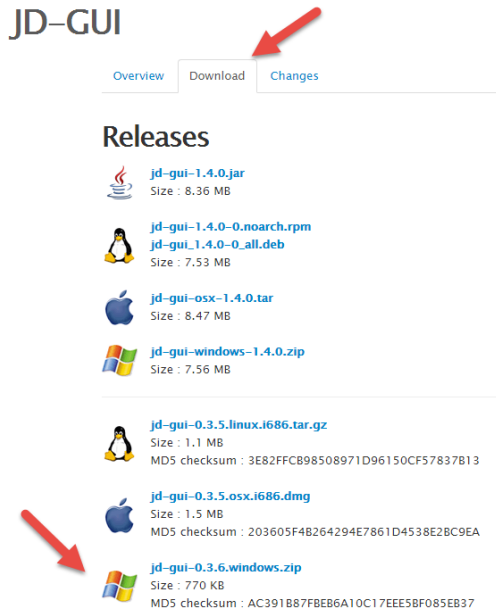# Exercises module 11 – Packages

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Exercise 1 – Decompiling Java

1. By default most compiled Java code can be decompiled back to Java source code.
2. Download JD-GUI from http://jd.benow.ca/

3. Unzip the file and then run it
4. Click on File -> Open File and select a **.class** file from your previous compiled projects/code. As you see the **.class** file is decompiled back to Java source code.

   Many different decompilers exist for Java with various features.

5. To see the decompilation of a larger file, you can try open one of the **.JAR** files found in the **C:\Program Files\Java\jre1.8.0_102\lib** folder.

   The exact path\number might be different on your computer.

6. If you want to protect yourself from decompilation (reverse engineering), then there are various tools to **obfuscate** your **.class** files and making it harder or impossible to decompile. One of the most popular ones is: http://proguard.sourceforge.net/

   Open the product page and **read** more about it.

Questions and concepts to study further on your own:

More information and resources about decompilers and obfuscators:
- http://www.javadecompilers.com/
- http://stackoverflow.com/questions/272535
- http://stackoverflow.com/questions/2537568/best-java-obfuscator
- https://reverseengineering.stackexchange.com/questions/1370/what-is-a-good-java-decompiler-and-deobfuscator