macOS Manual Installation Guide

Overview:

About *Lexos*

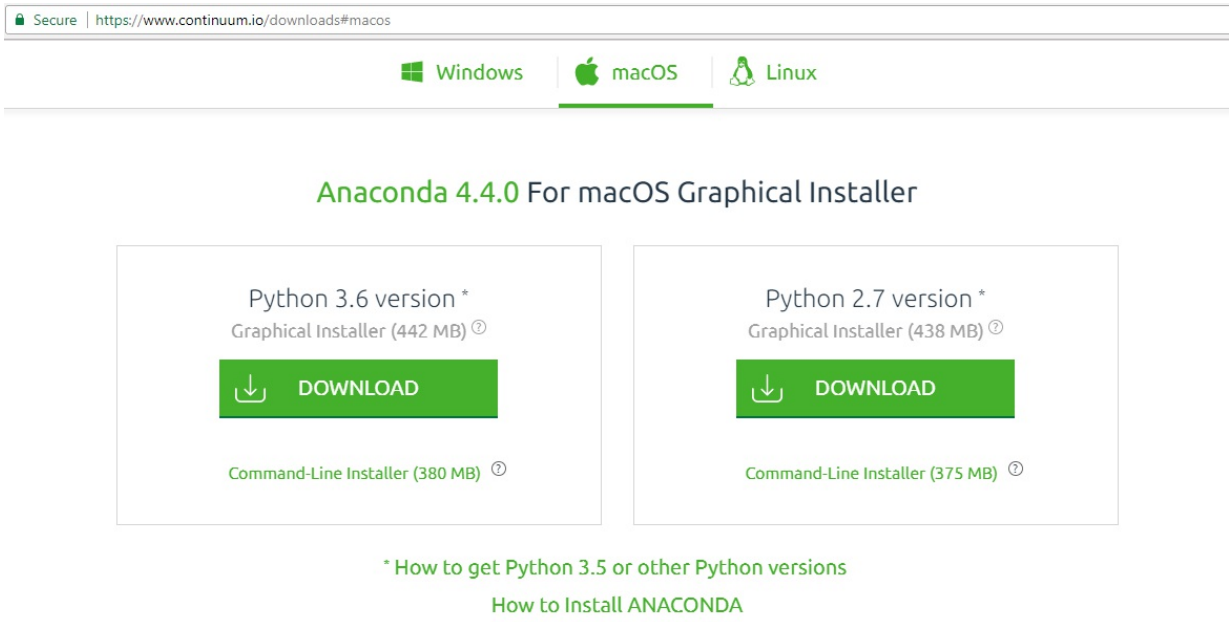
Lexos is an integrated workflow of tools to facilitate computational text analysis, presented in a web-based interface. Lexos is written primarily in Python 2.7.11 using the *Flask* microframework, based on Werkzeug and Jinja 2. A heavy dose of Javascript and CSS is included on the front-end. We increasingly incorporate the wiz from *D3.js* in our visualizations and the power in the *scikit-learn* modules for text and statistical processing.

Installing Python and Anaconda

If you do not already have Python v2.7 installed on your computer, we recommend installing it through the free Anaconda distribution.[1] If you already have Python, Anaconda will run alongside your current installation. **Note: If you are installing Lexos v3.2 or above from the master branch of the Lexos repository, make sure to install Python 3.x instead. The rest of the installation procedure should be the same.**

1. Visit the Anaconda downloads page on the web: https://continuum.io/downloads. Locate the **macOS symbol** on

the screen (the apple); click on this **macOS** link to get to **Anaconda 4.4.0 For macOS Graphical Installer**.



2. Download the **Python 2.7 version Graphical Installer** by clicking on the green Download button.
3. Double-click the installer application icon (it will be called something like Anaconda2-4.4.0-MacOSX-x86_64.pkg) and follow the instructions on the screen.

When the process is complete, select **Close** to finish the installation of Anaconda.

You should now verify that we have installed it correctly. To do this, follow the instructions below:

1. Open a terminal window. If you are unfamiliar with how to access a terminal window, search for “terminal” in Spotlight. You should see a window appear with a command-line prompt, typically a $.
2. Type python -V (capital v) and hit the Enter key.

