Lab 1 Name:_____ Checked:_____

Objectives:

- Learn about jGrasp - the programming environment that we will be using
- Compile and run a Java program
- Understand the relationship between a Java class name and the name of the `.java` file where the class is defined
- Practice using basic Java output statements and adding documentation (comments) to your source code.
- Introduce variables and the assignment statement

Instructions:

Follow the instructions below. At various points, you are asked to compare your work with a classmate's and sign each other's worksheet.
When finished, have your work checked by the instructor or TA and submit your files.

1. Download and save `Lincoln.java`
   (url: http://www.csc.villanova.edu/~map/1051/Chap01/Lincoln.java)
   Suggestion: create a folder for this course and organize your files for each lab in separate subfolders. For example, use a folder `Lab01` for the files that you will be creating today.

2. Open `Lincoln.java` using jGrasp

3. In jGrasp, compile `Lincoln.java` ,by clicking big green plus button:
   
   - note that you now have a file `Lincoln.class` in the same folder

4. In jGrasp, run `Lincoln.class` ,by clicking on the red runner button:
   
   - this causes your program to execute its instructions
   - see the output of this run in the interactions (lower window) in jGrasp

5. Open, compile and run the other two examples from chapter 1:
   http://www.csc.villanova.edu/~map/1051/Chap01/Lincoln2.java
   http://www.csc.villanova.edu/~map/1051/Chap01/Lincoln3.java

6. Follow the steps below to create a new program called **`MyLincoln.java`** :
   - Starting with `Lincoln.java`, Rename the class to `MyLincoln`
   - Save the file as `MyLincoln.java` [what happens if the class name does not match the file name?]
   - Add to or modify the existing comments to include:
     - Your name (you are now the Author)
     - A note about the original author ("based on a program by Lewis & Loftus")
   - Re-compile and run to make sure it still works (there should be no difference in its functionality)

Classmate signature: _____

7. Experiment with this program and introduce some errors ("bugs"). Try some of the following to see what happens when you re-compile and (if successful) run the program. If you get an error right away, mark it as "syntax," if it compiles but you get an error when you try to run it, mark it as "runtime," and if it compiles and runs but produces a wrong (or different result than intended, which we take to be the original), mark it as "logic".

   - Change the first `println` to `print` Error: _____
   - Change the second `println` to `print` Error: _____
   - Change the second `println` to `bogus` Error: _____
   - Remove the semicolon at the end of one of the statements Error: _____
   - Remove the last brace of the program Error: _____
   - Change `main` to `man` Error: _____
   - Something else you tried?
     _____ Error: _____

Classmate signature: _____

8. Create a new program named `MyQuote` that prints out a different quotation, something you like.
   - Remember to change the name of the program/file
   - Update the comments as appropriate

Classmate signature: _____

9. Now add some *variables* to the program `MyQuote` by including the following code, right before the first "`System.out.println(…)`":

```
int x = 42, count = 100;
String name = "Kripke";
```

10. Add more output statements that incorporate the values of your variables: For example:

```
System.out.println ("Howdy " + name);
System.out.println ("The answer is " + x);
System.out.print ("Counting... up: " + (count + 1));
System.out.println ("  ... and\n ... down: " + (count - 1));
```

Feel free to be creative! Compile and run your program to make sure it works and that it prints out the values of your variables where you expect them. Try changing it around to use different values or different variable names (we are using the names `x`, `count`, and `name` here). Be sure to stay away from the reserved words (see fig 1.18, p32). We will be learning a lot more about variables, but for the moment you can just experiment with whatever comes to mind. Don't worry about making mistakes – that's the best way to learn.

Classmate signature: _____