



# Computer Science 507 Software Engineering

The College of Saint Rose  
Spring 2013

## Lab 7: FindBugs

Due: 6:00 PM, Monday, April 8, 2013

This week's lab exercise will introduce you to a tool that analyzes Java code for potential errors. Of course, it is impossible for a program to find all possible errors in another program. However, there are many common errors that can be found.

You may work alone or in groups of 2 or 3 for these exercises.

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### FindBugs Installation and Setup

The tool we will use this week is called FindBugs from the University of Maryland.

FindBugs finds bugs in Java programs, and is itself a Java program. That makes it very easy to install and use either standalone or as an Eclipse plugin. It is up to you how you decide to run FindBugs.

Follow the instructions in the FindBugs Manual to download, install, and run FindBugs on a computer of your choice.

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### A Simple Example

Copy the Java files from the directory `/home/cs433/examples/javageneric` on `mogul.strose.edu` to the computer where you installed FindBugs. Set up a project, add the directory containing the "javageneric" example code to the project and run an analysis.

**Question 1:** What errors are reported by FindBugs? (2 points)

**Question 2:** Are these errors legitimate errors? If not, why not? If so, how could they be fixed? (3 points)

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### A Larger Example

Next, we will analyze a larger Java example. If you have a Java program that you'd like to use (minimum 10 non-trivial Java classes), please feel free to do so. Otherwise, you can use the "Structure package", the source code of which is available from here. To analyze this one, you'll add the "structure5" directory that is produced when you extract the gzip'ed tar file.

**Question 3:** Use FindBugs to analyze your larger example (either structure or another package/program of your choosing). Summarize the results, and choose 3 of the reported problems and describe it in more detail. If it is a legitimate error, suggest a fix. If it is not, explain why it is not. (10 points)

### **Interaction with JUnit**

**Question 4:** Use FindBugs to analyze your JUnit tests from the previous lab. For each problem reported by FindBugs, describe it briefly. If it is a legitimate error, suggest a fix. If it is not, explain why it is not. (5 points)

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### **Submission and Grading**

To submit the assignment, send your responses to the questions above to *terescoj@strose.edu* by 6:00 PM, Monday, April 8, 2013. Please include a meaningful subject line (something like “CS507 Lab 7 Submission”).

This lab will be graded out of 20 points.