

CS494 Software Engineering II System Testing

Date Assigned: Tuesday, April 3, 2012

Test Plan Due: Tuesday, April 10, 2012

Test Report Due: Thursday, April 19, 2012

CONGRATULATIONS! You have almost completed the development of your senior project. You now have to complete the finishing touches! Let us start with testing.

System testing is testing your project as a whole. While testing is something that you should be performing throughout the development of your project, at some point you need to have independent testers. We won't be able to replicate independent testing exactly; however, we will try.

Part 1: Test Plan

The first thing that you need to do is to make sure that every single one of your requirements (use cases) is tested. The best way to do this is to create a testing requirements matrix; this is what an independent tester would do. Given a list of requirements, the testers would develop tests that would test each requirement. Hopefully one test will cover more than one requirement, so this is where the requirements matrix comes in handy.

For example a test requirements matrix might look like this:

	Test	1	2	3	4	5	6
Req							
1		x				x	
2			x	x			
3					x		x
4		x	x			x	
5			x	x			x
6			x				

Of course, you would need to have the list of requirements and the list of tests to make the matrix information complete.

For your testing plan, you need to provide

- 1) A list of requirements (just the names of them). If your requirements have changed, be sure to only include the requirements that still apply.
- 2) A list of tests. A detailed description of how to perform the test.
- 3) A requirements testing matrix similar to the one above.

The requirements and the tests may be those you already determined last semester and this semester. Be sure to make any updates to your requirements and tests if your project has changed. Also, your list of tests must include a short description of how to perform

the test, including any input parameters or files you'll need. I would encourage you to develop new tests to make sure that you've caught most problems.

Part 2: Beta testing

Once your test plan is completed, you are ready to test!

Since system testing is rarely done by the developer, we will have independent testers perform system testing for your project as well. I will try and recruit the sophomores to serve as your independent testers. You will need to provide for them:

- 1) A brief description of your project.
- 2) A list of functionalities (should be similar to user requirements).
- 3) A description of how to use your software.
- 4) A list of at least 3 tasks to perform. These tasks should be crucial to your project.

NOTE: On April 3 you must turn in your testing plan (the three items on the previous page) and testing documents (the four items listed above). These need to be in GoogleDoc form and shared with me (ShereenKhoja@gmail.com).

Unlike the real world, you can be present when your beta tester is testing your project. You need to document any question they ask or any clarification that needs to be made. Also, you need to document how quickly they were able to perform the tasks and any errors they encountered. Finally, you should allow your beta tester to try to “break” your program. Encourage them to experiment and use the program in ways in which it was not intended. Document anything that goes wrong. Remember—it is not sufficient to ignore these problems just because the user was not supposed to do that. Your program should be structured so that it cannot be used incorrectly or if it is, a meaningful error message should appear. You will need to fix any of these “bugs”. Be sure to take detailed notes—you will use them to write your testing report.

Part 3: The Report

Finally, the structure of your report should follow the outline of the information that you gave to the user. Next, you need to describe any errors found during the beta testing (both in the tasks and in the efforts to break your program) and how to fix them. Include a schedule for fixing your errors (if you already fixed them, just note the date that you completed it). Share your report with me (ShereenKhoja@gmail.com) via GoogleDocs.