Concordia University
COMP 248 – Fall 2015
Assignment 2

Due Date:	By 11:59pm Wednesday October 14, 2015
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 the Java selection and flow of control statements, if, if/else, while and do/while loops - can use for loops but not required.
CEAB/CIPS Attributes:	Design/problem analysis/Communication Skills

General Guidelines When Writing Programs:
Please refer to the handout of Assignment #1.

Drawing a house

You are asked to write a program which prints a house with a roof based on the following specifications. (Refer to the sample outputs to see the expected behaviour of your application.)

1) *Application name*: Display a welcome banner
2) *Welcome user*: Ask the user for their name and using their name welcome them to your application. Ask them if they want a house drawn. Maybe they started the wrong application and want to leave right away. If yes move on to step 3. If no, move on to step 6.
3) *Request house dimensions and validate input:* Ask the user to enter the width and height of the house to be drawn, which must both be even. If the user enters odd numbers for either one of the dimensions, you are required to prompt the user until they enter even numbers. They have 3 tries for each measurement. If after 3 tries they are still entering odd numbers terminate your program with an appropriate personalized message otherwise move on to step 4.
4) *Draw the house*
    a. *Draw the roof:*
        i. The number of rows needed to print/draw the roof is half the width of the house.
        ii. First row (top of the roof) is two centered stars (**).
        iii. The rest of the roof is a triangle where the slash character (/) is used for the left hand side of the roof and backslash character (\) is used for the right hand side of the roof.
    b. *Draw the body of the house:*
        i. The body of the house has *height* rows in all.
        ii. First and last row are drawn using the dash character (-). There are *width* dashes.
        iii. The walls are represented by *height*-2 rows as we used up 2 for the first and last row. Each row has *width* characters where the first and last characters are a | and the rest are spaces.

c. Keep track of the number of houses you have drawn.

5) *Again?* Ask the user if they wish you to draw another house. If yes repeat steps 3 to 5. If no, move on to step 6.
6) *End program:* display a personalized farewell message to the user, saying how many houses you drew. The message should reflect whether houses were drawn or not.

Here are a few sample outputs: user input is highlighted in grey

```
---------------------------------------------------------
          Nancy's Silly House Drawing Program
---------------------------------------------------------

What is your name? Nancy
Well Nancy, welcome to my silly house drawing program.
Do you want me to draw a simple house for you? (yes/no) n
Do you want me to draw a simple house for you? (yes/no) y
Do you want me to draw a simple house for you? (yes/no) No

Sorry you decided not to have any houses drawn!

Come back soon Nancy...
```

```
---------------------------------------------------------
          Nancy's Silly House Drawing Program
---------------------------------------------------------

What is your name? Nancy
Well Nancy, welcome to my silly house drawing program.
Do you want me to draw a simple house for you? (yes/no) YES
Enter height and width of the house you want me to draw (must be even numbers): 1 10

You enter 1 for the height. Not an even number!
Please enter an even number for the height of the house: 3

You enter 3 for the height. Not an even number!
Please enter an even number for the height of the house: 5

You enter 5 for the height. Not an even number!
Please enter an even number for the height of the house: 7

--> Nancy, it seems you are having troubles entering even numbers! Program ending now.
```

```
----------------------------------------------------------
          Nancy's Silly House Drawing Program
----------------------------------------------------------

What is your name? NancyAgain
Well NancyAgain, welcome to my silly house drawing program.
Do you want me to draw a simple house for you? (yes/no) yes
Enter height and width of the house you want me to draw (must be even numbers): 10 10
    **
   /  \
  /    \
 /      \
/        \
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|        |
|        |
|        |
|        |
|        |
|        |
|        |
|        |
|        |
|        |
----------

NancyAgain do you want me to draw another house for you (yes to continue)?
n

Hope you like your house!

Come back soon NancyAgain...
```

```
----------------------------------------------------------
          Nancy's Silly House Drawing Program
----------------------------------------------------------

What is your name? nan
Well nan, welcome to my silly house drawing program.
Do you want me to draw a simple house for you? (yes/no) yes
Enter height and width of the house you want me to draw (must be even numbers): 2 2
**
--
||
||
--

nan, do you want me to draw another house for you (yes to continue)?
no

Hope you like your house!

Come back soon nan...
```

```
-----------------------------------------------------
          Nancy's Silly House Drawing Program
-----------------------------------------------------

What is your name? Sparki
Well Sparki, welcome to my silly house drawing program.
Do you want me to draw a simple house for you? (yes/no) yEs
Enter height and width of the house you want me to draw (must be even numbers): 10 4
 **
/  \
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Sparki, do you want me to draw another house for you (yes to continue)?
yes
Enter height and width of the house you want me to draw (must be even numbers): 4 10
    **
   /  \
  /    \
 /      \
/        \
----------
|        |
|        |
|        |
|        |
----------

Sparki, do you want me to draw another house for you (yes to continue)?
no

Hope you like your 2 houses!

Come back soon Sparki...
```

Submitting Assignment 2

- Zip the source code (the .java file only please) of this assignment.
- 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 at: https://fis.encs.concordia.ca/eas/ as "**Programming Assignment**" and select Submission **2** for assignment #2. **Assignments not submitted to the correct location will not be graded.**

Evaluation Criteria for Assignment 2 (20 points)

Source Code	
Comments (5 pts.)	
Description of the program (authors, date, purpose)	2 pts.
Description of variables and constants	1 pt.
Description of the algorithm	2 pt.
Programming Style (2 pts.)	
Use of significant names for identifiers	1 pt.
Indentation and readability	1 pt.
Correctness of algorithm (11 pts.)	
Personalized messages to user	1 pt.
Validation of height & width	2 pts.
Drawing of house roof	3 pts.
Drawing of house body	2 pts.
Repetition process	2 pts.
If nothing else missing …	1 pt.
Demo of algorithm (2 pts.)	2 pts.
TOTAL	**20 pts.**