You should see a response that looks like: Python 2.7.13 :: Anaconda 4.4.0 (64-bit). If you do not see :: Anaconda 4.4.0 then your PATH variable was not updated during the Anaconda installation. We recommend that you uninstall Anaconda and try to install it again,

following the instructions above. To uninstall Anaconda, type rm -rf ~/anaconda2, replacing anaconda2 with the name of the Anaconda directory, if it is different. Hit the Enter key.

Installing Additional Python Packages

You must now install three additional Python packages needed to run *Lexos*.

1. Begin my making sure that your package installer (pip) is up to date. In the terminal type pip install -U pip (capital u) and hit the Enter key. Your terminal window will display some information showing you the update process. Once that is completed, you can now use 'pip' (python package installer) in the next step.
2. In the terminal type the following three commands, hitting the Enter key after each one. The installation process for each may take some time.

```
pip install gensim
pip install chardet
pip install natsort
```

When the last installation is finished, you are ready to download *Lexos*.

> Note: If any odd errors occur ensure your terminal is displaying something like mac_name:~ your_user$ as your location, otherwise exit and open a new terminal.

Downloading and Extracting *Lexos*

To download *Lexos*, enter https://github.com/WheatonCS/Lexos/archive/v3.1.1.zip in your browser's address bar. Alternatively, go to the *Lexos* GitHub page:

https://github.com/WheatonCS/Lexos/releases. Look under **Lexos v3.1.1**, click on the link that says Source code (zip) under **Downloads** and save the file.

Once the *Lexos* zip archive has downloaded, go into your Downloads and right-click on the zip icon, then select **Open With > Archive Utility** (only do this if your mac didn't automatically unzip your file for you). Choose where you would like to install *Lexos* and drag the folder there. If you wish, you may change the name of the extracted folder from Lexos-3.1.1 to Lexos. In the instructions below, we will assume that you did this and that you extracted the Lexos folder to the Desktop.

Starting and Launching *Lexos*

Important: Close your current terminal window and open a new one.

In most cases, the terminal window will open in your computer's user account directory. It will show your location by displaying something like mac_name:~ your_user$. If the command prompt says something else, you may need to navigate to this folder. For help with navigation using the command line, check out this article by *Macworld* http://www.macworld.com/article/2042378/master-the-command-line-navigating-files-and-folders.html.

Now navigate to the Lexos folder by typing cd Desktop/Lexos and hit the Enter key. If you encounter an error, make sure that you are starting in your user account folder, that the Lexos folder is on the Desktop, and that it is called Lexos. The terminal should now display something like mac_name:Lexos your_user$.

Type python lexos.py and hit the Enter key. This will start *Lexos*. It may take a minute to see a response the first time you run the command because Python has to reconfigure some of the project files for your

computer. But shortly after you should see the following:

```
Running on http://127.0.0.1:5000/ (Press CTRL+C to
quit)
Restarting with stat
Debugger is active!
Debugger PIN: 236-087-009
```

Important: Keep the python lexos.py command running while you use *Lexos*. You may minimize the terminal window, **but do not close it**.

Once you see the message above, you are ready to launch *Lexos*. Go to a web browser and enter localhost:5000 in the address bar. We recommend using either Firefox or Chrome (other browsers are not supported and may not work with *Lexos*). You will soon see the *Lexos* upload page. For information about using *Lexos*, click the "Gear" icon at the top right of the screen.

Note: Because your computer is acting as both the web server and the user of *Lexos*, you may need to hit the **Reset** button in the top right corner of the **Upload** page to make sure files from any previous sessions are purged.

Note: We've noticed on that some versions of Mac OS X do not have the character encoding set to UTF-8, thus they got an error on this step. Here is a fix that has worked for us:

1. Open a new terminal.
2. Type cd and hit Enter.
3. Using an editor of your choice, edit the file .bash_profile. For instance, if using “open”, type open .bash_profile.
4. Add the following lines and then save the file (**Command+s**).

```
export LC_ALL=en_US.UTF-8
export LANG_=en_US.UTF-8
```

Return to the Lexos directory and restart *Lexos* by entering the following commands.

```
cd
cd Desktop/Lexos
python lexos.py
```

Quitting *Lexos*

To quit *Lexos* simply close your browser window and close the terminal window running python lexos.py.

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[1] Anaconda is a free distribution of the Python programming language for large-scale data processing, predictive analytics, and scientific computing, that aims to simplify package management and deployment. As of August 2017, Anaconda includes 720+ of the most popular Python packages, including most of the packages needed for *Lexos*.