

UE 111
FINANCIAL MODELING AND APPLICATIONS
TD #1 - RANGE OBJECTS

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Exercise 1

1. Write a VBA procedure that colors in blue (vbBlue) every second row of the active worksheet, the first row being colored.
2. Same question, but the procedure must now do this for all the worksheets in the active workbook.

Exercise 2

Assume the Excel user has selected a range (rectangular area) of cells. Write a VBA procedure that will perform the following tasks, whatever the location and the size of the selected range.

1. Color in blue (vbBlue) the upper left corner of the selected range;
2. Color in yellow (vbYellow) the cell located just below the previous cell;
3. Color in red (vbRed) the first row of the range;
4. Color in green (vbGreen) the last column of the range;
5. Color in cyan (vbCyan) the bottom right cell of the range;
6. Color in black (vbBlack) the 2 rows by 2 columns square whose upper left corner corresponds to the upper left corner of the range;
7. Color in magenta (vbMagenta) the cells located 1 row below the cells pertaining to the last row of the selected range;
8. Assume now that the selected range contains numerical values. Write a VBA procedure that turns the background color of the cells into:
 - red if the value contained in the cell is negative;
 - green if the value contained in the cell is positive;
 - blue if the value contained in the cell is equal to 0.
9. Write a VBA procedure that puts a thin double line green border around each cell of the selected range.

Exercise 3

Assume the Excel user has selected a squared range of cells (the number of rows is equal to the number of columns). Write a VBA procedure that will perform the following tasks, whatever the location and the size of the selected range.

1. Color in red the cells pertaining to the diagonals of the selected range;
2. Color in blue the other cells.

Exercise 4

Assume the Excel user has selected a range (rectangular area) of cells containing numerical values. Write a VBA procedure that will perform the following tasks, whatever the location and the size of the selected range.

1. Compute in each of the cells located 1 column to the right of the last column of the selected range the row-wise sum of the cells in the selected range;
2. Compute in each of the cells located 1 row below the last row of the selected range the column-wise sum of the cells in the selected range;
3. Compute in the cell located 1 row below and 1 column to the right of the bottom right corner of the selected range, the sum of the cells in the selected range.

Exercise 5

Note: This exercise uses the data in workbook "TD1.xls" on MyCourse.

Assume you have a worksheet whose structure is the same as "Sheet1" in workbook "TD1.xls". You don't know ex-ante what is the number of available observations.

1. Write a VBA procedure that displays in a *MsgBox* the number of available trading prices.
2. Write a VBA procedure that computes in column D, for each relevant date, the continuous rate of return, i.e. the quantity:

$$r_t = \log\left(\frac{P_{t+1} + D_t}{P_t}\right)$$

where P_t and D_t are the adjusted price and the adjusted dividend on date t , respectively.

3. Write a VBA procedure that computes, for each relevant date, the moving average of order q , i.e. the quantity:

$$MM_t^q = \frac{1}{q} \sum_{\tau=1}^q P_{t-\tau}$$

The value of q will have to be specified by the user through an *InputBox*.

4. Write a VBA procedure that automatically produces, in a new sheet, a graph of type "line" without markers reporting both the value of the adjusted price and the moving average over the whole period. In addition, the VBA program must add the title "Adjusted Price and Moving average", put the dates on the horizontal axis as well as the legends "Adjusted Price" and "Moving average at order q" where q is the moving average order set by the user (see Figure 1 with $q = 50$).

Figure 1: Graph produced by the VBA procedure

