Lab 2

Objectives:
• Learn about keyboard input to Java programs using the Scanner class.
• Practice using variables and assignment
• Experiment with simple arithmetic using the jGrap Interactions pane
• Practice writing algorithms in pseudocode and considering alternative solutions

Preparation: Use variables to output a personalized message

1) Implement a Java program named PetName.java that simply prints the word “Hello.” Test it to ensure it works before proceeding.

2) Add some variable declarations, right at the beginning of the main method (i.e., before you print anything):

```java
String name = "Daphne";
String petName = "Luca";
int age = 18;
```

Substitute your name, age, and pet name. If you don’t have a pet, maybe try one of these:
http://www.medievalists.net/2013/06/23/medieval-pet-names/

3) Modify your program to print the message below, incorporating the variables in your printing statements. Test your program to ensure it works correctly.

```plaintext
Hello, my name is Daphne and I am 18 years old. I’m enjoying my time at Villanova, though I miss my pet Luca very much!
```

4) Check your program for style and comments. If necessary, fix indentation or add some blank lines to make it more readable.

5) Submit PetName.java through blackboard under the assignment “Lab 2 Prep”
Part A: Input using Scanner

1) Run **PetName** and compare your work to your partner’s.

   *Verify that the code works as stated, is well formatted and includes appropriate comments. If necessary, help your partner improve their code to make it more readable, then sign each other’s worksheet.*

   **Classmate signature:** ________________________________

2) Now improve **PetName.java** so that it obtains the values of the variables **name**, **petName**, and **age** as input from the keyboard. Do this by inserting the appropriate code to use a Scanner to input value (Hint: refer to examples in lecture notes):

   ```java
   Please enter name:
   Anne
   Please enter pet name:
   Purkoy
   Please enter age:
   21
   Hello, my name is Anne and I am 21 years old. I'm enjoying my time at Villanova, though I miss my pet Purkoy very much!
   
   Check your work with your classmate – test each other’s programs to ensure they work well.
   
   3) Experiment with your code some more and discuss with your classmate.

   What happens if you enter a full name instead of just the first name? ____________________________
   _______________________________________________________________________________________
   _______________________________________________________________________________________
   _______________________________________________________________________________________

   What happens if you enter the name instead of age or vice versa? ____________________________
   _______________________________________________________________________________________
   _______________________________________________________________________________________
   _______________________________________________________________________________________

   **Classmate signature:** ________________________________
Part B: Use the jGrasp Interactions pane to test some code snippets

Open jGrasp and click on Interactions tab (lower part of window).
You can type in expressions, for example (works like calculator):

- 4 + 3  
- 3.1 * 0.2e-4  

... or Java statements such as variable declarations, assignment statements, and other simple Java code snippets.

- int a = 1
- double b = 3.4
- int c = 5; // Note: semicolon is optional here
- a = c
- c = 2

You can type any expression to get its value; type variable names to get their values:

- a  
- b  
- c  

Try some more expressions and note what you get:

- 14 / 3  
- 14 % 3  
- 143 / 60  
- 143 % 60  
- 8 / 12  
- 8 % 12  
- String word, sentence;
- word = "fish "  
- sentence = word + word  
- sentence = sentence + sentence  
- sentence = sentence + sentence  

(Repeat this a few times and see what happens)

You can also experiment with Math:

- Math.sqrt(2)  
- double phi = Math.PI / 3
- phi  
- Math.sin(phi)  

Notes about other things you tried:  

Check & discuss your work with a classmate.

Classmate signature:

Tips:

- Watch the Workbench tab on the top/left part of the window; it lists your variables and their values.
- To avoid re-typing a line of code, use the up-arrow (one or more times)—it remembers the previous lines of code you entered.
- Java expressions that have a value can be evaluated directly. Statements or directives that have no value need a semicolon. Example:
  - import java.util.Scanner;
  - if (a > 0) word = "yes";
Lab 2 Comments

Comments on this lab, please:

What was the most valuable thing you learned in this lab?

What did you like best about this lab?

Was there any particular problem?

Do you have any suggestions for improving this lab as an effective learning experience?