SWIM 2016 Pre-Conference Short Course
Modeling Groundwater Flow in Coastal Zones
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Gdańsk, Poland

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Laptop Requirement

Each course participant is expected to **arrive with a laptop computer that has the required software installed and tested** according to the instructions presented here. Laptop computers should be running the Windows operating system if possible. It is important that you **try this installation as soon as possible** so that there is time to fix any installation problems that occur. Please contact Christian Langevin (langevin@usgs.gov) if your laptop is running a 32-bit version of the Windows operating system or the Mac or Linux operating systems.

Users should have administrator privileges on the laptop in the event that additional software installation is required.

Software Requirements

We ask that you download the following file, and follow the instructions provided here.

ftp://ftpext.usgs.gov/pub/er/va/reston/swim2018/swim2018shortcourse.zip

Please use the provided installers so that everyone is using the same version.

Big Picture

We have designed the course files to be structured in the following manner. It's important that folders are named according to the list below. Unfortunately, these files are very large, in excess of several Gigabytes.

- swim2018shortcourse (main directory)
  - installation (Scripts for installing the software. Provided in the zip file.)
  - software (Software installers. Windows versions are provided in the zip file.)
  - Miniconda3 (Python distribution we will use for this class. This folder will be created when you install Miniconda.)
  - SWIM2018_classrepo.git (course repository mirroring https://github.com/langevin-usgs/SWIM2018_classrepo. We will download the repository on the first day of class.)
  - working (a working folder)

Windows Software Installation

Note: if at any time, you get the following Windows Defender message, press "more info."
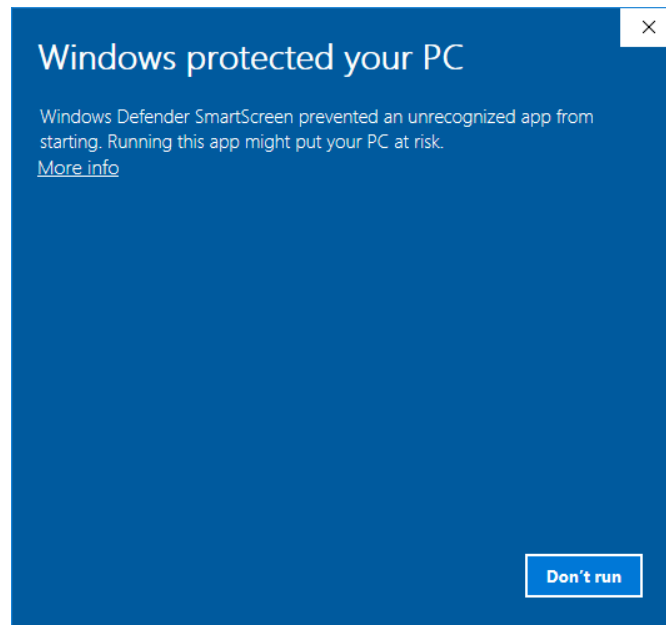
Then you should see the following message. Here you should click the "run anyway" button.
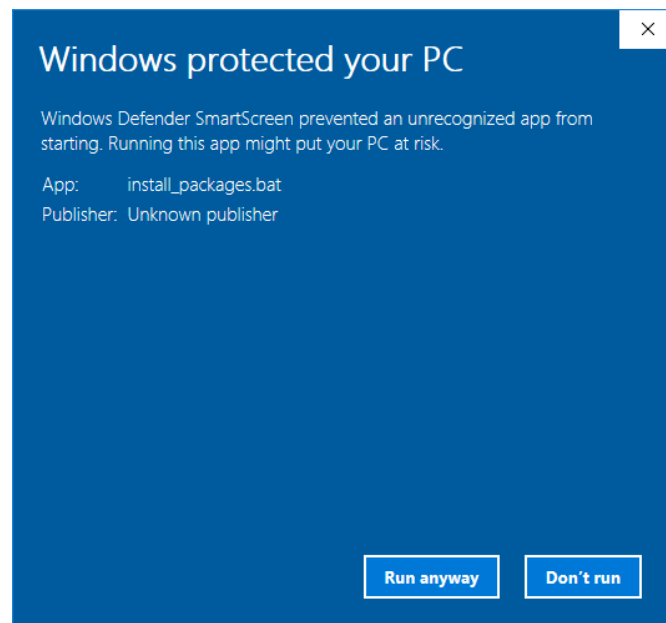
Step 1:

Download and unzip the `swim2018shortcourse.zip` file available at:
ftp://ftpext.usgs.gov/pub/er/va/reston/swim2018/swim2018shortcourse.zip

Step 2:

Navigate to the `swim2018shortcourse\installation` folder and double-click on the `install_Miniconda.bat` batch file. This will install the Miniconda Python distribution into a folder called `swim2018shortcourse\Miniconda3`. This may take several minutes, so please wait until the installation is complete. There will be a message saying "hit key to continue" when the Miniconda installation is complete.

