Homework #2 -- (Glade Manual, Chapter 2)

Naming Data Ranges

- default approach – write formulas involving cell references, e.g. =B2*C2
- alternative: give meaningful name to an entire range of cells, then write a formula involving these names, e.g. =Price_Each*Quantity
- **important**: evaluation is still cell-by-cell, so shapes of named ranges have to match.
- to create a named range:
  - select desired range (highlight it)
  - Formula → Define Name
  - change default name, if desired
  - click OK button
- to use a named range in a formula
  - select first cell where formula is to be placed
  - type = symbol
  - Formula → Use In Formula, select first operand (Price_Each)
  - type * symbol
  - Formula → Use In Formula, select second operand (Quantity)
  - press Enter or click on (green) check
- notice only first cell (D2) is calculated
- select range (D2 to D9), Home → Fill → Down
- what happens if shape of result range isn't the same as the two operands? Experiment with different combinations.

Personal Comment:

I disagree with the Lab manual's claim that =Price_Each*Quantity is clearer than =B2*C2 . The expression using named ranges must be copied to the other cells and evaluation is still cell-by-cell, but now the cell-by-cell calculation is hidden within the formula. And this hidden calculation is carried out one way when one named range consists of a single cell and the other a multi-cell range (often a column or row, but it could be a rectangular grid) and in a different way when both operands are multi-cell grids.

Despite the emphasis on Named Ranges in the manual, you should force yourself to become equally comfortable with using Named Ranges and direct cell references.

To build a formula using the point-and-click technique

You can type in a formula directly, but I've found this to be an error prone process and, on occasion, Excel has rejected what appears to be a correct formula. I would then reconstruct the formula in an adjacent cell and compare the two and find no visible difference, but Excel did not complain about the second formula.

- should only need to touch the keyboard to enter constants or operators
- expressions not involving functions, i.e. only cell references
  - select cell (on any worksheet) or type constant
  - type operator
  - repeat as often as needed
  - finally press Enter or click on (green) check
- nested functions
  - click on Paste function (f_x) icon
  - click on downward pointing arrow (triangle) to left of (red) X
  - select function you want to nest (very important: **don't** click on OK)
  - in the formula bar, click on the name of the function you want to continue working on
  - continue building "Number"

Absolute vs. Relative Cell Reference

Default is relative cell reference.

Think of a cell reference in a formula not as just a reference to that cell, but as that cell being a certain distance from the cell in which the formula resides, i.e. some number of columns to the left or right and some number of rows up or down. This relationship is preserved when the formula is moved or copied to another cell. Most of the time that is what you want, but sometimes it isn't, either completely or partially. At this stage you can "lock-down" the column and/or row by putting a $ in front of the column letter and/or row number. Then the column and/or row reference will not change during the move or copy process.

Named ranges and formulas in Exercises 3

P = nRT/V

becomes

=n*R_*T/V

P = nRT/(V – nb) – n²a/V²

becomes

=n*R_*T/(V – n*b) – n*n*a/(V*V)

Named ranges and formulas in Exercises 4

$L = \left(S/\left(fM^{a\_machinery}\right)\right)^{1/a\_labour}$

becomes

=(S/(f*M^a_machinery))^(1/a_labour)

$L = (K - M)/e$

becomes

=(K–M)/e