked vaccine is: Johnson&Johnson(Viral vector, 1 dose).
Your schedule is: 2:00 - 2:15 @ Health Center.


Thank you for using this program!!
```

Figure 4 - Question1 Sample Output

Question 2 – String variables/ loops. (6 points)

Write a complete Java program which prompts the user for a sequence of number following the formats “number!Name&number!Name&number!Name&”, reads the line into one String variable using nextline(), converts the string into the numbers, the names and displays the required info as in the given example below.

For example,
If the user’s input is *“1!banana&1!apple&10!orange&”*, then your program should display *“You have 1 banana, 1 apple, 10 orange, and there are 12 items in total .”*
If the user’s input is *“0!banana&0!apple&0!orange&”*, then your program should display *“You have 0 item now! ”*

You can assume a perfect user will enter the correct format. You must use **loop** to solve this question. (Hint: *Integer. parseInt()* can be used to convert a string to an integer)

Following are some sample outputs to illustrate the expected behaviour of your program. Your program should work for any input, not just the ones in the samples below. The text in **green** is user input.

```
-------****-------****-------****-------****-----
      Welcome to String Converter Program!
-------****-------****-------****-------****-----

Please enter a string following the format"number!Name&number!Name&number!Name":

1!banana&1!apple&10!orange&

You have 1 banana, 1 apple, 10 orange, and there are 12 items in total.

Thank you for using this program!!
```

Figure 5 - Question2 Sample Output

```
-------****-------****-------****-------****-----
      Welcome to String Converter Program!
-------****-------****-------****-------****-----

Please enter a string following the format"number!Name&number!Name&number!Name":

0!banana&0!apple&0!orange&

You have 0 items now!

Thank you for using this program!!
```

Figure 6 - Question2 Sample Output

Submitting Assignment 2

1. Compress the source codes (the .java file only please) of this assignment together into one file following 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 this assignment, student 123456 would submit a zip file named a2_123456.zip.
   You will have 2 .java files to submit for this assignment

2. **Upload** your compressed file using the appropriate assignment link in the Assessment page.

3. **NOTE: The only compressed file format we accept is .ZIP. No .RAR files are accepted.**

Please note: All the submissions will be checked for similarities. You are NOT allowed to post the assignment 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.

Evaluation Criteria for Assignment 1 (20 points)

Source Code	
Comments for all 3 questions (1.5 pts.)	
Description of the program (authors, date, purpose)	0.5 pts.
Description of variables and constants	0.5 pts.
Description of the algorithm	0.5 pts.
Programming Style for all 3 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 (9.5 pts.)	
Use of switch where possible	2 pts.
Use of nested statement where possible	2 pts
Use of parallel if (without else) where possible	2 pts
Correct display and input values	2 pts.
Display the result (single or plural form)	1.5 pts
Question 2 (6 pts.)	
Use of loop where possible	1.5 pts.
Convert the words into correct output	1.5 pts.
Convert the number into correct total value	1.5 pts.
Display the result	1.5 ps.
TOTAL	**20 pts.**