

CS 4501/6501: Quiz 5

26-Sep-2017

Names:

Instruction: Answer the questions as concisely as you can. Please write neatly; if I can't read it I have to mark it wrong.

1. (4 pts.) Consider the following code.

```
public static int numZero(int[] x)
{
    // Effects: if x == null, throw NullPointerException
    //           else return the number of occurrences of 0 in x
    int count = 0; // line1
    for (int i=1; i<x.length; i++) { // line2
        if (x[i] == 0) // line3
            count++; // line4
    }
    return count; // line5
}
```

o (1 pt.) What kind of coverage criteria will you use to test this code? You may choose any criteria you know or you may create a new criterion.

o (3 pts.) Apply the concept of RIPR model and discuss the following:

- Why is your (choice of) coverage criterion appropriate to test this code?
- Based on your (choice of) coverage criterion, which conditions of the RIPR model must be satisfied? Why?
- Which conditions do not need to be satisfied? Why not?

Note: This is an open-ended question; the grading is based on your justification. Your discussion must include **all** conditions of the RIPR model

2. (2 pts.) What are differences between "test case" and "test requirement"?

Answer

Test case: composed of the test case values, prefix values, postfix values, and expected results necessary for a complete execution and evaluation of the software under test.

Test requirement: specific element of a software artifact that a test case must satisfy or cover.

3. (2 pts.) What usually prevents our tests from achieving 100% coverage. Justify your answer.

Answer

- Infeasible test requirements
- Time and budget (and manpower) constraints

(Note: any justified reasons are acceptable)

4. (2 pts.) Discuss how much 99% coverage is worse than 100% coverage. Include any assumptions or requirements imposed.

Answer

Pracically, we don't have enough data to tell how much 99% coverage is worse than 100% coverage.

(Note: any justified reasons are acceptable)