

Homework 1 (Chapter 1): Introduction to Excel

Demonstration Model 1

Important ideas:

- comments worksheet: just ext
- Summing worksheet
- three different types of formulas (in H6, H12, H18)
- changing values on a spreadsheet – everything instantly updated
- insert row/column – rest of spreadsheet adjusted
- generality of formulas – one produces wrong answer after new column inserted. (why?)
- functions

Demonstration Model 2

Important ideas:

- copying formulas: (File → Down)
- Named Ranges in X*Y column
 - shape of X, Y and XY is the same
 - =X*Y formula does row-by-row element pair multiplication
- new functions: MIN, MAX, AVERAGE, MEDIAN

Demonstration Model 3

Important ideas:

- multiple worksheets: factor out parameters to a separate sheet
- translating mathematical formulas into Excel formulas
 - what parts are cell references
 - what parts are constants
 - what parts are built-in functions
 - inter-worksheet cell references
- graphs

Demonstration Model 4

Important ideas:

- graphs with more than one line
- change parameters (velocity, angle) until you hit the desired target
 - method 1: change data in the cell(s), graph instantly updated (what if analysis)
 - method 2: indicate desired target on graph, spreadsheet adjusts the selected cell (only in Excel 2003)
- new functions and operations introduced: ^, EXP, TAN, COS

Demonstration Model 5

Important ideas:

- statistical analysis
- how do you simulate the throwing of dice in a game of chance?
 - RAND() function – produces a random number in [0,1)
 - multiply by 6 to turn interval into [0,6)
 - divide interval into 6 sub-intervals: [0,1), [1,2), [2,3), [3,4), [4,5), [5,6)
 - associate 1 with interval [0,1), 2 with interval [1,2), etc.
 - how? use “conversion” function (can you use other functions?)
- COUNTIF – count the number of occurrences of a specified value

Exercise 1.1

Important ideas:

- enter month names: enter “September”, then use fill right command
- Excel is smart enough to recognize “September” as a special value
- enter a formula (Total x) and duplicate using fill right command
- notice relative addressing in action w.r.t. column being added up
- observe menu-driven formula creation
- observe point-and-click method for formula creation vs. typing
- tip: learn to use “point-and-click”, should only have to type constants and operators

Exercise 1.2

Important ideas:

- create formulas to allow for adding or removing columns (see Demo 1)
- create a title that spans several columns and is centred. (how?)

Exercise 1.3

Important ideas:

- fill series: special case of fill down (right)
- turn another mathematical formula into an Excel formula
 - trigonometry – convert angles in degrees to radians
- Create a graph
 - Step 1: select type of graph (Insert tab; Line icon)
 - Step 2: select data to be graphed (Select Data icon)
 - (Y axis: Legend Entries (Series))
 - (X axis:)
 - Step 3: select version with desired labels (select from Chart Layouts)
(for fine tuning see Chart Tools/Layout)
- fine tuning
 - click on various parts of chart (move around, resize)
 - right-click on any number along X-axis – select "Format Axis..."
 - similarly for Y-axis