

## Download Stock Quotes to Excel

*<http://spreadsheetml.com/finance/freedownloadstockquotes.shtml>*

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# 1. Automating the download of Stock Quotes

This document will show you how to automate the download of the Stock Quotes. We will be using a simple programming language called Visual Basic for Applications (VBA). If you will like to find out more about VBA, you will be interested to know that spreadsheetml.com offers a VBA course on our website. Otherwise, please be assured that we will be going through the steps, one at a time to allow you to construct the models without prior knowledge of VBA.

Note: In May 2017, the "tables" and "ichart" API from Yahoo to download historical stock data was discontinued by the Yahoo Finance team. The following illustrates the new method of using the "query1" API to download historical stock data. A "cookie" and a "crumb" is required to call this new API successfully. The VBA programming codes for extracting these two components is shown below.

Launch Excel and create a new workbook. Call this workbook AutomatedDownloadData.xlsm.

In Microsoft Excel 2003: Go to Tools->Macro->Visual Basic Editor

In Microsoft Excel 2007-2016: Go to Developer->Visual Basic

Right click on VBAProject (your Excel Filename) and select Insert->Module. A default Module1 will be inserted. Click on Module1 and paste the VBA code below on the right-hand side of the Visual Basic Editor. The following VBA code allows you to download data from Yahoo Finance using a specified Stock symbol, Start Date and End Date.

```
Sub GetStock(ByVal stockSymbol As String, ByVal StartDate As Date, ByVal EndDate As Date)

    Dim crumb           As String
    Dim cookie           As String
    Dim response         As String
    Dim strUrl As String
    Dim DownloadURL As String
    Dim period1, period2 As String
    Dim httpReq As WinHttp.WinHttpRequest
    Set httpReq = New WinHttp.WinHttpRequest

    Application.ScreenUpdating = False

    DownloadURL = "https://finance.yahoo.com/lookup?s=" & stockSymbol
    With httpReq
        .Open "GET", DownloadURL, False
        .setRequestHeader "Content-Type", "application/x-www-form-urlencoded; charset=UTF-8"
        .send
        .waitForResponse
        response = .responseText
        cookie = Split(.getResponseHeader("Set-Cookie"), ";")(0)
    End With

    period1 = (StartDate - DateValue("January 1, 1970")) * 86400
    period2 = (EndDate - DateValue("January 1, 1970")) * 86400

    Dim counter As Long
    Dim startCounter As Long
```

```

Dim result As String

crumb = Chr(34) & "CrumbStore" & Chr(34) & ":{" & Chr(34) & "crumb" & Chr(34) & ":" &
Chr(34)
startCounter = InStr(response, crumb) + Len(crumb)
While Mid(response, startCounter, 1) <> Chr(34)
    result = result & Mid(response, startCounter, 1)
    startCounter = startCounter + 1
Wend
crumb = result
DownloadURL = "https://query1.finance.yahoo.com/v7/finance/download/" & stockSymbol &
"?period1=" & period1 & "&period2=" & period2 & "&interval=1d&events=history&crumb=" &
crumb

With httpReq
    .Open "GET", DownloadURL, False
    .setRequestHeader "Cookie", cookie
    .send
    .waitForResponse
    dataResult = .responseText
End With

dataResult = Replace(dataResult, ",", vbTab)

Dim dataObj As New DataObject
dataObj.SetText dataResult
dataObj.PutInClipboard

Set currentWorksheet = ThisWorkbook.ActiveSheet
Set currentRange = currentWorksheet.Range("A1")
dataObj.GetFromClipboard
currentRange.PasteSpecial

ActiveWindow.SmallScroll Down:=-12
Columns("A:A").TextToColumns Destination:=Range("A1"), DataType:=xlDelimited, _
    TextQualifier:=xlDoubleQuote, ConsecutiveDelimiter:=False, Tab:=True, _
    Semicolon:=False, Comma:=True, Space:=False, Other:=False, FieldInfo _
    :=Array(Array(1, 1), Array(2, 1), Array(3, 1), Array(4, 1), Array(5, 1), Array(6, 1), _
    Array(7, 1))
Columns("A:F").EntireColumn.AutoFit
Range("A1").Select

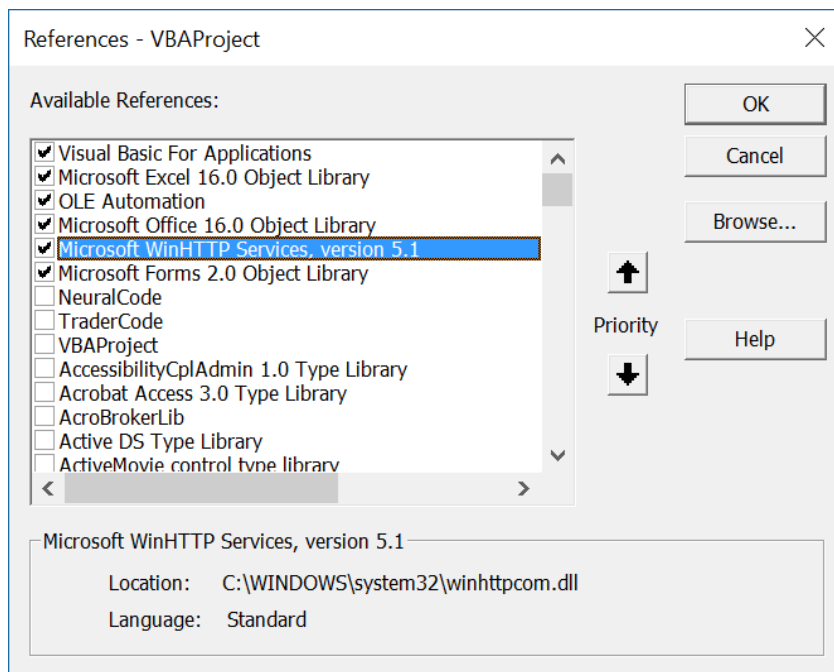
Application.ScreenUpdating = True

End Sub

Sub Download()
    Call GetStock("BAC", "01/01/2017", "06/21/2017")
End Sub

