University of Denver  
Data Analytics Boot Camp

Module 2 Challenge

VBA Script

Stock Market Analysis

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Sub Stock\_data()

'Loop across all worksheets

For Each ws In Worksheets

Dim WorksheetName As String

WorksheetName = ws.Name

' Define variables and assign data types

Dim TickerSymbol As String

Dim OpeningPrice As Double

Dim ClosingPrice As Double

Dim YearlyChange As Double

Dim PercentChange As Double

Dim TotalVolume As Double

Dim StartData As Integer

' Set starting values

OpeningPrice = ws.Cells(2, 3).Value

TotalVolume = 0

' Create column headers

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

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

ws.Range("K1").Value = "Percent Change"

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

ws.Columns("K").NumberFormat = "0.00%"

' Create Summary Table 2 for Greatest % Increase, Decrease, and Stock Volume

ws.Range("P1").Value = "Ticker"

ws.Range("Q1").Value = "Value"

ws.Range("O2").Value = "Greatest % Increase"

ws.Range("O3").Value = "Greatest % Decrease"

ws.Range("O4").Value = "Greatest Total Volume"

' Get the last row of the spreadsheet

Dim LastRow As Long

LastRow = ws.Cells(Rows.Count, 1).End(xlUp).Row

' Loop through all ticker symbols

Dim SummaryTableRow As Long

SummaryTableRow = 2

For i = 2 To LastRow

If ws.Cells(i + 1, 1).Value <> ws.Cells(i, 1).Value Then

TickerSymbol = ws.Cells(i, 1).Value

ClosingPrice = ws.Cells(i, 6).Value

' Calculate values within one ticker name

YearlyChange = ClosingPrice - OpeningPrice

TotalVolume = TotalVolume + ws.Cells(i, 7).Value

' Check if the opening price is zero to avoid division by zero

If OpeningPrice <> 0 Then

PercentChange = YearlyChange / OpeningPrice

Else

PercentChange = 0

End If

' Print the ticker, yearly change, percent change, and total stock volume in the summary table

ws.Range("I" & SummaryTableRow).Value = TickerSymbol

ws.Range("J" & SummaryTableRow).Value = YearlyChange

ws.Range("L" & SummaryTableRow).Value = TotalVolume

ws.Range("K" & SummaryTableRow).Value = PercentChange

ws.Range("K" & SummaryTableRow).NumberFormat = "0.00%"

' Format cell to reflect green for positive yearly growth and red for negative growth

If ws.Range("J" & SummaryTableRow).Value > 0 Then

ws.Range("J" & SummaryTableRow).Interior.ColorIndex = 4

ElseIf ws.Range("J" & SummaryTableRow).Value < 0 Then

ws.Range("J" & SummaryTableRow).Interior.ColorIndex = 3

End If

' Increase count by one to the summary table row

SummaryTableRow = SummaryTableRow + 1

' Reset yearly change, percent change, and total volume

YearlyChange = 0

TotalVolume = 0

' Change opening price to the next ticker's opening price

OpeningPrice = ws.Cells(i + 1, 3).Value

Else

' Add to the total volume

TotalVolume = TotalVolume + ws.Cells(i, 7).Value

End If

Next i

' Find the greatest % increase, greatest % decrease, and total volume using worksheet functions

Dim GreatestIncrease As Double

Dim GreatestDecrease As Double

Dim GreatestVolume As Double

GreatestIncrease = WorksheetFunction.Max(ws.Range("K2:K" & SummaryTableRow - 1))

GreatestDecrease = WorksheetFunction.Min(ws.Range("K2:K" & SummaryTableRow - 1))

GreatestVolume = WorksheetFunction.Max(ws.Range("L2:L" & SummaryTableRow - 1))

' Find the greatest % increase and pull ticker and value into Summary Table 2

For i = 2 To SummaryTableRow - 1

If ws.Cells(i, 11).Value = GreatestIncrease Then

ws.Range("Q2").Value = "%" & GreatestIncrease \* 100

ws.Range("P2").Value = ws.Cells(i, 9).Value

Exit For

End If

Next i

' Find the greatest % decrease and pull ticker and value into Summary Table 2

For i = 2 To SummaryTableRow - 1

If ws.Cells(i, 11).Value = GreatestDecrease Then

ws.Range("Q3").Value = "%" & GreatestDecrease \* 100

ws.Range("P3").Value = ws.Cells(i, 9).Value

Exit For

End If

Next i

' Find the greatest total volume and pull ticker and value into Summary Table 2

For i = 2 To SummaryTableRow - 1

If ws.Range("L" & i).Value = GreatestVolume Then

ws.Range("Q4").Value = GreatestVolume

ws.Range("P4").Value = ws.Range("I" & i).Value

Exit For

End If

Next i

' Auto fit columns for readability

Columns("J:Q").AutoFit

Next ws

End Sub