

Installation of BuildIt

Pre-requisites

BuildIt is an add-in that works only in Microsoft Excel version 2003 onwards (including version 2007, 2010, and 2013). BuildIt was not tested on lower versions than Excel 2003. Additionally, BuildIt works only in the Microsoft Windows operating system.

BuildIt's Trace features requires the Graphviz software from AT&T Research Lab to work. Graphviz has to be downloaded separately. This is to ensure you will obtain the latest version of Graphviz, which may have speed improvements, enhancements, and bug fixes.

The following are the steps to install BuildIt:

1. Download and unpack the BuildIt ZIP archive
2. Load BuildIt into Excel
3. Download and install Graphviz
4. Set the computer's PATH variable to include Graphviz's path

1. Download and unpack the BuildIt ZIP archive

BuildIt is free and can be downloaded from:

www.christopherteh.com/buildit

Once downloaded, use Windows Explorer to find and double click the "buildit.zip" file. Downloaded files are typically stored in one common or default location in your computer (such as the "Downloads" folder or on your computer desktop). Your computer's default file archive program will open when you double click the archive file.

In the "buildit.zip" archive, you will notice several folders:

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1. “Excel 2003” folder stores BuildIt add-in for Excel 2003,
2. “Excel 2007 and above” folder stores the BuildIt add-in for Excel 2007 and onwards,
3. “Book examples” folder stores the worksheets containing the examples used in this book,
4. “Weather” folder contains two worksheets: one for the Serdang weather and the other for Netherlands, and
5. “Install” folder contains files for displaying help on installing BuildIt,

Depending on what version of Excel you are using, extract the required BuildIt add-in. Ensure you use the correct BuildIt add-in for the Excel version you are using.

You will also need to extract the Serdang weather worksheet (optional: Netherlands weather worksheet). You can optionally extract the book example worksheets.

Unpack the archive contents to any location you wish in your computer. But it is recommend that you save BuildIt files in its own folder, e.g., "C:\BuildIt\".

For the next step, follow step 2a if you are using Excel 2007 or a higher version, else step 2b if you are using Excel 2003.

2a. Load BuildIt add-in into Excel 2007 and onwards

Launch to open Excel. In Excel 2010 and 2013, click the “File” menu and choose “Options”. Excel 2007 has a slightly different layout. In Excel 2007, click the “Office” icon at the upper left corner of Excel’s window, and choose “Options”.

From the Options dialog box, choose the “Add-Ins”, then in the “Manage:” dropdown list, select “Excel Add-ins”, and click the “Go...” button (Fig. 1).

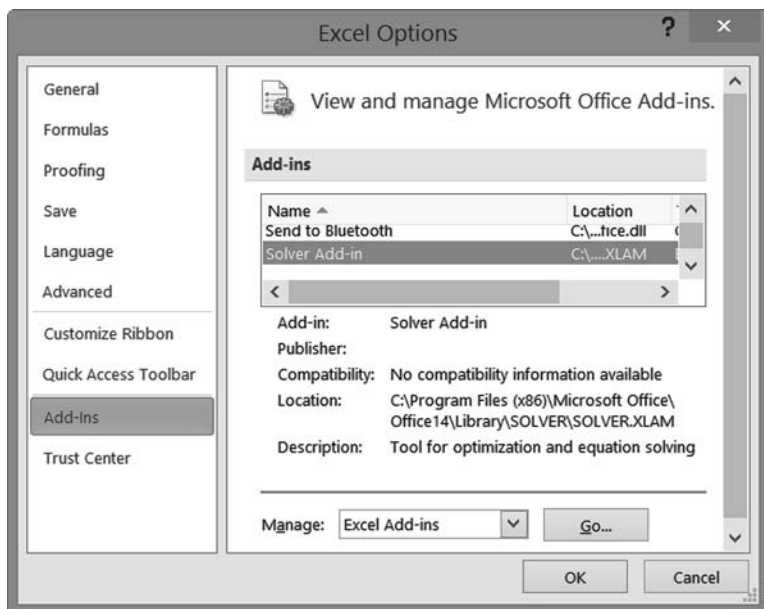


Fig. 1. Excel Options dialog box to manage Excel add-ins.

You will be presented with a list of all the add-ins recognized by Excel (Fig. 2). If you had saved BuildIt's files in the default add-in location, you will see the name BuildIt on this list.

However, if you do not see BuildIt on this list, this only means that you had saved BuildIt in a non-default location. In this case, click the "Browse..." button to locate BuildIt's installation folder (e.g., "C:\BuildIt\").

Once you have found BuildIt's location, you will see BuildIt's name appear on the list (Fig. 2). Ensure that you place a tick mark next to BuildIt's name. Placing a tick mark next to BuildIt's name will instruct Excel to load the BuildIt add-in.