```

Next, in the Microsoft Visual Basic for Applications editor, click on the Tools->Reference menu item and ensure that "Microsoft WinHTTPServices" and "Microsoft Forms 2.0 Object Library" are included. If you do not see "Microsoft.WinHTTPServices", you can click on the "Browse" button and then navigate to the "C:\Windows\System32\" folder to add "winhttpcom.dll".



Click on Save and then File->Close to return to Microsoft Excel. In Excel, try out the downloading of data by going to

Excel 2003: Go to Tools->Macro->Macros..., select the Download macro and click run  
Excel 2007-2016: Go to Developer->Macros, select the Download macro and click run.

and press the Enter key. This will initiate a download of Stock Prices from Yahoo! Finance.

What we have written is a subroutine that downloads stock data automatically and can be executed by Excel. It takes "stockSymbol", "StartDate" and "EndDate" as parameters.

In the whole block of code above, the most important part is the following.

```
DownloadURL = "https://query1.finance.yahoo.com/v7/finance/download/" & stockSymbol &
"?period1=" & period1 & "&period2=" & period2 & "&interval=1d&events=history&crumb=" &
crumb

With httpReq
    .Open "GET", DownloadURL, False
    .setRequestHeader "Cookie", cookie
    .send
    .waitForResponse
    dataResult = .responseText
End With
```

It basically says that we will be downloading data from DownloadURL:

https://query1.finance.yahoo.com/v7/finance/download/" & stockSymbol & "?period1=" & period1 & "&period2=" & period2 & "&interval=1d&events=history&crumb=" & crumb

- stockSymbol is the variable containing a stock symbol such as "BAC".
- period1 and period2 specifies the start date and end date to download data.
- The "cookie" and "crumb" (extracted from response) required is extracted with the following VBA codes.

```
DownloadURL = "https://finance.yahoo.com/lookup?s=" & stockSymbol
With httpReq
    .Open "GET", DownloadURL, False
    .setRequestHeader "Content-Type", "application/x-www-form-urlencoded; charset=UTF-8"
    .send
    .waitForResponse
    response = .responseText
    cookie = Split(.getResponseHeader("Set-Cookie"), ";")(0)
End With
```

Save this workbook and you can use it to download stock data for the various technical indicators. You can also find the implementation of this example in the workbook DownloadStockQuotes.xlsm.