=== Manage and delete existing environment

$conda env list
$conda deactivate
$conda env remove -n research

=== Install or re-install macOS Conda for research

**** Please strictly follow the order!!!!

Install miniconda

$brew uninstall miniconda
$brew install miniconda

Create virtual Python environment in Conda

$conda create -n research python=3.9
$conda activate research

Install Jupyterlab

$pip install --force-reinstall jupyterlab

$pip install --force-reinstall import-ipynb

#Comments: import_ipynb enables us to import an external Jupyternotebook!
#Example.

```
[12]:  import import_ipynb

[15]:  from comb_filter_impl import load_test_images

[16]:  x, y, labels = load_test_images(image_path = "testimages", znorm = True)

       Loading image_file:  2-African_firefinch-DS_400_Birds.jpg
         class_idx:  12
         class_name =  house finch, linnet, Carpodacus mexicanus
       Loading image_file:  american-goldfinch.jpg
         class_idx:  11
         class_name =  goldfinch, Carduelis carduelis
       Loading image_file:  container-ship-3.jpg
         class_idx:  510
         class_name =  container ship, containership, container vessel
       Loading image_file:  deer.png
         class_idx:  353
         class_name =  gazelle
       Loading image_file:  gazelle.jpg
         class_idx:  353
         class_name =  gazelle
       Loading image_file:  n01532829_251.jpg
         class_idx:  12
         class_name =  house finch, linnet, Carpodacus mexicanus
       Loading image_file:  n01537544_383.jpg
         class_idx:  14
         class_name =  indigo bunting, indigo finch, indigo bird, Passerina cyanea
       Loading image_file:  red-fox-and-magpie-bob-kemp.jpg
         class_idx:  277
         class_name =  red fox, Vulpes vulpes
```

Install PyTorch for macOS with M1 chip

With M1 chip
$pip install --force-reinstall --pre torch torchvision torchaudio --extra-index-url
https://download.pytorch.org/whl/nightly/cpu

not with M1 chip
$pip install --force-reinstall torch torchvision torchaudio

#$pip install --force-reinstall pytorch_lightning

Install other libs.
$pip install --force-reinstall pandas matplotlib tqdm scipy

$pip install --force-reinstall scikit-image

$pip install --force-reinstall scikit-learn

#install open-cv
$pip install --force-reinstall opencv-python

Install tensorflow + keras
$pip install --force-reinstall tensorflow-macos #will automatically install Keras.
$pip install --force-reinstall tensorflow-metal

```
$pip install --force-reinstall seaborn
$pip install --force-reinstall tabulate
```

Tensorboard if necessary
```
$pip install --force-reinstall tensorboard
```

conda with jupyter-lab

```
$brew uninstall miniconda
$brew install miniconda
```

```
$conda init
```
or
```
$conda init bash
```

```
$conda create -n research python=3.9
```

```
$conda activate research
```

```
$conda env list
$conda env remove -n research
```

```
#remove kernels
$jupyter kernelspec list
$jupyter kernelspec uninstall the-kernel-unwanted
```

```
$conda activate research
$pip install jupyterlab
```

```
#pytorch for M1 chip
```

```
$pip install --pre torch torchvision torchaudio --extra-index-url https://download.pytorch.org/whl/nightly/cpu
```

```
$jupyter-lab
```