Install Nighres in Docker container (for Mac OS)

```
********************************************
```
* Download and install Docker Desktop
```
********************************************
```

https://www.docker.com/

```
********************************************
```
* Initiate Ubuntu v 22.04
```
********************************************
```
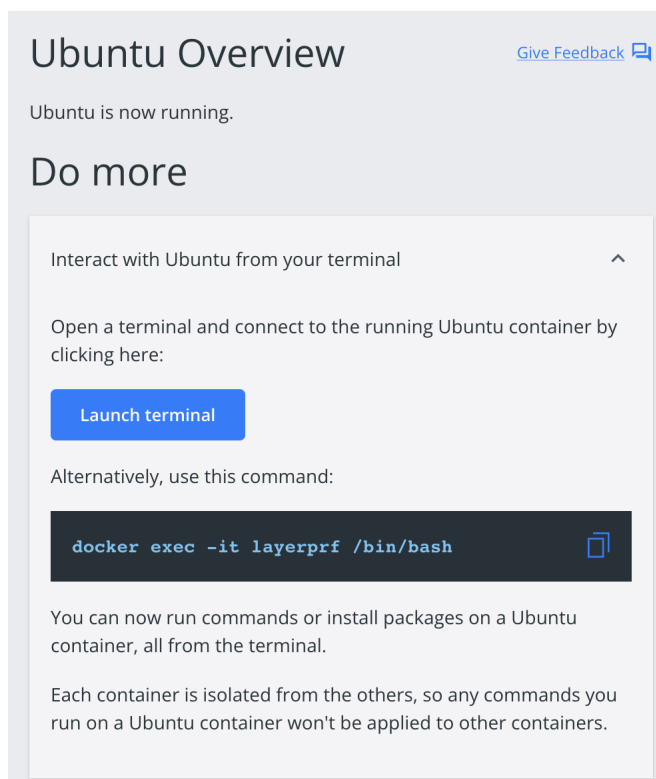Command: docker exec -it <your_container_name> /bin/bash

Description:
This will create a Ubuntu container with root right and you can also open it in Terminal.


```
********************************************
```
* Install sudo
```
********************************************
```

Command:
apt-get update -y

apt-get install -y sudo

Description:
This will install sudo package in the virtual container

```
**********************************************
* Install python
**********************************************
```
Command:
sudo apt-get update -y

sudo apt-get install -y python

Description:
This will install python in the virtual container, and in case python-pip is not installed along with python, use command to install pip:

sudo apt-get -y install python3-pip

```
**********************************************
* Install git
**********************************************
```
Command:
sudo apt install git

Description:
This will install the git package in the virtual container.

```
********************************************************************************************************
```
* This instruction is not yet fully completed, will update soon as we try out the entire processing pipeline.
```
********************************************************************************************************
```

The following instruction was provided by Dr. Falk Luesebrink
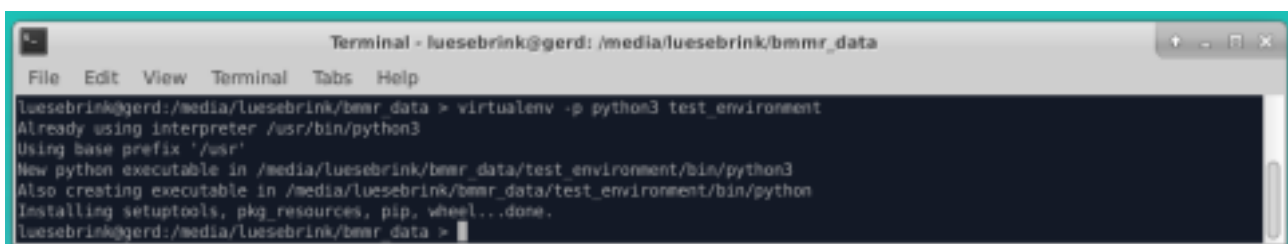
```
**********************************************
* Create virtual environment for Python
**********************************************
```
Command:
virtualenv -p python3 <your_projects_name>

Description:
This will create the folder "your_projects_name" into the directory from where you run it with the sub directories "bin", "include", "lib", and "share". A virtual environment is used to avoid conflicts between different versions of Python and its packages.

