Advanced Java Workshop

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Downloads:

1. Java JDK: [follow this link](https://www.oracle.com/java/technologies/javase/jdk16-archive-downloads.html) and download the **installer** for Linux, Mac, or Windows
2. jGrasp: [follow this link](https://spider.eng.auburn.edu/user-cgi/grasp/grasp.pl?;dl=download_jgrasp.html), scroll down, and download one of the first three options (no need to fill out the survey at the top)
   1. this is the IDE I will be using for this workshop, but you may use another IDE like VSCode or Eclipse if you would prefer

Workshop step-by-step:

1. Make sure you have the correct Java JDK and jGrasp downloaded
2. Create a new file in jGrasp
3. Review comments and add your name and a title to the top of the project
4. Import Java swing
5. Create a class
6. Create a static method “determineGuess” that returns a string and takes in three parameters
   1. Write an if-else statement
   2. Review Boolean operators (||, &&, ==, >, <, <=, >=)
   3. Return a string
      1. Review concatenation and escape characters
7. Create a main method
   1. Three integer variables
   2. Math.random for a number 1-10
   3. While loop
   4. JOptionPane – a simple way to create dialog boxes that can accept input
      1. [**showInputDialog**](https://docs.oracle.com/javase/7/docs/api/javax/swing/JOptionPane.html#showInputDialog(java.awt.Component,%20java.lang.Object,%20java.lang.String,%20int))([**Component**](https://docs.oracle.com/javase/7/docs/api/java/awt/Component.html) parentComponent, [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html) message, [**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) title, int messageType)
         1. Shows a dialog requesting input from the user parented to parentComponent with the dialog having the title title and message type messageType.
      2. [**showMessageDialog**](https://docs.oracle.com/javase/7/docs/api/javax/swing/JOptionPane.html#showMessageDialog(java.awt.Component,%20java.lang.Object))([**Component**](https://docs.oracle.com/javase/7/docs/api/java/awt/Component.html) parentComponent, [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html) message)
      3. [More info about JOptionPane](https://www.tutorialspoint.com/what-are-the-different-types-of-joptionpane-dialogs-in-java#:~:text=The%20JOptionPane%20is%20a%20subclass,the%20complexity%20of%20the%20code.&text=InputDialog%20%2D%20dialog%20box%20that%20besides,allows%20entry%20of%20a%20text.)
   5. Converting a string to an integer (.parseInt() )

Additional Challenges:

* Adding multiple rounds
  + [Video tutorial: adding a reset button](https://www.youtube.com/watch?v=cA1GvZ5Y3-U)
* Calculation and displaying score
  + Giving points based on the number of attempts
  + Add another integer variable and display it in the JOptionPane
* Adding a more complex GUI
  + [Java GUI Basics](https://www.guru99.com/java-swing-gui.html#:~:text=GUI%20(Graphical%20User%20Interface)%20in,easy%20interfaces%20for%20Java%20applications.)
  + [Video Tutorial](https://youtu.be/5o3fMLPY7qY)