

# Assignment 3 Setup

## Suggested workflow

For this assignment, you have the option to work remotely on any of the `corn` or `rye` machines, or you may install the software on your own machines. We have provided setup instructions for OSX/Linux/Windows if you wish to run on your local machines. If you're having trouble setting up locally, try working remotely and do not hesitate to post to Piazza or come to office hours.

## Working remotely

For this assignment, feel free to use **any** of the `corn` or `rye` machines. FarmVNC works on both for the purposes of this assignment. `ssh` into any of the farmshare machines and setup FarmVNC as follows:

```
$ ssh your-sunid@corn.stanford.edu #(or any of rye01 through rye06)
$ corn04:~> module load farmvnc
$ corn04:~> farmvnc 1440x900 # choose appropriate resolution for your screen
```

If after you connect to FarmVNC, the desktop comes up but the launcher bar is missing from the side panel, run these few commands to get things working again. First, press 'ctrl + alt + t' to bring up a terminal. Inside of the terminal run:

```
$ corn04:~> dconf reset -f /org/compiz; setsid unity
```

To start using celltool, you must load it as a module:

```
$ corn04:~> module load celltool
```

You should be good to go with the rest of the assignment! Copy the assignment 3 zip file and unzip it as follows:

```
$ corn04:~> cp /afs/ir/class/cs279/WWW/assignments/assn3.zip ~/
$ corn04:~> unzip assn3.zip
```

## Working on your own OSX/Linux machine

*Install PIL (Python Imaging Library), NumPy, SciPy, and matplotlib:*

First check if you already have these packages. In terminal, type: `python` and once inside the python interpreter, type `import numpy, scipy, matplotlib`. If you don't get any import errors, go on to installing celltool. **Note that celltool requires Python 2.7!** If you do not have Python 2.7, continue with the instructions below.

If you do not have these packages or Python 2.7, you have two options (homebrew or Anaconda). We recommend Anaconda, because the installation is very straightforward and it has all the necessary packages.

In terminal, type: `pip install Pillow numpy scipy matplotlib`. If you do not have `pip` or you get an error, then:

- I. Install [Anaconda \(Python 2.7\)](#) or continue with homebrew below:
- II. Install [homebrew](#)\*\* by typing in the terminal:  
`ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"`
- III. Type: `brew install python`
- IV. In terminal, type: `pip install Pillow numpy scipy matplotlib`

\*\*Linux users can do the same, but substitute your package manager for brew.

## *Install Celltool*

1. Download the celltool source code here: <http://zplab.wustl.edu/celltool/celltool-1.5.zip>
2. Unzip `celltool-1.5.zip` and go into the unzipped directory in terminal
3. Type: `python setup.py install`
4. There's a missing file in the celltool source code that may cause an Import Error later on in the assignment. Please download `kde.py` from the CS 279 website ([using this link](#)), and move it to the `celltool/numerics` directory where your python celltool library is installed (not the same location where it was downloaded). For me it was located here:  
`/usr/local/lib/python2.7/site-packages/celltool/numerics/`  
Or if you're using anaconda, it may be located here:  
`~/anaconda/lib/python2.7/site-packages/celltool/numerics`

## **Working on your Windows Machine (also for OS X and Linux\*\*)**

Anaconda's distribution of Python has all the packages you need for this assignment (not including celltool), and it's really easy to install!

1. Download and install [Anaconda Python 2.7](#) ([Click Here for Python 2.7 Windows 64-bit](#))
2. Download and install [celltool](#) ([Click here for the Windows installer](#))

After you complete the assignment, if you no longer want Anaconda, follow the uninstall instructions here: <http://docs.continuum.io/anaconda/install>

\*\* Anaconda is super easy to install for OS X and Linux users as well. Follow instructions here: <https://www.continuum.io/downloads>