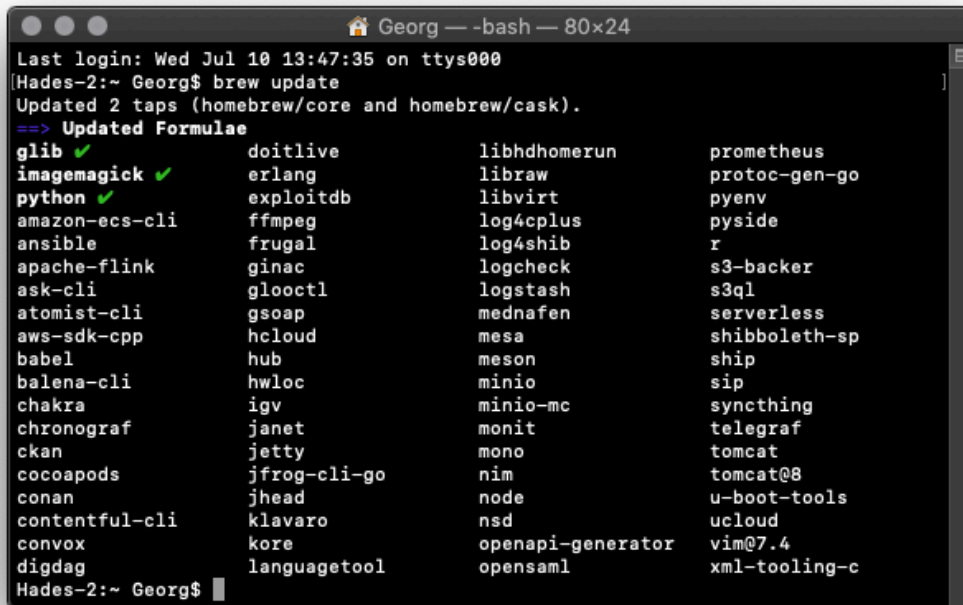


The first step in installing a program through a package management tool is to choose the program you want and whether or not your package manager even supports and has it. This is often the case with widely distributed programs, but of course mustn't be. For this task we decided on installing octave on mac running Mojave with homebrew. Checking if a program is available for homebrew can be done through the command "homebrew search" followed by the name of the program you wish to search for. The second step that should be carried out before installing a new program is seeing if there is an update for the package management tool and if there is installing it. For homebrew the command to update is "brew update" Next



```
Georg — -bash — 80x24
Last login: Wed Jul 10 13:47:35 on ttys000
Hades-2:~ Georg$ brew update
Updated 2 taps (homebrew/core and homebrew/cask).
==> Updated Formulae
glib ✓      doitrive   libhomerun  prometheus
imagemagick ✓ erlang     libraw      protoc-gen-go
python ✓    exploitdb  libvirt     pyenv
amazon-ecs-cli ffmpeg     log4cplus   pyside
ansible     frugal    log4shib    r
apache-flink ginac      logcheck    s3-backer
ask-cli     glooctl   logstash    s3ql
atomist-cli gsoap     mednafen    serverless
aws-sdk-cpp hcloud    mesa        shibboleth-sp
babel       hub       meson       ship
balena-cli  hwloc     minio       sip
chakra      igv       minio-mc    syncthing
chronograf  janet     monit       telegraf
ckan        jetty     mono        tomcat
cocoapods   jfrog-cli-go nim         tomcat@8
conan       jhead     node        u-boot-tools
contentful-cli klavaro   nsd         ucloud
convex      kore      openapi-generator vim@7.4
digdag      languagetool opensaml     xml-tooling-c
Hades-2:~ Georg$
```

comes installing the program which happens through the command "brew install" followed by the name of the program you wish to install, in our case it is octave.

```

Hades-2:~ Georg$ brew install octave
==> Installing dependencies for octave: glib, lzo, cairo, harfbuzz, pango, qt, gnuplot, hdf5, shared-mime-info, libomp, imagemagick, pstoeid, qrupdat
e, suite-sparse and sundials
==> Installing octave dependency: glib
==> Downloading https://homebrew.bintray.com/bottles/glib-2.60.5.mojave.bottle.t
==> Downloading from https://akamai.bintray.com/1f/1fa43a8867d3d92d43d6921c8e04d
##### 100.0%
==> Pouring glib-2.60.5.mojave.bottle.tar.gz
📦 /usr/local/Cellar/glib/2.60.5: 429 files, 15.2MB
==> Installing octave dependency: lzo
==> Downloading https://homebrew.bintray.com/bottles/lzo-2.10.mojave.bottle.tar.
