

## Assignment #6

### Deriving Test Cases

CS 3398, Spring 2014

**due: Section 251: Wednesday, Apr 23, and Section 252: Thursday, Apr 24, in class**

Submit a hard copy in class (printout and/or hand written). If you cannot make it to class, please submit at the Computer Science Department office.

1. **Partition testing:** Test a function called "verifyPassword" that takes a string representing a proposed password, and returns true if it meets the following criteria (and false if it doesn't):

- at least 5 characters
- at least one digit
- at least one non-alphanumeric character (for example, !, \$, #, %)

Identify at least 5 testing partitions for this function, and derive a set of test cases (one for each partition). Be sure to include the test data value and expected result for each test case.

2. **Path testing:** Draw a control flow diagram for the source code in the box.

Then:

- assign a number to each node.
- list the unique paths through the control flow diagram (use a sequence of node numbers to identify each path).
- for each unique path, generate a test case by giving values to use for a, b, and c to make the program run through that path. Also give the expected result (the value of d).

```
d = 0;
if (a > b)
    d = d+1;
if (b > c)
    d = d+2;
else
    d = d+3;
cout << d << endl;
```

3. **Requirements-based testing:** Consider the following (simplified) system level requirement for the Refund Request feature of the Postage Printing Website. Write at least two test cases, following the style of the last slide in the chapter 8 lecture slides, that test at least two options through the function (one of which should be a successful refund). **Use specific data values!**

Include steps to initialize the system before running the test.

- assume that you can use a test account with username "tester" and password "12345"
- assume that you can set a balance for that account, and add some label printing history.
- assume you can call the Get Balance function to check the balance for the logged in user.

Refund Request requirements:

1. The user must be logged in first.
2. The system will prompt the user to enter a date that the postage was purchased.
3. If the date is not within the last 10 calendar days (including today), the operation will fail.
4. The system will offer the user a list of the labels that user printed on that day.
5. For each label the system shall output the zip code of the recipient, date printed, postage amount and tracking number (if any).
6. The user will select one of the labels (or choose to cancel).
7. The user's account will be credited with the amount of the postage of the selected label.