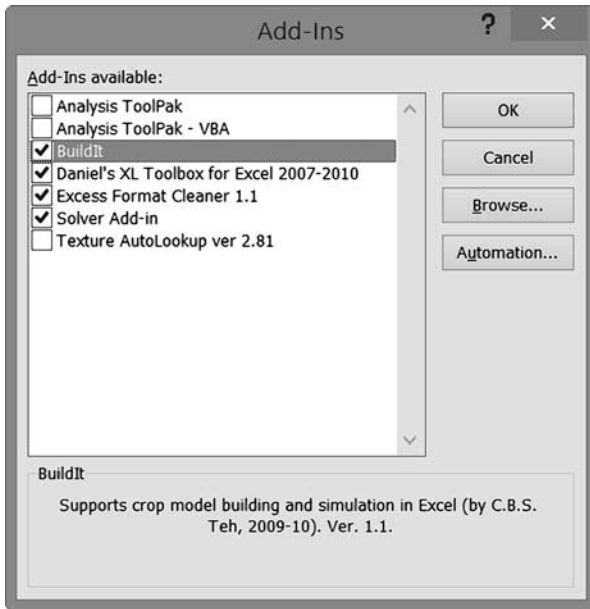


Fig. 2. List of add-ins recognized by Excel. This list will appear differently on your computer, depending on what add-ins you have installed.

Click the “OK” button, and once loaded, BuildIt's menu will appear on the Ribbon (Fig. 3). BuildIt is now ready to use each time you open Excel.

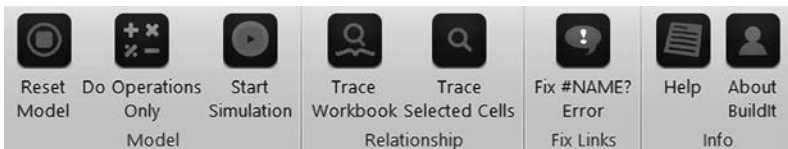


Fig. 3. BuildIt's menu added onto Excel's Ribbon.

2b. Load BuildIt add-in into Excel 2003

On Excel's main menu, click “Tools” and then “Add-Ins...” (Fig. 4).

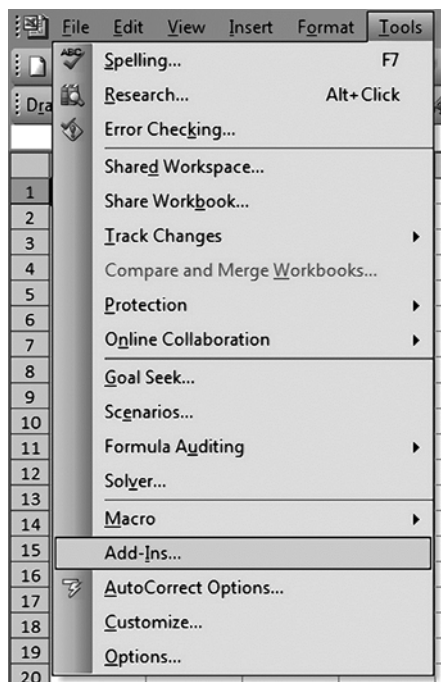


Fig. 4. Managing the add-ins in Excel 2003.

You will see a list of add-ins recognized by Excel (same as Fig. 2). If you had saved BuildIt's files in the default add-in location, you will see the name BuildIt on this list.

However, if you do not see BuildIt on this list, this only means that you had saved BuildIt in a non-default location. Click the "Browse..." button to locate BuildIt's installation folder (e.g., "C:\BuildIt\"). Once you have found BuildIt's location, you will see BuildIt's name appear on the list (Fig. 2). Ensure that you place a tick mark next to BuildIt's name. Placing a tick mark next to BuildIt's name will instruct Excel to load the BuildIt add-in.

Click the "OK" button, and once installed, BuildIt's menu will appear on the main menu (Fig. 5). BuildIt is now ready to use each time you open Excel.

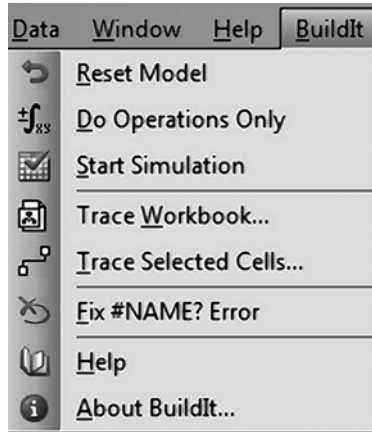


Fig. 5. BuildIt's menu on Excel 2003's main menu.

2c. Unload and uninstall BuildIt

Unloading BuildIt means BuildIt is no longer available for use in Excel. However, BuildIt files are not removed or deleted from your computer. BuildIt files still remain in your computer, but Excel has unloaded (will not use) BuildIt.

To unload BuildIt, remove the tick mark next to BuildIt's name in the add-in list (Fig. 2). This immediately unloads BuildIt and stops Excel from loading BuildIt each time Excel starts. If you decide to use BuildIt again, load it into Excel by placing a tick mark beside BuildIt's name in the add-in list.

To completely remove BuildIt from your computer, manually delete all of BuildIt's files in its installation folder. If you attempt to load BuildIt, Excel will produce an error message that the BuildIt add-in file cannot be found, and Excel will remove BuildIt's name from the add-in list. Uninstallation is now complete.

