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Attribute VB_Name = "Module1"
Sub Multiple_year_stock_data()

Sub processSheets()
    'initialize variables
    Dim ws As Integer, sheetCount As Integer

    'set sheetCount equal to number of sheets in workbook
    sheetCount = Application.Sheets.Count

    'call summarizeStocks sub for each worksheet in workbook
    For ws = 1 To sheetCount
        Worksheets(ws).Activate
        Call summarizeStocks
    Next ws

End Sub

Sub summarizeStocks()

    'declare rawData array and size & looping variables
    Dim rawData() As Variant, rSize As Long, cSize As Integer
    Dim i As Integer, j As Long

    'set values to sizing variables (for raw data array)
    cSize = 6
    rSize = ActiveSheet.Cells(Rows.Count, "A").End(xlDown).Row - 1

    'resize array
    ReDim rawData(cSize, rSize)

    'populate values from sheet to rawData array
    For i = 0 To cSize
        For j = 0 To rSize
            rawData(i, j) = Cells(j + 1, i + 1).Value
        Next j
    Next i

    'declare summarizedData array and size & looping variables
    Dim summarizedData() As Variant, colCount As Integer, rowCount As
Long
    Dim m As Long

    'set values to sizing variables (for summarized data array)
    colCount = 5
    rowCount = 0

    'resize array
    ReDim summarizedData(colCount, rowCount)
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```
    'process raw data & assign appropriate values to summarizedData
array
    For j = 1 To rSize
        For m = 0 To rowCount
            If rawData(0, j) = summarizedData(0, m) Then 'if rawData
and summarizedData abbreviations match
                'analyze date to see if it is max or min
                If rawData(1, j) < summarizedData(1, m) Then 'if
rawData date is before earliest summarizedData date
                    summarizedData(1, m) = rawData(1, j) 'update
summarizedData min date to new min date
                    summarizedData(3, m) = rawData(2, j) 'update
summarizedData open price to new open price
                ElseIf rawData(1, j) > summarizedData(2, m) Then 'if
rawData date is after latest summarizedData date
                    summarizedData(2, m) = rawData(1, j) 'update
summarizedData max date to new max date
                    summarizedData(4, m) = rawData(5, j) 'update
summarizedData open price to new open price
                End If
                summarizedData(5, m) = summarizedData(5, m) +
rawData(6, j) 'update summarizedData stock volume
                Exit For 'exit loop
            ElseIf m = rowCount Then 'if rawData and summarizedData
abbreviations never matched, add as a new abbreviation
                rowCount = rowCount + 1 'increase rowCount to account
for new abbreviation added
                ReDim Preserve summarizedData(colCount, rowCount)
'resize summarizedData & preserve all previous data
                summarizedData(0, m + 1) = rawData(0, j) 'add ticker
abbreviation
                summarizedData(1, m + 1) = rawData(1, j) 'add date to
min date
                summarizedData(2, m + 1) = rawData(1, j) 'add date to
max date
                summarizedData(3, m + 1) = rawData(2, j) 'add open
price
                summarizedData(4, m + 1) = rawData(5, j) 'add close
price
                summarizedData(5, m + 1) = rawData(6, j) 'add volume
                Exit For 'exit loop
            End If
        Next m
    Next j

    'call function to add headers for summarized data & max data
    Call addHeaders

    'create variables to track calculations
    Dim yearlyChange As Double, percentChange As Double
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```
    Dim maxPercentIncrease(1) As Variant, maxPercentDecrease(1) As
Variant, maxTotalVolume(1) As Variant

    'initialize variables
    maxPercentDecrease(1) = 0
    maxPercentIncrease(1) = 0
    maxTotalVolume(1) = 0

    'print summarizedData to sheet
    For m = 1 To rowCount
        Cells(m + 1, 9) = summarizedData(0, m) 'print ticker
abbreviation
        yearlyChange = summarizedData(4, m) - summarizedData(3, m)
'calculate the yearly change in a variable so it can be reused & to
control decimals (close price - open price)
        Cells(m + 1, 10) = yearlyChange 'print yearly change (close
price - open price)

        'check that denominator is not equal to zero
        If summarizedData(3, m) = 0 Then
            percentChange = 0 'if denom is zero, then percent change
is zero
        Else
            percentChange = yearlyChange / summarizedData(3, m)
'calculate percent change in a variable so max increase & decrease can
be calculated
        End If

        Cells(m + 1, 11) = percentChange 'print percent change (yearly
change / open price)
        Cells(m + 1, 12) = summarizedData(5, m) 'print total stock
volume

        'identify if ticker's values are max percent increase or
decrease
        If percentChange < maxPercentDecrease(1) Then 'if
percentChange is less than current maxPercentDecrease
            maxPercentDecrease(0) = summarizedData(0, m) 'assign new
ticker
            maxPercentDecrease(1) = percentChange 'assign new
maxPercentDecrease
        ElseIf percentChange > maxPercentIncrease(1) Then 'if
percentChange is greater than current maxPercentIncrease
            maxPercentIncrease(0) = summarizedData(0, m) 'assign new
ticker
            maxPercentIncrease(1) = percentChange 'assign new
maxPercentIncrease
        End If
```

```
        'identify if ticker's values are max total stock volume
        If summarizedData(5, m) > maxTotalVolume(1) Then 'if total
stock volume is less than current maxTotalVolume
            maxTotalVolume(0) = summarizedData(0, m) 'assign new
ticker
            maxTotalVolume(1) = summarizedData(5, m) 'assign new
maxTotalVolume
        End If
    Next m

    'print max data to cells
    For i = 0 To 1
        Cells(2, 16 + i) = maxPercentIncrease(i)
        Cells(3, 16 + i) = maxPercentDecrease(i)
        Cells(4, 16 + i) = maxTotalVolume(i)
    Next i

    'call function to format all new columns/cells
    Call formatting(rowCount + 1)

End Sub

Sub formatting(rowCount)
    'format Yearly Change and Percent Change with two deicmal places &
Percent Change also adds %
    Range("J:J").NumberFormat = "0.00"
    Range("K:K").NumberFormat = "0.00%"
    Range("Q2:Q3").NumberFormat = "0.00%"

    'add conditional formatting for negative "Yearly Change" values
(RED)
    With Range("J2:J" & rowCount).FormatConditions.Add(xlCellValue,
xlLess, "=0")
        .Interior.ColorIndex = 3 'color cells red
    End With

    'add conditional formatting for positive/0 "Yearly Change" values
(GREEN)
    With Range("J2:J" & rowCount).FormatConditions.Add(xlCellValue,
xlGreaterEqual, "=0")
        .Interior.ColorIndex = 4 'color cells green
    End With

    'resize new columns
    Columns("I:L").AutoFit
    Columns("O:Q").AutoFit
End Sub

Sub addHeaders()
    'add summarized data headers
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```
    Range("I1").Value = "Ticker Symbol"
    Range("J1").Value = "Yearly Change ($)"
    Range("K1").Value = "Percent Change"
    Range("L1").Value = "Total Stock Volume"

    'adding data headers for challenge question
    Range("O2").Value = "Greatest % Increase"
    Range("O3").Value = "Greatest % Decrease"
    Range("O4").Value = "Greatest Total Volume"
    Range("P1").Value = "Ticker"
    Range("Q1").Value = "Value"
End Sub
```