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

            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
```

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.
     'Set the count to 0

        tickerVolumes(i) = 0

    '2b) Loop over all the rows in the spreadsheet

    Worksheets(yearValue).Activate

    For i = 2 To RowCount


       '3a) Increase volume for current ticker


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


       '3b) Check if the current row is the first row with the selected tickerIndex.


        If Cells(i, 1).Value = tickers(tickerIndex) And Cells(i - 1, 1).Value <>
       tickers(tickerIndex) Then

        tickerStartingPrices(tickerIndex) = Cells(i, 6).Value
```

```
        '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
```

```
        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(i, 1).Value = tickers(tickerIndex) And Cells(i + 1, 1).Value <>
        tickers(tickerIndex) Then

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

        End If

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

          tickerIndex = tickerIndex + 1

        End If



    Next i


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


      Worksheets("AllStocksAnalysis").Activate
      For i = 0 To 11

      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
```