**Requirements**

**Retrieval of Data (20 points)**

* The script loops through one quarter of stock data and reads/ stores all of the following values from each row:
  + ticker symbol (5 points)
  + volume of stock (5 points)
  + open price (5 points)
  + close price (5 points)

A screenshot of a computer

Description automatically generated

**Column Creation (10 points)**

* On the same worksheet as the raw data, or on a new worksheet all columns were correctly created for:
  + ticker symbol (2.5 points)
  + total stock volume (2.5 points)
  + quarterly change ($) (2.5 points)
  + percent change (2.5 points)

A screenshot of a computer

Description automatically generated

**Conditional Formatting (20 points)**

* Conditional formatting is applied correctly and appropriately to the quarterly change column (10 points)
* Conditional formatting is applied correctly and appropriately to the percent change column (10 points)A screenshot of a computer

  Description automatically generated

**Calculated Values (15 points)**

* All three of the following values are calculated correctly and displayed in the output:
  + Greatest % Increase (5 points)
  + Greatest % Decrease (5 points)
  + Greatest Total Volume (5 points)

A screenshot of a computer

Description automatically generated

**Looping Across Worksheet (20 points)**

* The VBA script can run on all sheets successfully.
* Sub StockallQuarter()
* ' Create variables
* Dim i As Long
* Dim lastrow As Long
* Dim ticker As String
* Dim total\_stock As Double
* Dim Summary\_Table\_Row As Long
* Dim Q As Worksheet
* Dim open\_qrt As Double
* Dim close\_qrt As Double
* Dim qrt\_change As Double
* Dim Price\_change As Double
* Dim maxvalue As Double
* Dim minvalue As Double
* Dim maxticker As String
* Dim minticker As String
* Dim maxvol As Double
* Dim maxvolticker As String
* Dim sheetNames As Variant
* Dim summaryRowOffset As Long
* ' List of worksheets to loop through
* sheetNames = Array("Q1", "Q2", "Q3", "Q4")
* ' Loop through each sheet
* For Each sheetName In sheetNames
* Set Q = Worksheets(sheetName)
* total\_stock = 0
* Summary\_Table\_Row = 2 ' Start summary table from row 2
* lastrow = Q.Cells(Rows.Count, "A").End(xlUp).Row ' Find last row in the current sheet
* ' Loop through rows in the column
* For i = 2 To lastrow
* ' Check if we are at the last row or if the next ticker is different
* If i = lastrow Or Q.Cells(i + 1, 2).Value <> Q.Cells(i, 2).Value Then
* ticker = Q.Cells(i, 2).Value ' Current ticker
* close\_qrt = Q.Cells(i, 7).Value ' Get the closing price (Column G)
* ' Set the opening price for the first occurrence of the ticker
* open\_qrt = Q.Cells(i - (Application.CountIf(Q.Range("B2:B" & i), ticker) - 1), 4).Value ' Column D
* ' Print the Ticker in the Summary Table
* Q.Range("K" & Summary\_Table\_Row).Value = ticker
* ' Sum up stocks for this ticker
* total\_stock = total\_stock + Q.Cells(i, 8).Value ' Assuming stock value is in column H (8)
* ' Print the total stock amount in the summary table
* Q.Range("N" & Summary\_Table\_Row).Value = total\_stock
* ' Calculate the quarterly change
* qrt\_change = close\_qrt - open\_qrt ' Closing - Opening
* If (qrt\_change <= 0) Then
* Q.Range("L" & Summary\_Table\_Row).Interior.ColorIndex = 3 ' Red
* Else
* Q.Range("L" & Summary\_Table\_Row).Interior.ColorIndex = 4 ' Green
* End If
* ' Calculate price change, check for division by zero
* If open\_qrt <> 0 Then
* Price\_change = (close\_qrt - open\_qrt) / open\_qrt
* Else
* Price\_change = 0 ' Handle potential division by zero
* End If
* If (Price\_change <= 0) Then
* Q.Range("M" & Summary\_Table\_Row).Interior.ColorIndex = 9 ' Red
* Else
* Q.Range("M" & Summary\_Table\_Row).Interior.ColorIndex = 10 ' Green
* End If
* ' Output values in the summary table
* Q.Range("O" & Summary\_Table\_Row).Value = open\_qrt
* Q.Range("P" & Summary\_Table\_Row).Value = close\_qrt
* Q.Range("L" & Summary\_Table\_Row).Value = qrt\_change
* ' Format Price\_change as a percentage
* Q.Range("M" & Summary\_Table\_Row).Value = Price\_change
* Q.Range("M" & Summary\_Table\_Row).NumberFormat = "0.00%" ' Formats the cell as a percentage
* ' Move to the next row in the summary table
* Summary\_Table\_Row = Summary\_Table\_Row + 1
* ' Reset total\_stock for the next ticker
* total\_stock = 0
* Else
* ' Add to the total stock for the current ticker
* total\_stock = total\_stock + Q.Cells(i, 8).Value
* End If
* Next i
* ' Calculate max and min values from the summary table
* maxvalue = Application.WorksheetFunction.Max(Q.Range("M2:M" & Summary\_Table\_Row - 1)) ' Quarterly change
* minvalue = Application.WorksheetFunction.Min(Q.Range("M2:M" & Summary\_Table\_Row - 1))
* maxvol = Application.WorksheetFunction.Max(Q.Range("N2:N" & Summary\_Table\_Row - 1)) ' Max volume
* ' Find ticker associated with max value
* For i = 2 To Summary\_Table\_Row - 1
* If Q.Range("M" & i).Value = maxvalue Then
* maxticker = Q.Range("K" & i).Value
* Exit For
* End If
* Next i
* ' Find ticker associated with min value
* For i = 2 To Summary\_Table\_Row - 1
* If Q.Range("M" & i).Value = minvalue Then
* minticker = Q.Range("K" & i).Value
* Exit For
* End If
* Next i
* ' Find ticker associated with max volume
* For i = 2 To Summary\_Table\_Row - 1
* If Q.Range("N" & i).Value = maxvol Then
* maxvolticker = Q.Range("K" & i).Value
* Exit For
* End If
* Next i
* ' Output the max and min values and their associated tickers in summary
* Q.Range("T2").Value = maxvalue
* Q.Range("T2").NumberFormat = "0.00%" ' Formats the cell as a percentage
* Q.Range("S2").Value = maxticker
* Q.Range("T3").Value = minvalue
* Q.Range("T3").NumberFormat = "0.00%" ' Formats the cell as a percentage
* Q.Range("S3").Value = minticker
* Q.Range("T4").Value = maxvol
* Q.Range("S4").Value = maxvolticker ' Output max volume ticker
* Next sheetName
* End Sub

