Note: If you just want to view workbooks in the project folder without the intention to update, refresh or edit them, you don't have to follow instructions below. Otherwise, you need to have Thinkorswim app with active Charles Schwab account to refresh data in Excel workbooks.

Downloading CSV Files

Raw data is downloaded from the Thinkorswim (TOS) scanner as 11 CSV files and stored in **Downloaded CSV Files** folder. Each file is named according to the sector (e.g., Technology.csv, Healthcare.csv).

Follow these steps to update raw data:

1. Log in to Thinkorswim → main window → Scan tab → Stock Hacker
2. Third ribbon:
   Scan in: All Listed Stock (in Category)
   Intersect with: By Industry → Choose an industry → Select All <industry>
   Exclude: All OTC Stocks
3. Use the following filters:

- Stock: Market cap, $M → min: 250M, no max value is specified
- Fundamental: Choose any fundamental metric, and leave min and max values empty. This step is done to make sure OTC stocks are excluded just in case sometimes Exclude condition does not work properly.

4. Make sure required columns are set up in the right order:
   - Use the **Table Schema.xlsx** document in the project folder to see the required columns and correct order of columns for TOS tables.
   - Click the little settings wheel below the Scan button to customize columns.
5. Click Scan button on the right: It may take a while for data to fully load.
6. At the top right corner, under On Demand: click drop-down menu → Export → To file… → Navigate to **Downloaded CSV Files** folder which is a subfolder of **Undervalued Stock Scanner** → Replace the CSV file of the current industry

Workbooks in the Results Folder

Note: For **.xlsm** files in the **Results** folder, make sure **Thinkorswim** is logged in when a workbook is open.

Do the following steps to refresh data:

1. In any of the result sheets (**Result_L**, **Result_M**, **Result_S**), click Refresh All Data button. Click OK in the popup box. After around 40 seconds, you will see "Data has been refreshed." message, click OK.
2. For each of the **Mean_L**, **Mean_M**, **Mean_S** sheets: Make sure Outlier filters are set to "No". If the mean tables show errors, right-click on any cell in any mean table in each sheet → Choose Refresh.

Using Watch List Workbook

After comparing stocks in result workbooks, user may want to pick out a few favorite stocks and put them in a watch list.

1. Make sure all the result workbooks in **Results** folder are updated.
2. Open **Watch List.xlsx**
3. Refresh data: Data tab → Refresh All
4. Navigate to Watch List sheet and enter stock symbol in Symbol column.

Using Builder Workbook

The **Builder.xlsm** workbook is typically used to examine different sectors' CSV files and generate result workbooks in **Results** folder. The following steps provide guide on how to switch between different CSV files.

To switch to a sector's dataset, apply the following steps:

1. Data tab → Get Data → Launch Power Query Editor
2. Queries pane (on the left) → PARAMETERS → Make sure to choose appropriate FileName corresponding to the desired sector
3. Close Power Query → click Keep on the popup
4. Apply Data Refresh steps

- In any of the result sheets (**Result_L**, **Result_M**, **Result_S**), click "Refresh All Data" button. Click OK in the popup. After around 40 seconds, you will see "Data has been refreshed." message, click OK.
- For each of the **Mean_L**, **Mean_M**, **Mean_S** sheets: Make sure Outlier filters are set to "No". If the mean tables show errors, right-click on any cell in any mean table in each sheet → Click Refresh.

Using Power BI dashboards

For any **.pbix** file in the **Power BI** folder, do the following steps when opening the file for the first time in a local machine:

1. Copy the path of the project folder that contains the **Main** and **Power BI** folders.
   Ex: D:\PROJECTS\Undervalued Stock Scanner
2. Open a **.pbix** file with Power BI
3. Home tab --> Click Transform data drop-down --> Edit parameters --> Click on the FolderPath parameter --> Paste the current folder path to replace the default folder path --> Click OK --> Click Apply changes in the popup at the top