CMPSCI 145 Fall 2010
Lab #1
Professor William T. Verts

Setting Up

This project must be performed on a Windows PC, and not on a Macintosh (unless you have installed Windows through Boot Camp or have some other mechanism for running Windows-based software on a Mac).

Create a special folder on your disk called `Z99` to hold everything associated with this project. If you wish to use a flash drive, put the `Z99` folder at its root instead. For example, if your flash drive comes up as disk `E:` create the `Z99` folder at the root of the `E:` disk.

Go to the class Web page and click the link to download the Z99 spreadsheet, or type the address in manually (all on one line):

`http://www-unix.oit.umass.edu/~verts/software/Z99_Windows_Distribution_V1_0.zip`

Download the 707K `.ZIP` file into your `Z99` folder. Unpack the program `Z99.EXE` file from the archive into your `Z99` folder, along with all other files in the archive. There will be `Z99_Help.pdf`, `ReadMeZ99.txt`, and a couple of `.Z99` data files. Please read both the `ReadMeZ99.txt` file and the `Z99_Help.pdf` file. You may examine the `.Z99` files in Windows Notepad as well, but be careful to not make any changes. Make certain that the `Z99_Help.pdf` file is in the same folder as `Z99.exe`, as you may launch the help file directly from within the Z99 program itself. If desired, create a shortcut to `Z99.exe` on your desktop.

Note that there is an older program available in my software site which is also called Z99, but that one is for MS-DOS instead of Windows. Do not use that program.

Running the Program

Launch the program. For anyone familiar with Microsoft Excel, there are many similarities (and quite a few differences). Try typing text and numbers into the various cells to get used to the data entry dialogs, and create simple formulae that reference those cells. For example, put 10 into cell `A1`, 20 into cell `A2`, and the formula `=A1+A2` into cell `A3`. The number shown in `A3` should be 30. Edit either `A1` or `A2` to take on new values, and watch the result in `A3` change appropriately.

Scroll around the grid. Explore the menus. Widen columns. Change the fonts and colors. Draw lines around cells. Lock and unlock cells, copy and paste formulae, select some cells and print them, etc. Launch the help document. Load in the sample files and look at their formulae. Have fun! Once you are comfortable with the basic structure and format of Z99, hit File-New and discard any existing cell contents.

Steps of the Assignment

1. In cell A1 type your full name.

2. In cell A2 type the formula =NOW and hit Enter. A number such as 40458.8328806714 will appear in that cell. Format that cell as a date. It should appear as the current day.

3. In cell A3 type the formula =NOW again. Format that cell as a time. It should appear as the current time of day.

4. Select the three cells A1:A3 with the mouse, and set the font to Times New Roman, boldface. Set the background color to a light cyan (light blue-green). Draw a thick-lined box around the three cells.

5. In cell A6 type the number 25000.

6. In cell A7 type the number 30000.

7. In cell A8 type the number -10000.

8. In cell A10 type the formula =SUM(A6:A8).

9. Select the cells A6:A10 with the mouse, and copy them to the clipboard. Select cells B6:D10, and then paste. You should see identical copies of the numbers in columns A through D. Step from A10 to B10 to C10 to D10 to make sure that every formula adds up the cells in its column only.

10. Select the entire range A6:D10, and then right justify those cells.

11. Leave the numbers in column A alone. Select cells B6:B10 and format them as currency with two decimal places. Select cells C6:C10 and format them as hexadecimal, but leave them at full precision (eight hexadecimal characters to both the left and right of the decimal point). Select cells D6:D10 and format them in binary with two decimal places.

12. Select the range A6:D8 and draw thick lines around the outside, with thin lines on the inside. Do the same thing with the cells in the range A10:D10 (just that one row).

13. AutoSize all columns to the "best fit" width.

14. Using File-Save store the spreadsheet on your disk as LAB1.Z99 in the same Z99 directory where the Z99.EXE program is located.

15. Select all cells (range A1:D10), and print them in **Landscape** mode. The printout should appear on a single sheet of paper. Save this page for your report.

16. You are now done with the spreadsheet. Use File-Exit to close it down. If the spreadsheet asks to save any changes, answer yes.

What to Turn In

1. Launch Windows Notepad. Set the font to Courier New, bold, 10 point. Load in and print your `LAB1.Z99` file. The result will come out on around four pages, even at the small point size.

2. Using your favorite word processor (Word, Wordpad, etc.), write a short essay that discusses what is going on in the spreadsheet, with emphasis on the following points:

   A. What is shown by the various numeric representations (Signed, Currency, Hexadecimal, and Binary), and why do the values appear on screen as they do?

   B. What are the differences between the formulae (including the numbers) you typed in, the values computed by those formulae, and the appearance of those values on screen?

   C. Compare the printout of `LAB1.Z99` printed from Z99 versus the version printed from Notepad. What does each representation provide that the other does not? What are the advantages and disadvantages in each case?

   Your essay must be at least ½ page, but not more than one page, in length. It must be single-spaced, in 12-point Times New Roman, and fully justified, with 1-inch margins. Your essay ***must contain your name*** as part of the document, not just written in by hand.

3. Sort your printouts in the following order for submission:

1. Essay	(one page)
2. `LAB1.Z99`	(printout from Z99, one page)
3. `LAB1.Z99`	(printout from Notepad, multiple pages)

   Staple the print-outs together and turn them in.

   You will be graded as follows:

   A. 50% on whether or not, or how well, you completed the tasks in Z99. For example, you will lose major points if your name is not in cell `A1` of the spreadsheet (and printed on the essay, for that matter). Similarly, you will lose points for omitting lines around the cells, background colors, font changes, etc., as well as for incorrectly formatting the columns of numbers.

   B. 40% on the quality of the essay (i.e., the completeness and clarity of your arguments).

   C. 10% on the format of the document you turned in: the order of the printouts, line spacing, paragraph justification, font, etc. (basically on how well you followed the directions).