Marcus Domingo

CSC 205

HW 7B

CSC205 section 1 Spring 2015

Homework 7

Part B

1. [Total 3 pts] In this question, we explore java bytecode in both the binary and the mnemonic levels. Read the following article “Java bytecode fundamentals” at (<http://arhipov.blogspot.com/2011/01/java-bytecode-fundamentals.html>), which explains how to interpret the information provided by the java disassembler javap.

* 1. Create the binary java bytecode (that is the class file) for the source file “simple.java”. Then do the following:

1. [1pt] Obtain a text version of the class file using a hexdump, such as xxd (linux) or hextool (windows).
2. [1pt] Obtain a mnemonic version of the class file using javap -c.

Please submit your results for (i) and (ii) as readable text.

* 1. [1pt] Read the article “Hacking java bytecode for programmers (part3)”, at (<http://www.acloudtree.com/hacking-java-bytecode-for-programmers-part3-yes-disassemble-with-javap-all-over-the-place/>). Discuss what a programmer could do to protect his/her project from certain risks of hacking. (Note: This discussion is created in hope of helping you become a more informed programmer. Please, do no evil!)

Revert from using opcodes that have counter parts to them that can allow a hacker to easily access some information that they shouldn’t be able to access.

Further investigations: Read this discussion at StackOverflow (<http://stackoverflow.com/questions/12088/do-you-obfuscate-your-commercial-java-code>) to find out what people do in the trade.

For a short introduction to the JVM internals, read “Understanding JVM internals: from basic structure to Java SE7 features” at (<http://architects.dzone.com/articles/understanding-jvm-internals>).