3. Installing Graphviz

At this time of writing, Graphviz is currently at version 2.38. You can download for free Graphviz from:

www.graphviz.org/Download_windows.php

Ensure you are downloading the Windows version. Graphviz installation file comes either in MSI or ZIP format. You can download either of the two formats.

Once downloaded, double click the MSI (or ZIP) file to start the Graphviz installation. Follow the given instructions during installation.

4. Set the computer's PATH variable

PATH is a Windows' environment variable that contains the locations of certain executable programs in the computer. Because their locations are stored in the PATH variable, these programs can be launched (run) from anywhere in the computer. This is very convenient because we do not need to run these executable files from their location.

Trace uses Graphviz's "dot.exe" file to render cells maps. Because your Excel workbook can be anywhere in the computer, Trace needs to be able to run "dot.exe" regardless of the current location. This ability is only possible provided the location of Graphviz executables is specified in the PATH variable.

Earlier versions of Graphviz had simpler installations. Graphviz's installer would automatically add the location of Graphviz executable files to the variable PATH. Unfortunately, this automatic path specification is no longer supported in recent versions of Graphviz. This means we have to manually add the location of Graphviz executables to the PATH variable.

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By default, Graphviz executable files are installed in:

`"C:\Program Files (x86)\GraphvizVersionNumber\bin"`

or

`"C:\Program Files\GraphvizVersionNumber\bin".`

So, if you are installing Graphviz version 2.38 (the latest version at the moment), the executable files' location would either be:


`"C:\Program Files (x86)\Graphviz2.38\bin"`

or

`"C:\Program Files\Graphviz2.38\bin".`

Use Windows Explorer to confirm the exact location for Graphviz executables (e.g., check where "dot.exe" file is stored by using the Windows Explorer file search).

To add Graphviz executables' path to the PATH variable, do the following.

As a shortcut, press the Windows logo  key (also called the Windows key or Start key) together with the letter "r" key to launch the Run dialog box (Fig. 6).

In the Run dialog box, type the following command:

```
cmd
```

at the "Open:" prompt, which would then open the command-line prompt (Fig. 7).

At the command prompt, type the following:

```
setx path "%path%;C:\Program Files\Graphviz2.38\bin"
```

which includes the location of Graphviz executables in the PATH variable. In the above case, Graphviz's location is "C:\Program Files\Graphviz2.38\bin".

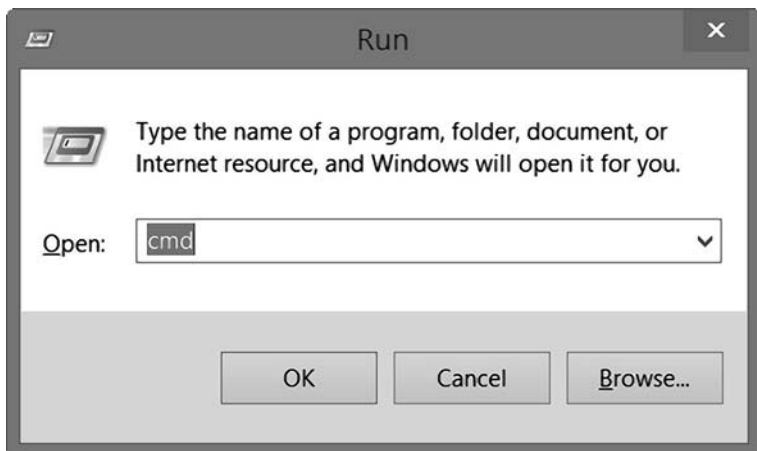


Fig. 6. Run dialog box. The `cmd` command is to open the command-line prompt.

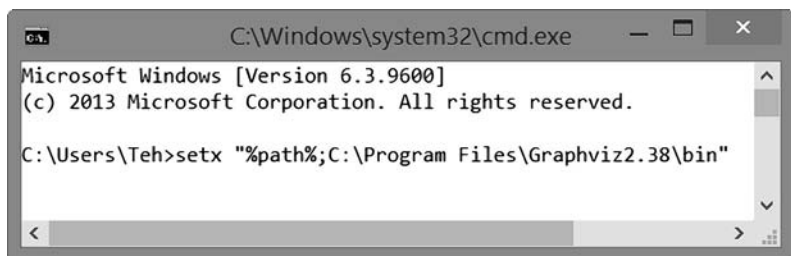


Fig. 7. Command-line prompt. The `setx` command is used to set the `PATH` variable to include the location of Graphviz executable files.

Make the necessary change if this location is not the same as for yours, *e.g.*,

```
setx path "%path%;C:\Graphviz2.38\bin"
```

where in this case the location of the Graphviz executables is in "C:\Graphviz2.38\bin".

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In both these cases, the `setx` command is used to set the `PATH` variable. Note the use of the quotation marks and the single semicolon immediately after the `%path%` text.

Close the command-line prompt, and restart Excel for the changes to take effect. Depending on your computer system, you may need to reboot the computer before these changes take effect.

If the setup is correct, you should be able to use the Trace feature in BuildIt.