Step 3:

Navigate to the `swim2018shortcourse\installation` folder and double-click on the `install_packages.bat` batch file. This will install specific python packages that we will be using for the class. This step can take a while (> 15 min) depending on your internet connection, so you may need some patience here. There will be a message saying "hit key to continue" when the package installation is complete.

Step 4:

Navigate to the `swim2018shortcourse\software` folder and install Model Viewer (`modview1_7.exe`) for the user name that you will be using during the class or for all users. You may want to keep all of the course materials for the class in the same folder, in which case you can change the Model Viewer installation path to be inside the `swim2018shortcourse` folder, perhaps `swim2018shortcourse\Model Viewer 1.7`.
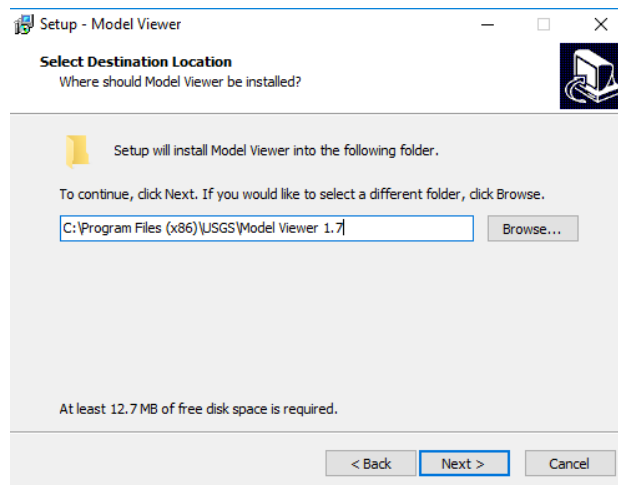
Step 5:

If git is not installed on your laptop, navigate to the `swim2018shortcourse\software` folder install git (`Git-2.17.1.2-64-bit.exe`). This software will be used to pull class materials from a git repository set up for the class.
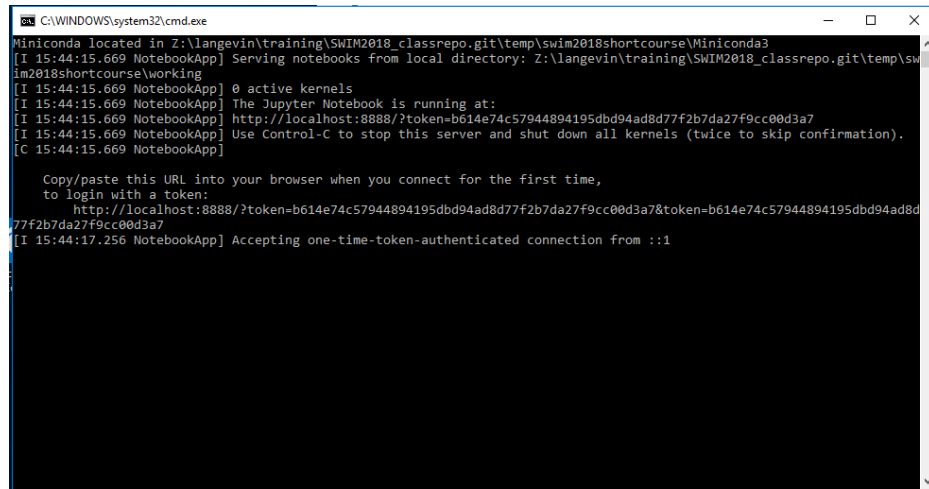
Windows Software Testing

After installing the software, navigate to `swim2018shortcourse\installation` and double click on `test_install.bat`. Alternatively, open a command line in `swim2018shortcourse\installation` and run the `test_install.bat` batch file. The batch file must be run using the user name that you will be using during the class.