##### 100.0%
==> Pouring lzo-2.10.mojave.bottle.tar.gz
📦 /usr/local/Cellar/lzo/2.10: 31 files, 549.7KB
==> Installing octave dependency: cairo
==> Downloading https://homebrew.bintray.com/bottles/cairo-1.16.0.2.mojave.bottl
==> Downloading from https://akamai.bintray.com/fc/fcd6779381271541f623470a74b8b
##### 100.0%
==> Pouring cairo-1.16.0.2.mojave.bottle.tar.gz
📦 /usr/local/Cellar/cairo/1.16.0.2: 117 files, 5.5MB
==> Installing octave dependency: harfbuzz
==> Downloading https://homebrew.bintray.com/bottles/harfbuzz-2.5.3.mojave.bottl
==> Downloading from https://akamai.bintray.com/d9/d9e876e0610be37dbf5de54a167f6
##### 100.0%
==> Pouring harfbuzz-2.5.3.mojave.bottle.tar.gz
📦 /usr/local/Cellar/harfbuzz/2.5.3: 151 files, 10MB
==> Installing octave dependency: pango
==> Downloading https://homebrew.bintray.com/bottles/pango-1.42.4.2.mojave.bottl
==> Downloading from https://akamai.bintray.com/00/00b769ae7c76db06f9828390823c6
##### 100.0%
==> Pouring pango-1.42.4.2.mojave.bottle.tar.gz
📦 /usr/local/Cellar/pango/1.42.4.2: 106 files, 4.5MB
==> Installing octave dependency: qt
==> Downloading https://homebrew.bintray.com/bottles/qt-5.13.0.mojave.bottle.tar
==> Downloading from https://akamai.bintray.com/79/79f85354d7639db7f4d03cb8583b
##### 100.0%
==> Pouring qt-5.13.0.mojave.bottle.tar.gz
==> Caveats
We agreed to the Qt open source license for you.
If this is unacceptable you should uninstall.

qt is keg-only, which means it was not symlinked into /usr/local,
because Qt 5 has CMake issues when linked.

If you need to have qt first in your PATH run:
  echo 'export PATH="/usr/local/opt/qt/bin:$PATH"' >> ~/.bash_profile

For compilers to find qt you may need to set:
  export LDFLAGS="-L/usr/local/opt/qt/lib"
  export CPPFLAGS="-I/usr/local/opt/qt/include"

For pkg-config to find qt you may need to set:
  export PKG_CONFIG_PATH="/usr/local/opt/qt/lib/pkgconfig"

==> Summary
📦 /usr/local/Cellar/qt/5.13.0: 9,770 files, 327.8MB
==> Installing octave dependency: gnuplot
==> Downloading https://homebrew.bintray.com/bottles/gnuplot-5.2.7.1.mojave.bott
==> Downloading from https://akamai.bintray.com/c5/c5f7eb8ca16ddc90c9c14f100c43c
##### 100.0%
==> Pouring gnuplot-5.2.7.1.mojave.bottle.tar.gz
📦 /usr/local/Cellar/gnuplot/5.2.7.1: 48 files, 2.9MB
==> Installing octave dependency: hdf5
==> Downloading https://homebrew.bintray.com/bottles/hdf5-1.10.5.1.mojave.bottle
==> Downloading from https://akamai.bintray.com/28/28ee1944f9b17a50b9dbfbc1730d0
##### 100.0%
==> Pouring hdf5-1.10.5.1.mojave.bottle.tar.gz
Warning: hdf5 dependency gcc was built with a different C++ standard
library (libstdc++ from clang). This may cause problems at runtime.
