CMSC 435 - Software Engineering
Spring 2010
Quiz 7

Name: SOLUTION

Answer the questions below. Be clear and concise in your answers, writing in complete sentences and providing examples for support as appropriate. No answer should take more than three sentences. You will lose points if you do not follow these instructions.

We discussed two classes of techniques for testing: white-box testing and black-box testing. In your class project, you have been working with four test suites: large system tests, small system tests, integration tests, and unit tests.

1. (3 pts.) What is a white-box testing technique?
   A white-box testing technique uses knowledge of the structure of the code to develop test cases. This knowledge of the code does not include consideration of the code after the execution of test cases, which is possible for both black and white-box testing. It is also possible to have white-box tests at the system level, if the tests are designed using knowledge of the internals of the code.
   2 pts. for knowing white-box was internals of code
   1 point for focusing on test case design

2. (3 pts.) What is a black-box testing technique?

   A black-box testing technique treats the software as an atomic entity (hence the term "black box") and does not use any knowledge of the code under test in development of tests. It is possible to have black-box tests at a unit level, if the test is designed solely in terms of input and expected output, but this is rare, because many unit tests are designed to provide a certain coverage of the unit, to test certain branches of the unit, etc.

   2 pts. for knowing black-box was from outside of code 1 point for focusing on test case design

3. (4 pts.) Which of your test suites from the class project use white-box approaches? Which suites use black-box approaches?
   To be precise, only the large system tests were developed using black-box approaches. All other tests were developed with some knowledge of the innerworkings of the code actually guiding test development. However, I did not deduct points if you included small system tests as black-box approaches, because you may have not known that the small system tests were designed with knowledge of the code.
   Many people listed integration tests as black-box, but these tests do require a knowledge of the units being integrated (e.g. for the development of mock objects and development of tests) and in some cases, are actually simply using unit tests at a different level, so they are considered white-box.
   1 point for each test suite