Software Testing Comprehensive Exam
Fall 2011

ANSWER ANY FOUR OF THE FOLLOWING FIVE QUESTIONS.

Do not attempt more than four questions on the exam. If you answer five, pick your best four and *cross out the fifth*, the one you don't want us to grade. If you provide more than four answers, we will grade the answers to the first four questions and ignore the fifth.

1.   Define a scenario test and describe the characteristics of a good scenario test. Suppose that scenario testing is your primary approach to testing. What controls would you put into place to ensure good coverage? Describe at least three and explain why each is useful.

2.   A client retains you as a consultant to help them introduce GUI-level test automation into their processes. What questions would you ask them (up to 7) and how would the answers help you formulate recommendations? For at least three questions, be specific about what answer might lead you to one recommendation and how a different answer would lead to a different recommendation.

3.   The Spring and Fall changes between Standard and Daylight Savings time creates an interesting problem for telephone bills.

   Focus your thinking on the complications arising from the daylight savings time transitions.

   Create a table that shows risks, equivalence classes, boundary cases, expected results and "notes" for a long distance telephone service that bills calls at a flat rate of $0.05 per minute. Assume that the chargeable time of a call begins when the called party answers, and ends when the calling party disconnects. Your "notes" should explain, for each test, why this is a good test.

4.   Why is it important to design maintainability into automated regression tests? Describe some design (of the test code) choices that will usually make automated regression tests more maintainable.

5.   Consider *domain testing* and *specification-based testing*.
   a.   What kinds of bugs are you more likely to find with domain testing than with specification-based testing? Give at least two examples of types of bugs and explain why domain testing is more powerful for each kind.
   b.   What kinds of bugs are you more likely to find with specification-based testing than with domain testing? Give at least two examples of types of bugs and explain why domain testing is less powerful for each kind.