📦 /usr/local/Cellar/hdf5/1.10.5.1: 256 files, 14.6MB
==> Installing octave dependency: shared-mime-info
==> Downloading https://homebrew.bintray.com/bottles/shared-mime-info-1.12.1.moj
==> Downloading from https://akamai.bintray.com/aa/aa8d4c56a94506b37c58935ae017
##### 100.0%
==> Pouring shared-mime-info-1.12.1.mojave.bottle.tar.gz
Warning: The post-install step did not complete successfully
You can try again using 'brew postinstall shared-mime-info'
==> Summary
📦 /usr/local/Cellar/shared-mime-info/1.12.1: 85 files, 4.4MB
==> Installing octave dependency: libomp
==> Downloading https://homebrew.bintray.com/bottles/libomp-8.0.0.mojave.bottle.
==> Downloading from https://akamai.bintray.com/6c/6c8f66a6582efa00620593e16a41f
##### 100.0%
==> Pouring libomp-8.0.0.mojave.bottle.tar.gz
📦 /usr/local/Cellar/libomp/8.0.0: 9 files, 1.3MB
==> Installing octave dependency: imagemagick
==> Downloading https://homebrew.bintray.com/bottles/imagemagick-7.0.8-53.mojave
==> Downloading from https://akamai.bintray.com/08/08da8413dc6c8e3dca3e4c83879
##### 100.0%
==> Pouring imagemagick-7.0.8-53.mojave.bottle.tar.gz
📦 /usr/local/Cellar/imagemagick/7.0.8-53: 1,477 files, 23.3MB
==> Installing octave dependency: pstoeid
==> Downloading https://homebrew.bintray.com/bottles/pstoeid-3.74.mojave.bottle
==> Downloading from https://akamai.bintray.com/08/08a1be5ab3a0b2782a0c4df3c1463
##### 100.0%
==> Pouring pstoeid-3.74.mojave.bottle.tar.gz
📦 /usr/local/Cellar/pstoeid/3.74: 41 files, 2MB
==> Installing octave dependency: qrupdate
==> Downloading https://homebrew.bintray.com/bottles/qrupdate-1.1.2.10.mojave.bo
##### 100.0%
==> Pouring qrupdate-1.1.2.10.mojave.bottle.tar.gz
📦 /usr/local/Cellar/qrupdate/1.1.2.10: 11 files, 445.0KB
==> Installing octave dependency: suite-sparse
==> Downloading https://homebrew.bintray.com/bottles/suite-sparse-5.3.0.1.mojave
==> Downloading from https://akamai.bintray.com/cd/cd8f66c3e7358c6bb81f9e7975663
##### 100.0%
==> Pouring suite-sparse-5.3.0.1.mojave.bottle.tar.gz
Warning: suite-sparse dependency gcc was built with a different C++ standard
library (libstdc++ from clang). This may cause problems at runtime.
📦 /usr/local/Cellar/suite-sparse/5.3.0.1: 157 files, 16.2MB
==> Installing octave dependency: sundials
==> Downloading https://homebrew.bintray.com/bottles/sundials-4.1.0.1.mojave.bot
==> Downloading from https://akamai.bintray.com/f4/f4c847a59ffa3fc65c5d4945bde6f
##### 100.0%
==> Pouring sundials-4.1.0.1.mojave.bottle.tar.gz
📦 /usr/local/Cellar/sundials/4.1.0.1: 549 files, 8.0MB
==> Installing octave
==> Downloading https://homebrew.bintray.com/bottles/octave-5.1.0.4.mojave.bottl
==> Downloading from https://akamai.bintray.com/3f/3fcee7fe9661488e0231595e7d240
##### 100.0%
==> Pouring octave-5.1.0.4.mojave.bottle.tar.gz
📦 /usr/local/Cellar/octave/5.1.0.4: 2,261 files, 53.4MB

```

The actual installing portion can take some time and may ask the user for a password which on macOS will not show up while typing it in the terminal, so be sure to type it correctly. Depending on the program the package manager may also have to install other programs on which the one you want to install depends on. After installing the program, it will be usable like any other. If you decide you no longer want the program to be on your computer and wish to uninstall it, you can do this in homebrew through “brew uninstall” followed by the name of the program.

```
[Hades-2:~ Georg$ brew uninstall octave  
Uninstalling /usr/local/Cellar/octave/5.1.0_4... (2,261 files, 53.4MB)
```