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Data Analytics Boot Camp Program

**Module 1: VBA**

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**1) VBA Script (Easy)**

Based on the provided data of this study exercise, the three main conclusions that can be drawn from analyzing the sample data set of 4,114 Kickstarter campaigns are:

Sub easy()

'------------------------

'Loop through all sheets

‘------------------------

Dim ws As Worksheet

'For Each ws In Worksheets

For Each ws In ActiveWorkbook.Worksheets

ws.Activate

'Set initial variable for the stock ticker

Dim Stock\_Ticker As String

'Set initial variable for the stock volume AND set the value equal to zero

Dim Total\_Volume As Double

Total\_Volume = 0

'Keep track of the location for each stock ticker in a summary table AND set the initial cell value for each stock ticker

Dim Summary\_Table\_Row As Integer

Summary\_Table\_Row = 2

'Place on summary table row the ticker header AND the volume header

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

Cells(1, 10).Value = "Total Stock Volume"

'Determine the last row

LastRow = ws.Cells(Rows.Count, 7).End(xlUp).Row

'Loop through all date range volume

For i = 2 To LastRow

'Check if we are still within the same stock ticker

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

'Set the stock ticker name

Stock\_Ticker = Cells(i, 1).Value

'Add to the Total Volume

Total\_Volume = Total\_Volume + Cells(i, 7).Value

'Print the stock ticker name to the Summary Table

Range("I" & Summary\_Table\_Row).Value = Stock\_Ticker

'Print the total volume amount to the Summary Table

Range("J" & Summary\_Table\_Row).Value = Total\_Volume

'Add one row to the summary table

Summary\_Table\_Row = Summary\_Table\_Row + 1

'Reset the Total Volume

Total\_Volume = 0

Else

'Add to the total volume

Total\_Volume = Total\_Volume + Cells(i, 7).Value

End If

Next i

'Auto fit to display data

ws.Columns("I:J").AutoFit

Next ws

MsgBox ("Volume Complete")

End Sub

**2) VBA Script (Moderate)**

Sub moderate()

'------------------------

'Loop through all sheets

'------------------------

Dim ws As Worksheet

'For Each ws In Worksheets

For Each ws In ActiveWorkbook.Worksheets

ws.Activate

'Set initial variable for the stock ticker

Dim Stock\_Ticker As String

'Set initial variable for the stock volume AND set the value equal to zero

Dim Total\_Volume As Double

Total\_Volume = 0

'Set the initial variable for the initial date of year close AND set the value equal to the first date

Dim Open\_Year\_Close As Double

Open\_Year\_Close = Cells(2, 6).Value

'Set the initial variable for the final date of year close

Dim End\_Year\_Close As Double

'Set the initial variable for the number change

Dim num\_change As Single

'Set the initial variable for the % change

Dim per\_change As Single

'Keep track of the location for each stock ticker in a summary table AND set the initial cell value for each stock ticker

Dim Summary\_Table\_Row As Integer

Summary\_Table\_Row = 2

'Place on summary table row the ticker header AND the volume header

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

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

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

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

'Determine the last row

LastRow = ws.Cells(Rows.Count, 7).End(xlUp).Row

'Loop through all date range volume

For i = 2 To LastRow

'Check if we are still within the same stock ticker

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

'Set the stock ticker name

Stock\_Ticker = Cells(i, 1).Value

'Add to the total volume

Total\_Volume = Total\_Volume + Cells(i, 7).Value

'Print the stock ticker name to the Summary Table

Range("I" & Summary\_Table\_Row).Value = Stock\_Ticker

'Print the total volume amount to the Summary Table

Range("L" & Summary\_Table\_Row).Value = Total\_Volume

'Reset the total volume

Total\_Volume = 0

'Set the value for the end of year close

End\_Year\_Close = Cells(i, 6).Value

'Calculate the yearly change

num\_change = (End\_Year\_Close - Open\_Year\_Close)

'Print the yearly change amount to the Summary Table

Range("J" & Summary\_Table\_Row).Value = num\_change

'Change color based on number change positive or negative

If num\_change > 0 Then

Cells(Summary\_Table\_Row, 10).Interior.ColorIndex = 4

Else

Cells(Summary\_Table\_Row, 10).Interior.ColorIndex = 3

End If

'Reset the yearly change

num\_change = 0

'Check to see that new open year close > 0

If Cells(i, 6).Value > 0 Then

'Calculate the % change

per\_change = ((End\_Year\_Close - Open\_Year\_Close) / Open\_Year\_Close)

'Print the % change amount to the Summary Table

Range("K" & Summary\_Table\_Row).Value = per\_change

'Add one row to the summary table

Summary\_Table\_Row = Summary\_Table\_Row + 1

'Reset the % change

per\_change = 0

'Set the new open year close

Open\_Year\_Close = Cells(i + 1, 6).Value

Else

'Add one row to the summary table

Summary\_Table\_Row = Summary\_Table\_Row + 1

'Set the new open year close

Open\_Year\_Close = Cells(i + 1, 6).Value

End If

Else

'Add to the total volume

Total\_Volume = Total\_Volume + Cells(i, 7).Value

End If

Next i

'Auto fit to display data

ws.Columns("I:L").AutoFit

'Add percent format

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

Next ws

MsgBox ("Percent Change Complete")

End Sub

**3) VBA Script (Hard)**

Sub hard()