Other options:
In case the tool "virtualenv" is not yet installed on your computer, the most easy solution would be by typing "python -m pip install --user virtualenv". In case this doesn't work, please refer to the following website "https://virtualenv.pypa.io/en/latest/installation.html" for further instructions.
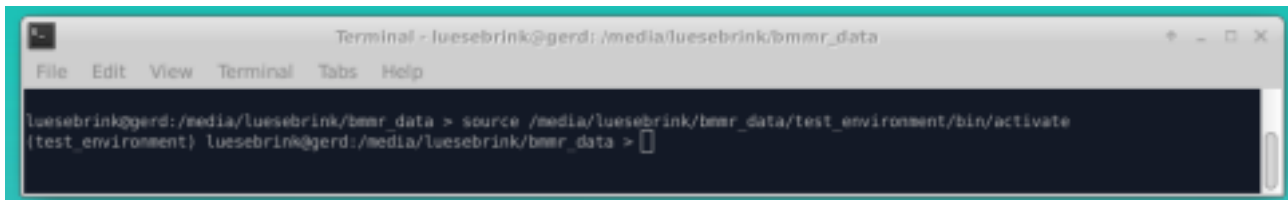
```
**********************************************
```

* Activate virtual environment
****
Command:
source /path/to/your/virtual/environment/<your_projects_name>/bin/activate

Description:
This will activate your virtual environment. If successful it will be indicated by the name of your project at the beginning of the command line.
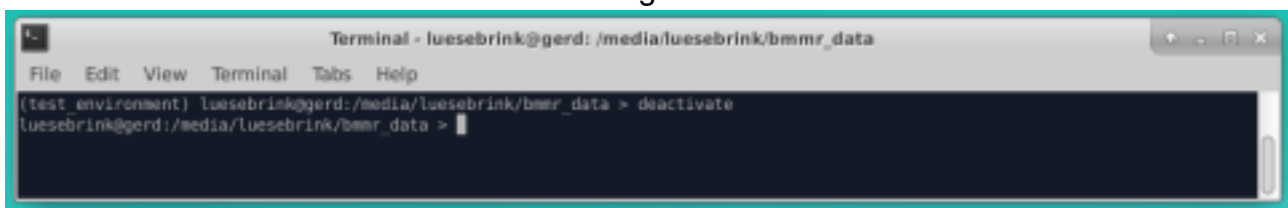
****
* Deactivate virtual environment
****
Command:
deactivate

