Before Refactoring

```
Sub yearValueAnalysis()

    Dim startTime As Single
    Dim endTime  As Single

yearValue = InputBox("What year would you like to run the analysis on?")

startTime = Timer

'Format the output sheet on the "All Stocks Analysis" worksheet.

    Worksheets("AllStocksAnalysis").Activate


    Range("A1").Value = "All Stocks (" + yearValue + ")"

    'Create a header row
    Cells(3, 1).Value = "Year"
    Cells(3, 2).Value = "Total Daily Volume"
    Cells(3, 3).Value = "Return"

'Initialize an array of all tickers.

    Dim tickers(12) As String

    tickers(0) = "AY"
    tickers(1) = "CSIQ"
    tickers(2) = "DQ"
    tickers(3) = "ENPH"
    tickers(4) = "FSLR"
    tickers(5) = "HASI"
    tickers(6) = "JKS"
    tickers(7) = "RUN"
    tickers(8) = "SEDG"
    tickers(9) = "SPWR"
    tickers(10) = "TERP"
    tickers(11) = "VSLR"

'Initialize variables for the starting price and ending price.

    Dim startPrice As Single
    Dim endingPrice As Single

'Activate the data worksheet.

    Worksheets(yearValue).Activate

'Find the number of rows to loop over.

    RowCount = Cells(rows.Count, "A").End(xlUp).Row


'Loop through the tickers. Inside the for loop (i) get the ticket from the
' array - tickers(i) - (array also = list, ) and assign it to a ticker variable (ticker)

    For i = 0 To 11

        ticker = tickers(i)

        'Set the count to 0
        totalVolume = 0

        'Loop through rows in the data.
         Worksheets(yearValue).Activate

         For j = 2 To RowCount

            'Find the total volume for the current ticker.
            If Cells(j, 1).Value = ticker Then
```

After Refactoring

```
Sub AllStocksAnalysisRefactored()

    Dim startTime As Single
    Dim endTime  As Single

    yearValue = InputBox("What year would you like to run the analysis   on?")

    startTime = Timer

    'Format the output sheet on All Stocks Analysis worksheet

    Worksheets("AllStocksAnalysis").Activate

    Range("A1").Value = "All Stocks (" + yearValue + ")"

    'Create a header row
    Cells(3, 1).Value = "Ticker"
    Cells(3, 2).Value = "Total Daily Volume"
    Cells(3, 3).Value = "Return"

    'Initialize array of all tickers
    Dim tickers(12) As String

    tickers(0) = "AY"
    tickers(1) = "CSIQ"
    tickers(2) = "DQ"
    tickers(3) = "ENPH"
    tickers(4) = "FSLR"
    tickers(5) = "HASI"
    tickers(6) = "JKS"
    tickers(7) = "RUN"
    tickers(8) = "SEDG"
    tickers(9) = "SPWR"
    tickers(10) = "TERP"
    tickers(11) = "VSLR"

    'Activate data worksheet
    Worksheets(yearValue).Activate

    'Get the number of rows to loop over
    RowCount = Cells(rows.Count, "A").End(xlUp).Row

    '1a) Create a ticker Index

    tickerIndex = 0

    '1b) Create three output arrays

    Dim tickerVolumes(12) As Long
    Dim tickerStartingPrices(12) As Single
    Dim tickerEndingPrices(12) As Single


    ''2a) Create a for loop to initialize the tickerVolumes to zero.
      For i = 0 To 11

       'Set the count to 0
       tickerVolumes(i) = 0

      Next i
     '2b) Loop over all the rows in the spreadsheet.
       For j = 2 To RowCount


        '3a) Increase volume for current ticker

          tickerVolumes(tickerIndex) = tickerVolumes(tickerIndex) + Cells(i,
8).Value
```

```
        totalVolume = totalVolume + Cells(j, 8).Value

        End If

        'Find the starting price for the current ticker.