'------------------------

'Loop through all sheets

'------------------------

Dim ws As Worksheet

'For Each ws In Worksheets

For Each ws In ActiveWorkbook.Worksheets

ws.Activate

'Set initial variable for the stock ticker

Dim Stock\_Ticker As String

'Set initial variable for the stock volume AND set the value equal to zero

Dim Total\_Volume As Double

Total\_Volume = 0

'Set the initial variable for the initial date of year close AND set the value equal to the first date

Dim Open\_Year\_Close As Double

Open\_Year\_Close = Cells(2, 6).Value

'Set the initial variable for the final date of year close

Dim End\_Year\_Close As Double

'Set the initial variable for the number change

Dim num\_change As Single

'Set the initial variable for the % change

Dim per\_change As Single

'Set the initial variable for the greatest % increase

Dim Max\_Per As Double

'Set the initial variable for the lowest % increase

Dim Min\_Per As Double

'Set the initial variable for the highest volume

Dim Highest\_Vol As Double

'Set the initial variable to set the range for the ticker of the greatest % increase

Dim Match\_Max\_Ticker As Integer

'Set the initial variable to set the range for the ticker of the lowest % increase

Dim Match\_Min\_Ticker As Integer

'Set the initial variable to set the range for the ticker of the highest volume

Dim Match\_Vol\_Ticker As Double

'Keep track of the location for each stock ticker in a summary table AND set the initial cell value for each stock ticker

Dim Summary\_Table\_Row As Integer

Summary\_Table\_Row = 2

'Place on summary table row the ticker header AND the volume header

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(1, 16).Value = "Ticker"

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

'Place the names on the new labeled rows for the summary table

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

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

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

'Determine the last row

LastRow = ws.Cells(Rows.Count, 7).End(xlUp).Row

'Loop through all date range volume

For i = 2 To LastRow

'Check if we are still within the same stock ticker

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

'Set the stock ticker name

Stock\_Ticker = Cells(i, 1).Value

'Add to the total volume

Total\_Volume = Total\_Volume + Cells(i, 7).Value

'Print the stock ticker name to the Summary Table

Range("I" & Summary\_Table\_Row).Value = Stock\_Ticker

'Print the total volume amount to the Summary Table

Range("L" & Summary\_Table\_Row).Value = Total\_Volume

'Reset the total volume

Total\_Volume = 0

'Set the value for the end of year close

End\_Year\_Close = Cells(i, 6).Value

'Calculate the yearly change

num\_change = (End\_Year\_Close - Open\_Year\_Close)

'Print the yearly change amount to the Summary Table

Range("J" & Summary\_Table\_Row).Value = num\_change

'Change color based on number change positive or negative

If num\_change > 0 Then

Cells(Summary\_Table\_Row, 10).Interior.ColorIndex = 4

Else

Cells(Summary\_Table\_Row, 10).Interior.ColorIndex = 3

End If

'Reset the yearly change

num\_change = 0

'Check to see that new open year close > 0

If Cells(i, 6).Value > 0 And Open\_Year\_Close <> 0 Then

'Calculate the % change

per\_change = ((End\_Year\_Close - Open\_Year\_Close) / Open\_Year\_Close)

'Print the % change amount to the Summary Table

Range("K" & Summary\_Table\_Row).Value = per\_change

'Add one row to the summary table

Summary\_Table\_Row = Summary\_Table\_Row + 1

'Reset the % change

per\_change = 0

'Set the new open year close

Open\_Year\_Close = Cells(i + 1, 6).Value

Else

'Add one row to the summary table

Summary\_Table\_Row = Summary\_Table\_Row + 1

'Set the new open year close

Open\_Year\_Close = Cells(i + 1, 6).Value

End If

Else

'Add to the total volume

Total\_Volume = Total\_Volume + Cells(i, 7).Value

End If

Next i

'Find the max % increase in range

Max\_Per = WorksheetFunction.Max(Range("K:K"))

'Print the max % into the summary table

Cells(2, 17).Value = Max\_Per

'Find the stock ticker that belongs to max % increase

Match\_Max\_Ticker = WorksheetFunction.Match(Max\_Per, Range("K:K"), 0)

'Place the stock ticker that belongs to max % increase in table

Cells(2, 16).Value = Cells(Match\_Max\_Ticker, 9)

'Find the min % increase in range

Min\_Per = WorksheetFunction.Min(Range("K:K"))

'Print the max % into the summary table

Cells(3, 17).Value = Min\_Per

'Find the stock ticker that belongs to max % increase

Match\_Min\_Ticker = WorksheetFunction.Match(Min\_Per, Range("K:K"), 0)

'Place the stock ticker that belongs to max % increase in table

Cells(3, 16).Value = Cells(Match\_Min\_Ticker, 9)

'Find the highest volume increase in range

Highest\_Vol = WorksheetFunction.Max(Range("L:L"))

'Print the max % into the summary table

Cells(4, 17).Value = Highest\_Vol

'Find the stock ticker that belongs to max % increase

Match\_Vol\_Ticker = WorksheetFunction.Match(Highest\_Vol, Range("L:L"), 0)

'Place the stock ticker that belongs to max % increase in table

Cells(4, 16).Value = Cells(Match\_Vol\_Ticker, 9)

'Auto fit to display data

ws.Columns("I:Q").AutoFit

'Add percent format

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

Range("Q2:Q3").NumberFormat = ("0.00%")

Next ws

MsgBox ("Max/Min Complete")

End Sub