Description:
This will deactivate the virtual environment again

****
* Download nighres
****
Command:
git clone https://github.com/nighres/nighres
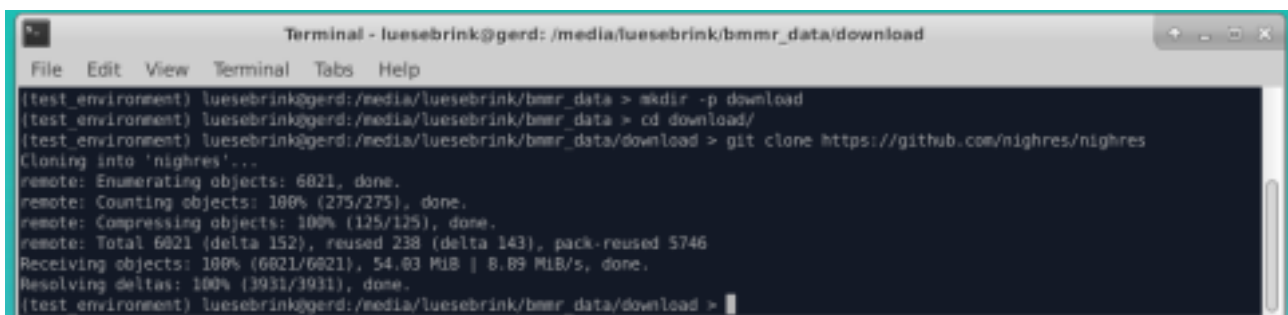
Description:
This will download nighres into the folder you are currently at.
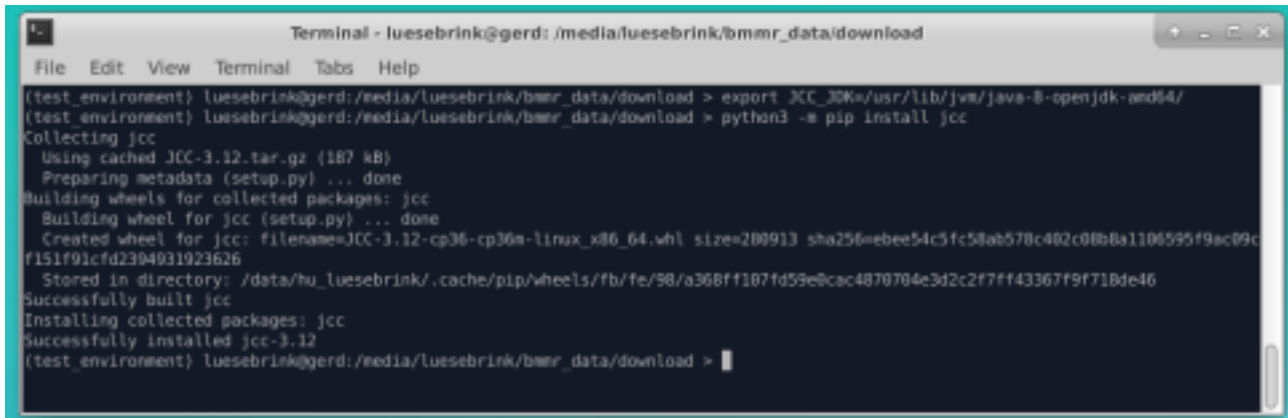
Other options:
In case git is not installed on your system, you can also download nighres from the Github website at "https://github.com/nighres/nighres" by clicking on the green "Code" button and selecting "Download ZIP". You can continue with the installation instructions after decompressing the downloaded ZIP file.

****
* Install JAVA
****

Command:
export JCC_JDK=/usr/lib/jvm/java-8-openjdk-amd64
python3 -m pip install jcc

Description:
The first command will create a variable pointing to your JAVA JDK. Usually it should be in given folder for Debian/Ubuntu amd64 systems. In case it is not in that location please use following command to find it:

find / -type d -name "java-8-openjdk-amd64" 2>/dev/null

This will search on your entire hard disk for the JAVA JDK. The part "2>dev/null" will suppress any errors e.g. in case you don't have permission to access a given folder. Depending on the amount of data on your hard disk, this may take some time to finish. If the folder is found it should be shown in the terminal and please change the line with the export command above accordingly. E.g. if the output would be "/usr/share/gdb/auto-load/usr/lib/jvm/java-8-openjdk-amd64" then the command should be changed to "export JCC_JDK=/usr/share/gdb/auto-load/usr/lib/jvm/java-8-openjdk amd64".

Other options:
In case no folder with the JAVA JDK is found, you need to install it. This requires administrator (sudo) rights. If you don't have them contact your IT staff. The installation is done by typing: "sudo apt-get install openjdk-8-jdk"
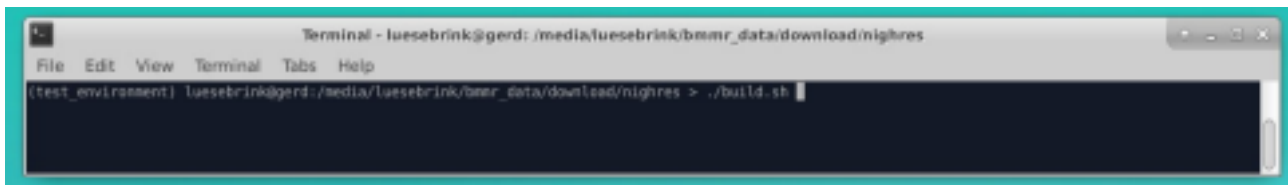