        If Cells(j - 1, 1).Value <> ticker And Cells(j, 1).Value = ticker Then

        startingPrice = Cells(j, 6).Value

        End If

        'Find the ending price for the current ticker.

        If Cells(j + 1, 1).Value <> ticker And Cells(j, 1).Value = ticker Then

        endingPrice = Cells(j, 6).Value

        End If

      Next j


    'Output the data for the current ticker.
      Worksheets("AllStocksAnalysis").Activate
      Cells(4 + i, 1).Value = ticker
      Cells(4 + i, 2).Value = totalVolume
      Cells(4 + i, 3).Value = endingPrice / startingPrice - 1

    Next i

    ' Formatting
    Worksheets("AllStocksAnalysis").Activate
    Range("A1").Font.Bold = True
    Range("A1").Borders(xlEdgeBottom).LineStyle = xlContinuous
    Range("A3:C3").Font.Bold = True
    Range("A3:C3").Borders(xlEdgeBottom).LineStyle = xlContinuous
    Range("A1").Font.ColorIndex = 5
    Range("B4:B16").NumberFormat = "$#,##0.00"
    Range("C4:C16").NumberFormat = "0.00%"
    Columns("B").AutoFit

    dataRowStart = 4
    dataRowEnd = 15
    For i = dataRowStart To dataRowEnd

      If Cells(i, 3) > 0 Then

        'Color the cell green
        Cells(i, 3).Interior.Color = vbGreen

      ElseIf Cells(i, 3) < 0 Then

        'Color the cell red
        Cells(i, 3).Interior.Color = vbRed

      Else

        'Clear the cell color
        Cells(i, 3).Interior.Color = xlNone

      End If

    Next i

    endTime = Timer

    MsgBox "This code ran in " & (endTime - startTime) & " seconds for the
year " & (yearValue)

End Sub
```

```
        '3b) Check if the current row is the first row with the selected tickerIndex.
          If Cells(j - 1, 1).Value <> tickers(tickerIndex) And Cells(j, 1).Value =
tickers(tickerIndex) Then

          tickerStartingPrices(tickerIndex) = Cells(j, 6).Value

          End If

        '3c) check if the current row is the last row with the selected tickerIndex
         'If the next row's ticker doesn't match, increase the tickerIndex.
        'If  Then

          If Cells(j + 1, 1).Value <> tickers(tickerIndex) And Cells(j, 1).Value =
tickers(tickerIndex) Then

          tickerEndingPrices(tickerIndex) = Cells(j, 6).Value

          End If


        '3d Increase the tickerIndex.
          If Cells(j, 1).Value = tickers(tickerIndex) And Cells(j + 1, 1).Value <>
tickers(tickerIndex) Then

          tickerIndex = tickerIndex + 1

          End If

        Next j

        '4) Loop through your arrays to output the Ticker, Total Daily Volume, and
Return.

        For i = 0 To 11

        Worksheets("AllStocksAnalysis").Activate
        Cells(4 + i, 1).Value = tickers(i)
        Cells(4 + i, 2).Value = tickerVolumes(i)
        Cells(4 + i, 3).Value = tickerEndingPrices(i) / tickerStartingPrices(i) - 1

        Next i

      'Formatting
      Worksheets("AllStocksAnalysis").Activate
      Range("A3:C3").Font.FontStyle = "Bold"
      Range("A3:C3").Borders(xlEdgeBottom).LineStyle = xlContinuous
      Range("B4:B15").NumberFormat = "$#,##0.00"
      Range("C4:C15").NumberFormat = "0.00%"
      Columns("B").AutoFit

      dataRowStart = 4
      dataRowEnd = 15

      For i = dataRowStart To dataRowEnd

        If Cells(i, 3) > 0 Then

          Cells(i, 3).Interior.Color = vbGreen

        Else

          Cells(i, 3).Interior.Color = vbRed

        End If

      Next i

      endTime = Timer
      MsgBox "This code ran in " & (endTime - startTime) & " seconds for the year "
& (yearValue)

End Sub
```