Python Install Instructions for Mac OS

Installing Python on Mac is much easier than on Windows, although it involves a less hands on approach through the HomeBrew software. The Mac OS is a Linux based operating system which makes the command line prompt the same as those for a Linux OS. This is shown if you open the Terminal application on your computer by a $ symbol delineating the command prompt:

```
micl-pc:~ micl$
```

The first step in installing python is to download the Homebrew software which will manage the python package. Type the following into the command prompt:
/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
Or
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"

```
micl-pc:~ micl$ /usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com
/Homebrew/install/master/install)"
```

and hit enter (return). The terminal will begin downloading and ask you to enter a password. This is the same password you use to login to your computer. As a warning, your password will not show up and it will look like you are not typing anything while you type in your password to the command prompt. If you typed it correctly, the installation will continue.

```
Warning: The Ruby Homebrew installer is now deprecated and has been rewritten in
Bash. Please migrate to the following command:
  /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/
master/install.sh)"

==> This script will install:
/usr/local/bin/brew
/usr/local/share/doc/homebrew
/usr/local/share/man/man1/brew.1
/usr/local/share/zsh/site-functions/_brew
/usr/local/etc/bash_completion.d/brew
/usr/local/Homebrew
==> The following new directories will be created:
/usr/local/bin
/usr/local/etc
/usr/local/include
/usr/local/lib
/usr/local/sbin
/usr/local/share
/usr/local/var
/usr/local/opt
/usr/local/share/zsh
/usr/local/share/zsh/site-functions
/usr/local/var/homebrew
/usr/local/var/homebrew/linked
/usr/local/Cellar
/usr/local/Caskroom
/usr/local/Homebrew
/usr/local/Frameworks
==> The Xcode Command Line Tools will be installed.

Press RETURN to continue or any other key to abort
Password:
```

The installation should proceed with commands such as the below appearing in succession.

```
==> Tapping homebrew/core
Cloning into '/usr/local/Homebrew/Library/Taps/homebrew/homebrew-core'...
remote: Enumerating objects: 27, done.
remote: Counting objects: 100% (27/27), done.
remote: Compressing objects: 100% (19/19), done.
Receiving objects:  60% (434616/716856), 180.94 MiB | 3.70 MiB/s
```

```
remote: Enumerating objects: 99, done.
remote: Counting objects: 100% (99/99), done.
remote: Compressing objects: 100% (82/82), done.
remote: Total 135862 (delta 26), reused 76 (delta 17), pack-reused 135763
Receiving objects: 100% (135862/135862), 32.80 MiB | 3.82 MiB/s, done.
Resolving deltas: 100% (99832/99832), done.
From https://github.com/Homebrew/brew
```

Don't interrupt the installation and wait until you see an 'installation successful!" note in the terminal and the prompt returns (see next page).

```
==> Tapping homebrew/core
Cloning into '/usr/local/Homebrew/Library/Taps/homebrew/homebrew-core'...
remote: Enumerating objects: 27, done.
remote: Counting objects: 100% (27/27), done.
remote: Compressing objects: 100% (19/19), done.
remote: Total 716856 (delta 14), reused 18 (delta 8), pack-reused 716829
Receiving objects: 100% (716856/716856), 290.37 MiB | 3.74 MiB/s, done.
Resolving deltas: 100% (472766/472766), done.
Checking out files: 100% (5223/5223), done.
Tapped 2 commands and 4982 formulae (5,247 files, 318.3MB).
Already up-to-date.
==> Installation successful!

==> Homebrew has enabled anonymous aggregate formulae and cask analytics.
Read the analytics documentation (and how to opt-out) here:
  https://docs.brew.sh/Analytics
No analytics data has been sent yet (or will be during this `install` run).

==> Homebrew is run entirely by unpaid volunteers. Please consider donating:
  https://github.com/Homebrew/brew#donations

==> Next steps:
- Run `brew help` to get started
- Further documentation:
    https://docs.brew.sh
micl-pc:~ micl$
```

Next, type "brew update" and hit enter (return) to update homebrew.
With homebrew up-to-date, we can install python with the simple command "brew install python3"

```
micl-pc:~ micl$ brew install python3
```

Hit enter and the installation should follow:

```
==> python
Python has been installed as
  /usr/local/bin/python3

Unversioned symlinks `python`, `python-config`, `pip` etc. pointing to
`python3`, `python3-config`, `pip3` etc., respectively, have been installed into
  /usr/local/opt/python/libexec/bin

You can install Python packages with
  pip3 install <package>
They will install into the site-package directory
  /usr/local/lib/python3.7/site-packages

See: https://docs.brew.sh/Homebrew-and-Python
micl-pc:~ micl$
```

Next we need to install some python libraries which will make coding easier in the future. Install the following three libraries: NumPy, MatPlotLib, and AstroPy using the command "pip3 install LIBRARY" where you should replace LIBRARY with numpy, matplotlib, and astropy in succession.