The `test_install.bat` batch file will test that Python and the Python packages that will be used in the class have been correctly installed. Output from the `test_install.bat` batch file will look like the following:

```
-----------------------------------------------------------------------
SWIM2018: Pre-Conference Short Course
Checking your python distribution and installed modules.
  Evaluating system information
  Your python version:  3.6.5 | packaged by conda-forge | (default, Apr  6 2018,
16:13:55) [MSC v.1900 64 bit (AMD64)]
  Your platform is:  win32
  Module available for use: numpy
  Module available for use: matplotlib
  Module available for use: shutil
  Module available for use: subprocess
  Module available for use: pandas
  Module available for use: platform
  Module available for use: shapefile
  Module available for use: flopy
  Testing matplotlib installation
Done checking...
-----------------------------------------------------------------------
Press any key to continue . . .
```
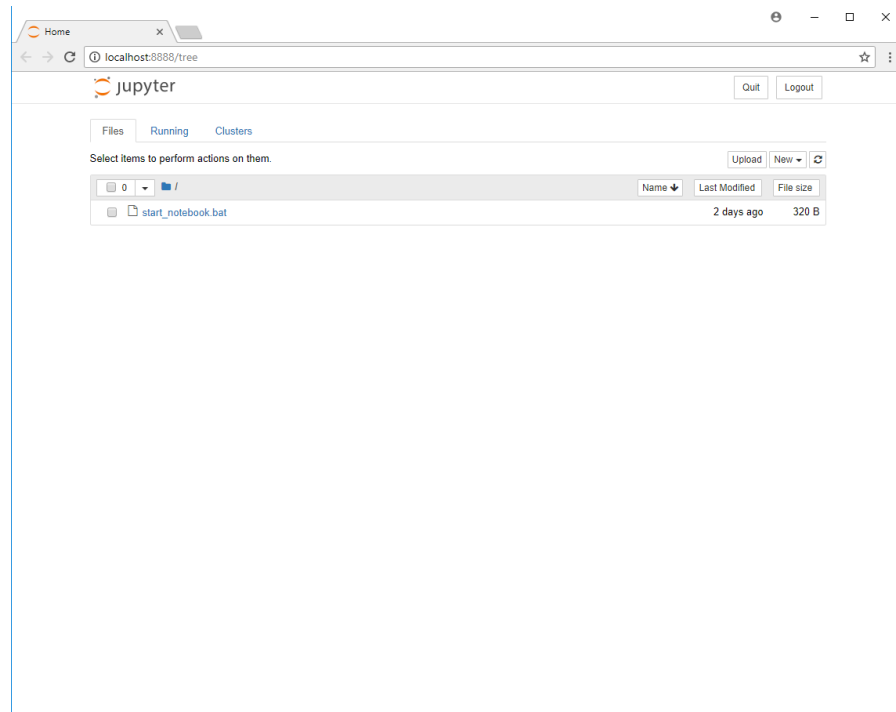
As a final test, navigate to the `swim2018shortcourse\working` folder, and double-click on `start_notebook.bat`. This should open a terminal window that looks something like the following:

Your default web browser should also open and you should see something like the following:

You can simply close these windows when you're done. Please let Chris Langevin (langevin@usgs.gov) know if you encounter any warnings or errors.

Mac/Linux Software Installation

For you Mac and Linux people, we're going to assume that you can install software. It is important that you end up with the folder structure

Step 1:

Download and unzip the `swim2018shortcourse.zip` file available at:
ftp://ftpext.usgs.gov/pub/er/va/reston/swim2018/swim2018shortcourse.zip

Step 2:

Install Miniconda. Installers are available at: https://conda.io/miniconda.html. You should install Miniconda to a `Miniconda3` folder directly under the `swim2018shortcourse` folder.

Step 3:

Use the Miniconda3 version of python to run the install packages python script. This script is located at:
`swim2018shortcourse\installation\install_packages.py`.

Step 4:

You will not be able to install Model Viewer on Mac or Linux. Sorry.

Step 5:

You need git. You may have it installed already. If not, you can download it from:
https://git-scm.com/download.

Mac/Linux Software Testing

Use the Miniconda3 version of python to run the install packages python script. This script is located at:
`swim2018shortcourse\installation\ test_root_install.py`.

The `test_root_install.py` script will test that Python and the Python packages that will be used in the class have been correctly installed. Output will look like the following:


```
----------------------------------------------------------------------
SWIM2018: Pre-Conference Short Course
Checking your python distribution and installed modules.
  Evaluating system information
  Your python version:  3.6.5 | packaged by conda-forge | (default, Apr  6 2018,
16:13:55) [MSC v.1900 64 bit (AMD64)]
  Your platform is:  win32
  Module available for use: numpy
  Module available for use: matplotlib
  Module available for use: shutil
  Module available for use: subprocess
  Module available for use: pandas
  Module available for use: platform
  Module available for use: shapefile
```

```
  Module available for use: flopy
  Testing matplotlib installation
Done checking...
-------------------------------------------------------------------------
Press any key to continue . . .
```

Please let Chris Langevin (langevin@usgs.gov) know if you encounter any warnings or errors.