Sub stock\_mkt\_analysis()

'Declare variables

Dim total\_volume As Double 'total volume of stock traded

Dim i As Long 'to designate looping count

Dim stock\_difference As Single 'difference in stock prices from BOY to EOY

Dim j As Integer 'to track all rows placed in new table structure

Dim open\_price As Long 'opening prices of stocks

Dim rowcount As Long 'total number of rows in the data based on count of values in column A

Dim percentchange As Single 'calculate the percentage change in stock prices

'Create table header (column) names for new table output in columns 9-12

Cells(1, 9).Value = "Ticker"

Cells(1, 10).Value = "Yearly Change"

Cells(1, 11).Value = "Percent Change"

Cells(1, 12).Value = "Total Stock Volume"

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"

'Create initial variables as placeholders of sorts for later use

j = 0

total\_volume = 0

stock\_difference = 0

open\_price = 2 'stock price starts in row 2 so that we do not consider the headers as values

'Find number of the last row with data in Column A to get dynamic count for any new sheet in which code is used

rowcount = Cells(Rows.Count, "A").End(xlUp).Row

'Begin looping through the entire data set to select the necessary information (skip first row with headers)

For i = 2 To rowcount

'In Column A, find where the ticker symbol changes (becomes different)by comparing row + 1 to the current row value

'If the value has changed, perform these calculations (calculate all values for this specific ticker symbol)(rules out tickers that have changed)

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

'Add stock volume to the placeholder total of 0 to give the true volume

total\_volume = total\_volume + Cells(i, 7).Value

'Create calculation in the event that the volume is zero (rule out all volumes of 0)

If total\_volume = 0 Then

'If the total volume is zero, then it will autopopulate only the ticker symbol and zeroes for the remaining three columns

Range("I" & 2 + j).Value = Cells(i, 1).Value

Range("J" & 2 + j).Value = 0

Range("K" & 2 + j).Value = "%" & 0 'zero is formatted as a 0 percent

Range("L" & 2 + j).Value = 0

'If the volume is not in fact 0, then the code should go ahead and perform the calculations

Else

'If the first value does not equal zero then this block of code will not run (only meant to address nonzero values)

If Cells(open\_price, 3) = 0 Then 'If there is a value of 0 in the opening price then keep going until you find a non-zero

For nonzero = open\_price To i 'create loop to find first nonzero opening price

If Cells(nonzero, 3).Value <> 0 Then

open\_price = nonzero 'set the opening price to the first nonzero opening price

Exit For 'end the loop now that there is a confirmed nonzero value

End If

Next nonzero

End If

'Calculate Yearly change (BOY to EOY) by subtracting the first nonzero opening price value from the final closing price for that ticker in column F

stock\_difference = Cells(i, 6) - Cells(open\_price, 3)

'Calculate Percent Change by taking the Yearly Change calculated above and dividing it by the first nonzero stock price

percentchange = Round((stock\_difference / Cells(open\_price, 3)) \* 100, 2) 'result is multiplied by 100 and limited to 2 decimal places to match requested output

'First opening price for ticker symbol

open\_price = i + 1

'Print result for nonzero calculations

Range("I" & 2 + j).Value = Cells(i, 1).Value

Range("J" & 2 + j).Value = Round(stock\_difference, 2)

Range("K" & 2 + j).Value = "%" & percentchange 'formatted as a 0 percent

Range("L" & 2 + j).Value = total\_volume

'Conditional Formatting - if greater than zero it will be green, if less than zero then red, if it's = zero then it will be white

Select Case stock\_difference

Case Is > 0

Range("J" & 2 + j).Interior.ColorIndex = 4

Case Is < 0

Range("J" & 2 + j).Interior.ColorIndex = 3

Case Else

Range("J" & 2 + j).Interior.ColorIndex = 0

End Select

End If

'Set variables for next ticker symbol but not including open\_price = 2 because no longer considering the header row

j = j + 1 'now considering an increase by one to exclude previously calculated values

total\_volume = 0

stock\_difference = 0

Else

total\_volume = total\_volume + Cells(i, 7).Value

End If

'End Loop

Next i

'Calculate maximum value in column L to find the stock with the Greatest total volume

Range("Q4") = WorksheetFunction.Max(Range("L2:L" & rowcount))

'Calculate max and min stock values in Column K to find and input the stock with the Greatest percent Increase and Decrease into the appropriate cells

Range("Q2") = "%" & WorksheetFunction.Max(Range("K2:K" & rowcount)) \* 100

Range("Q3") = "%" & WorksheetFunction.Min(Range("K2:K" & rowcount)) \* 100

'Match the ticker symbols from Column A to the numbers derived fromt the above calculations

'Using WorksheetFunction.Match method to return the position of the ticker symbol (instead of VLOOKUP) - finding exact match

maximum\_volume = WorksheetFunction.Match(WorksheetFunction.Max(Range("L2:L" & rowcount)), Range("L2:L" & rowcount), 0)

greatest\_increase = WorksheetFunction.Match(WorksheetFunction.Max(Range("K2:K" & rowcount)), Range("K2:K" & rowcount), 0)

greatest\_decrease = WorksheetFunction.Match(WorksheetFunction.Min(Range("K2:K" & rowcount)), Range("K2:K" & rowcount), 0)

'Input the stock ticker but exclude analyzing the header name

Range("P2") = Cells(greatest\_increase + 1, 9)

Range("P3") = Cells(greatest\_decrease + 1, 9)

Range("P4") = Cells(maximum\_volume + 1, 9)

End Sub