

BLACK BOX SOFTWARE TESTING SPRING 2005
DOMAIN TESTING LAB PROJECT

For all of the cases below, do the traditional equivalence class and boundary analysis. Draw one table and use a new line for each variable. There is at least one variable of interest in each case below. It's up to you to identify the variable(s) to analyze. Along with the table, provide one or more pages of notes to explain any aspect of your paper that needs an explanation.

You may work on this in pairs. If both of you are stuck, you may consult with another pair. You may use any reference material. However, each of you must think through, and be able to explain, every entry in your pair's table.

1. You are given a VISA gift card, with a \$500.00 balance. You go to a store, buy some merchandise, and the clerk enters a total amount to be deducted from your card.
2. You are required to enter a password of up to 100 characters. The characters must be lower ASCII, printing characters.
3. People are divided into three teams, Red, Green, Blue. You enter the person's name and their team. (Analyze Team, not Name).
4. Go to the page setup dialog in Open Office. Analyze the variable that specifies page width.
5. Go to the page setup dialog in Open Office. Analyze the variable that specifies number of copies to print.
6. A and B and C are unsigned integers. $C = A+B$. Analyze C.
7. A and B and C are unsigned integers. $C = A+B$. Analyze the pairs (A,B) that yield valid values of C.
8. You are required to do a certain task on July 1, 2005. On completion of the task, you enter the time (in hours, minutes and seconds) at which you completed the task. Suppose that you do in fact complete the task on July 1, 2005. For simplicity, use military time (1 p.m. is 1300 hours).
9. X is a floating point number, stored to 5 decimal digits of precision. Input a value to X that should be equivalent to PI.
10. X is a floating point number, stored to 5 decimal digits of precision. Input a value to X that should be equivalent to $PI / 10000$.

NOTES:

Students worked on this assignment in pairs, but when one pair got stuck, they were free to consult with other pairs or with online material or books. Note that I am asking for the traditional table (Myers) not the risk-driven table. The goal for this assignment is to make sure students are familiar with the traditional analysis and have applied it to a range of problems.

These problems are different enough from each other that different students needed significantly different coaching.

One of the common errors among students who have not spent enough time on machine arithmetic is that they think 5 digits precision means 5 digits after a decimal point, rather than 5 significant digits. The difference is that 0.0000012345 can be stored in 5 digits precision, but it is 0 if we round or truncate 5 digits after the decimal point.