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DU Data Science Bootcamp

Homework #2: VBA Challenge

Due: 6/27/20

Abstract

Please note that only the top section has been screenshot for purposes of this document. To view the full screenshots of the entire data tables created by the VBA script, please review the attached PDFs denoted “2016 Sheet Screenshot”, “2015 Sheet Screenshot”, and “2014 Sheet Screenshot”.

Screenshots of Stock Data VBA Script Results

2016

A picture containing computer

Description automatically generated

2015

A picture containing computer

Description automatically generated

2014

A picture containing computer

Description automatically generated

VBA Script

Please note that this VBA script has been attached in two separate files in two different file types (just in case).

Sub MasterSolution\_VBA\_Homework\_DSC()

Dim ws As Worksheet

' iterate through all worksheets

For Each ws In ActiveWorkbook.Worksheets

ws.Activate

' GENERAL SECTION

' Variables

Dim last\_row As Long

Dim ticker As String

Dim ticker\_index As Integer

Dim header\_index As Integer

Dim open\_price As Double

Dim close\_price As Double

Dim yearly\_change As Double

Dim percent\_change As Double

Dim total\_volume As Double

Dim GPI\_value As Double

Dim GPI\_ticker As String

Dim GPD\_value As Double

Dim GPD\_ticker As String

Dim GTV\_value As Double

Dim GTV\_ticker As String

last\_row = Cells(Rows.Count, 1).End(xlUp).Row

ticker\_index = 0

header\_index = 2

total\_volume = 0

' determine open price on first day and close price on last day in year

' summarize data by ticker

' \*\*\*PLEASE READ: The Homework says to compute the values as of beginning of year and end of year, meaning first day (20160101) and last day (20161230)

For I = 2 To last\_row

' designate first day of year

If Right(Str(Cells(I, 2).Value), 4) = "0101" Then

open\_price = Cells(I, 3).Value

ticker = Cells(I, 1).Value

End If

' designate last day of year

If Right(Str(Cells(I, 2).Value), 4) = "1231" Then

close\_price = Cells(I, 6).Value

ticker = Cells(I, 1).Value

ElseIf Right(Str(Cells(I, 2).Value), 4) = "1230" Then

close\_price = Cells(I, 6).Value

ticker = Cells(I, 1).Value

End If

' compute total volume per ticker

total\_volume = total\_volume + Cells(I, 7)

' compute yearly change per ticker

If ticker <> Cells(I + 1, 1).Value Then

yearly\_change = close\_price - open\_price

' computer percentage change

If open\_price <> 0 Then

percent\_change = yearly\_change / open\_price

Else

percent\_change = 100

End If

' input tickers, yearly change, percentage change, and total stock volume

Range("I" & header\_index).Value = ticker

Range("J" & header\_index).Value = yearly\_change

Range("K" & header\_index).Value = percent\_change

Range("L" & header\_index).Value = total\_volume

' formatting

' negative values are red

If yearly\_change < 0 Then

Range("J" & header\_index).Interior.ColorIndex = 3

' zero values and positive values are green

Else

Range("J" & header\_index).Interior.ColorIndex = 4

End If

' format percentage change as percent

Range("K:K").NumberFormat = "0.00%"

Cells(2, 17).NumberFormat = "0.00%"

Cells(3, 17).NumberFormat = "0.00%"

' add headers

Range("I1").Value = "Ticker"

Range("J1").Value = "Yearly Change"

Range("K1").Value = "Percentage Change"

Range("L1").Value = "Total Stock Volume"

' move header\_index to the next row

header\_index = header\_index + 1

' reset the open\_price and ticker

open\_price = Cells(I + 1, 3).Value

ticker = Cells(I + 1, 1).Value

total\_volume = 0

End If

Next I

' CHALLENGES SECTION

' stats table, far right

' set table headers

Cells(2, 15).Value = "Greatest % Increase"

Cells(3, 15).Value = "Greatest % Decrease"

Cells(4, 15).Value = "Greatest Total Volume"

Cells(1, 16).Value = "Ticker"

Cells(1, 17).Value = "Value"

' input ticker and value for Greatest % Increase (GPI)

GPI\_value = WorksheetFunction.Max(Columns("K"))

Cells(2, 17).Value = GPI\_value

For I = 2 To last\_row

For j = 9 To 12

If Cells(I, j) = GPI\_value Then

GPI\_ticker = Cells(I, 9)

End If

Next j

Next I

Cells(2, 16).Value = GPI\_ticker

' input ticker and value for Greatest % Decrease (GPD)

GPD\_value = WorksheetFunction.Min(Columns("K"))

Cells(3, 17).Value = GPD\_value

For I = 2 To last\_row

For j = 9 To 12

If Cells(I, j) = GPD\_value Then

GPD\_ticker = Cells(I, 9)

End If

Next j

Next I

Cells(3, 16).Value = GPD\_ticker

' input ticker and value for Greatest Total Volume (GTV)

GTV\_value = WorksheetFunction.Max(Columns("L"))

Cells(4, 17).Value = GTV\_value

For I = 2 To last\_row

For j = 9 To 12

If Cells(I, j) = GTV\_value Then

GTV\_ticker = Cells(I, 9)

End If

Next j

Next I

Cells(4, 16).Value = GTV\_ticker

' auto fit data to cells

Columns("I:Q").AutoFit

Next ws

End Sub