**GitHub/GitLab Submission (15 points)**

* All three of the following are uploaded to GitHub/GitLab:
  + Screenshots of the results (5 points)
  + Separate VBA script files (5 points)
  + README file

A screenshot of a computer

Description automatically generated

**Grading**

This assignment will be evaluated against the requirements and assigned a grade according to the following table:

| **Grade** | **Points** |
| --- | --- |
| A (+/-) | 90+ |
| B (+/-) | 80–89 |
| C (+/-) | 70–79 |
| D (+/-) | 60–69 |
| F (+/-) | < 60 |

**Submission**

To submit your Challenge assignment, click Submit, and then provide the URL of your GitHub repository for grading.

**note**

You are allowed to miss up to two Challenge assignments and still earn your certificate. If you complete all Challenge assignments, your lowest two grades will be dropped. If you wish to skip this assignment, click Next, and proceed to the next module.

Comments are disabled for graded submissions in Bootcamp Spot. If you have questions about your feedback, please notify your instructional staff or your Student Success Advisor. If you would like to resubmit your work for an additional review, you can use the Resubmit Assignment button to upload new links. You may resubmit up to three times for a total of four submissions.

**important**

**It is your responsibility to include a note in the README section of your repo specifying code source and its location within your repo**. This applies if you have worked with a peer on an assignment, used code in which you did not author or create sourced from a forum such as Stack Overflow, or you received code outside curriculum content from support staff such as an Instructor, TA, Tutor, or Learning Assistant. This will provide visibility to grading staff of your circumstance in order to avoid flagging your work as plagiarized.

If you are struggling with a challenge assignment or any aspect of the academic curriculum, please remember that there are student support services available for you:

1. Ask the class Slack channel/peer support.
2. AskBCS Learning Assistants exists in your class Slack application.
3. Office hours facilitated by your instructional staff before and after each class session.
4. [Tutoring Guidelines](https://docs.google.com/document/d/1hTldEfWhX21B_Vz9ZentkPeziu4pPfnwiZbwQB27E90/edit?usp=sharing) - schedule a tutor session in the Tutor Sessions section of Bootcampspot - Canvas
5. If the above resources are not applicable and you have a need, please reach out to a member of your instructional team, your Student Success Advisor, or submit a support ticket in the Student Support section of your BCS application.

**References**

Data for this dataset was generated by edX Boot Camps LLC, and is intended for educational purposes only.