Module 2 Challenge

Start Assignment

Due Jun 22 by 11:59pm   **Points** 100   **Submitting** a text entry box or a website url

Background

You are well on your way to becoming a programmer and Excel expert! In this homework assignment, you will use VBA scripting to analyze generated stock market data.

Before You Begin

1. Create a new repository for this project called `VBA-challenge`. **Do not add this assignment to an existing repository**.

2. Inside the new repository that you just created, add any VBA files that you use for this assignment. These will be the main scripts to run for each analysis.

Files

Download the following files to help you get started:

[Module 2 Challenge files](https://static.bc-edx.com/data/dl-1-2/m2/lms/starter/Starter_Code.zip) (https://static.bc-edx.com/data/dl-1-2/m2/lms/starter/Starter_Code.zip)

Instructions

Create a script that loops through all the stocks for one year and outputs the following information:

- The ticker symbol

- Yearly change from the opening price at the beginning of a given year to the closing price at the end of that year.

- The percentage change from the opening price at the beginning of a given year to the closing price at the end of that year.

- The total stock volume of the stock. The result should match the following image:

<ticker>	<date>	<open>	<high>	<low>	<close>	<vol>		Ticker	Yearly Change	Percent Change	Total Stock Volume
AAB	20180102	24.44	24.56	24.44	24.47	261879		AAB	-3.12	-12.77%	765628638
AAB	20180103	24.45	24.45	24.22	24.28	15721045		AAF	-0.44	-7.45%	2348251513
AAB	20180104	24.27	24.36	24.27	24.28	5954		AAR	-0.32	-17.11%	44163252
AAB	20180105	24.24	24.33	24.22	24.33	58161100		AAT	5.33	42.44%	1121804
AAB	20180108	24.28	24.72	24.28	24.72	267347		ABJ	0.20	0.47%	866724156
AAB	20180109	24.73	24.73	24.64	24.64	1129348		ABK	1.61	4.80%	10391386
AAB	20180110	24.62	24.78	24.57	24.68	5453423		ABKV	2.22	11.57%	5324614313
AAB	20180111	24.68	24.85	24.68	24.85	14391		ABM	-1.16	-12.96%	1029560425
AAB	20180112	24.86	24.86	24.71	24.86	13701		ACJ	-0.57	-3.70%	6169423
AAB	20180116	24.85	24.93	24.79	24.79	101867		ACYQ	2.04	4.79%	234097825
AAB	20180117	24.81	24.85	24.68	24.69	515155		ADB	-2.40	-8.34%	41980152
AAB	20180118	24.67	24.86	24.67	24.86	657377		ADF	0.36	2.74%	13907867898
AAB	20180119	24.89	24.93	24.71	24.71	1106987		AEL	2.33	5.11%	4339867319
AAB	20180122	24.66	24.9	24.66	24.85	1418811		AEV	2.79	11.71%	843970
AAB	20180123	24.87	24.94	24.8	24.84	52744		AEY	-0.08	-6.96%	8274367
AAB	20180124	24.83	24.83	24.56	24.56	3545845		AFZ	0.35	2.70%	175801284
AAB	20180125	24.58	24.66	24.54	24.66	3119820		AGF	-1.53	-2.46%	1903886691

- Add functionality to your script to return the stock with the "Greatest % increase", "Greatest % decrease", and "Greatest total volume". The solution should match the following image:

<ticker>	<date>	<open>	<high>	<low>	<close>	<vol>		Ticker	Yearly Change	Percent Change	Total Stock Volume				Ticker	Value
AAB	20180102	24.44	24.56	24.44	24.47	261879		AAB	-3.12	-12.77%	765628638			Greatest % Increase	THB	141.42%
AAB	20180103	24.45	24.45	24.22	24.28	15721045		AAF	-0.44	-7.45%	2348251513			Greatest % Decrease	RKS	-90.02%
AAB	20180104	24.27	24.36	24.27	24.28	5954		AAR	-0.32	-17.11%	44163252			Greatest Total Volume	QKN	1.69E+12
AAB	20180105	24.24	24.33	24.22	24.33	58161100		AAT	5.33	42.44%	1121804					
AAB	20180108	24.28	24.72	24.28	24.72	267347		ABJ	0.20	0.47%	866724156					
AAB	20180109	24.73	24.73	24.64	24.64	1129348		ABK	1.61	4.80%	10391386					
AAB	20180110	24.62	24.78	24.57	24.68	5453423		ABKV	2.22	11.57%	5324614313					
AAB	20180111	24.68	24.85	24.68	24.85	14391		ABM	-1.16	-12.96%	1029560425					
AAB	20180112	24.86	24.86	24.71	24.86	13701		ACJ	-0.57	-3.70%	6169423					
AAB	20180116	24.85	24.93	24.79	24.79	101867		ACYQ	2.04	4.79%	234097825					
AAB	20180117	24.81	24.85	24.68	24.69	515155		ADB	-2.40	-8.34%	41980152					
AAB	20180118	24.67	24.86	24.67	24.86	657377		ADF	0.36	2.74%	13907867898					
AAB	20180119	24.89	24.93	24.71	24.71	1106987		AEL	2.33	5.11%	4339867319					
AAB	20180122	24.66	24.9	24.66	24.85	1418811		AEV	2.79	11.71%	843970					
AAB	20180123	24.87	24.94	24.8	24.84	52744		AEY	-0.08	-6.96%	8274367					
AAB	20180124	24.83	24.83	24.56	24.56	3545845		AFZ	0.35	2.70%	175801284					

- Make the appropriate adjustments to your VBA script to enable it to run on every worksheet (that is, every year) at once.

NOTE

Make sure to use conditional formatting that will highlight positive change in green and negative change in red.

Other Considerations

- Use the sheet `alphabetical_testing.xlsx` while developing your code. This dataset is smaller and will allow you to test faster. Your code should run on this file in under 3 to 5 minutes.

- Make sure that the script acts the same on every sheet. The joy of VBA is that it takes the tediousness out of repetitive tasks with the click of a button.

Requirements

Retrieval of Data (20 points)

- The script loops through one year 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)

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)
  - yearly change ($) (2.5 points)
  - percent change (2.5 points)

Conditional Formatting (20 points)

- Conditional formatting is applied correctly and appropriately to the yearly change column (10 points)
- Conditional formatting is applied correctly and appropriately to the percent change column (10 points)

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)

Looping Across Worksheet (20 points)

- The VBA script can run on all sheets successfully.

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 (5 points)

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 Manager. 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 or any aspect of the curriculum, please remember that there are student support services available for you:
>
> 1. Office hours facilitated by your TA(s)

2. Tutor sessions (**sign up** ⤴ **(https://tinyurl.com/BootCampTutorTeam)**)

3. Ask the class Slack channel/get peer support

4. AskBCS Learning Assistants

References

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