

Black Box Software Testing

Spring 2004

Please answer the following questions and submit your answers. Write your answers on standard, lined paper. I am trying to learn more about what you know, so that I can decide how best to teach you. On this test (only on this test) you will get credit for thoughtful answers, even if they are incorrect. Please attempt all parts of each question.

1. **What is your name?**
2. **You are testing a program that includes an Integer Square Root function. It interprets the contents of a 32-bit word as an unsigned integer and then computes the square root of the integer, as a floating point number.**
 - 2-A What values can you input to this function?
 - 2-B Can you imagine any invalid inputs to this function, inputs that should cause the function to yield an error message?
 - 2-C If you were to test *all* the inputs to this function, how many tests would there be?
 - 2-D How long do you think it would take you to run all these tests?
 - 2-E How would you describe how to test this function? Describe your thinking about your possible testing strategies.
 - 2-F Describe the tests that you would actually run and explain why these are useful or interesting tests.
 - 2-G Would you add more tests if you wanted to test the program thoroughly and be confident that there are no bugs?
 - 2-H How would you tell whether the program passed or failed your tests?
 - 2-I Have you ever done this type of testing? If so, when? Please describe your experience.
 - 2-J Have you ever used tools that would help you do this testing? What tools? What did you do with them?

3. **Suppose you were writing a text editing program that would display fonts properly on the screen. How would you test whether the font display is correct?**

Here is some terminology:

A *typeface* is a style or design of a complete set of printable characters. For example, these are all in the typeface "Times New Roman":

Times New Roman, size 9 points

Times New Roman, size 10 points

Times New Roman, size 11 points

Times New Roman, size 12 points

The following are in the Helvetica typeface:

Helvetica, size 9 points

Helvetica, size 10 points

Helvetica, size 11 points

Helvetica, size 12 points

When you add a size to a typeface, you have a font. The line above this is printed in a Helvetica 12 point font.

- 3-A How could you determine whether the editor is displaying text in the correct typeface?
- 3-B How could you determine whether the editor is displaying text in the right size?
- 3-C How would you test whether the editor displays text correctly (in any font that the user specifies)? Describe your thinking about this problem and the strategies you are considering.

Thank you for writing this test. It will help me plan the course.