****
* Build nighres
****

Command:
./build.sh

Description:
Navigate to the directory in which you downloaded nighres to, then run the given command. This will build nighres on your computer.

```
*********************************************
* Install nighres
*********************************************
```
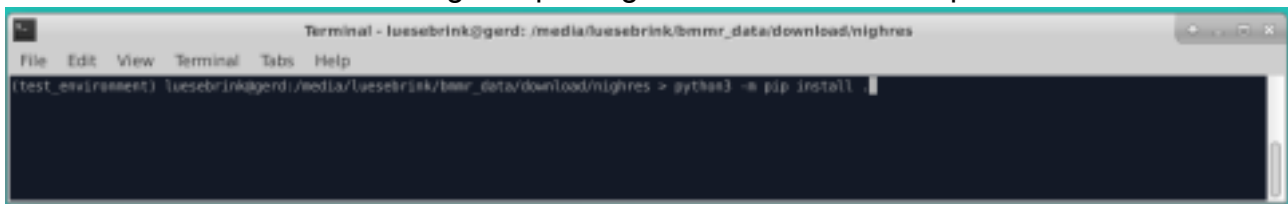
Command:
python3 -m pip install .

Description:
The command will install the nighres package and download its dependencies.


```
*********************************************
* Testing the installation
*********************************************
```
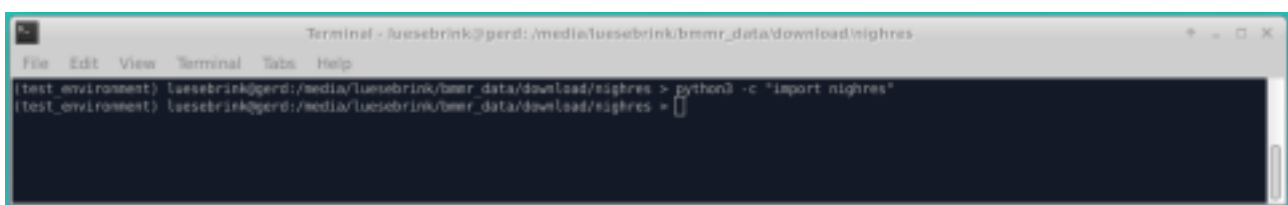
Command:
python3 -c "import nighres"

Description:
If that command doesn't produce any error, you should be good to go. You could try running one of the official tutorials before continuing with this pipeline from "https://nighres.readthedocs.io". Also, in case you run into any error please refer to that page for troubleshooting.
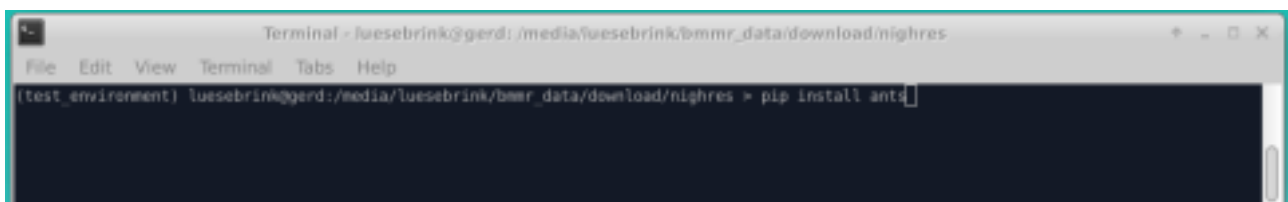

```
*********************************************
* Installing ANTs
*********************************************
```

Command:
pip install ants

Description:
Installs ANTsPy. Used for registration.


```
*********************************************
* Installing nilearn
```

****

Command:
pip install nilearn

Description:
Installs Nilearn. Used to generate a mean image and easy cropping to a ROI.