

Using Docker to run your .ipynb files

While using [Colab](#) is the best, it is sometimes useful to have all your files on your local computer so that even if there is no Internet connection, you can keep working on your program(s). While you can download Anaconda and add IR Kernel to get your Jupyter notebooks to recognize R, a better way is to use a Docker image that already has all the necessary softwares for R built into it. Here is the procedure to get started:

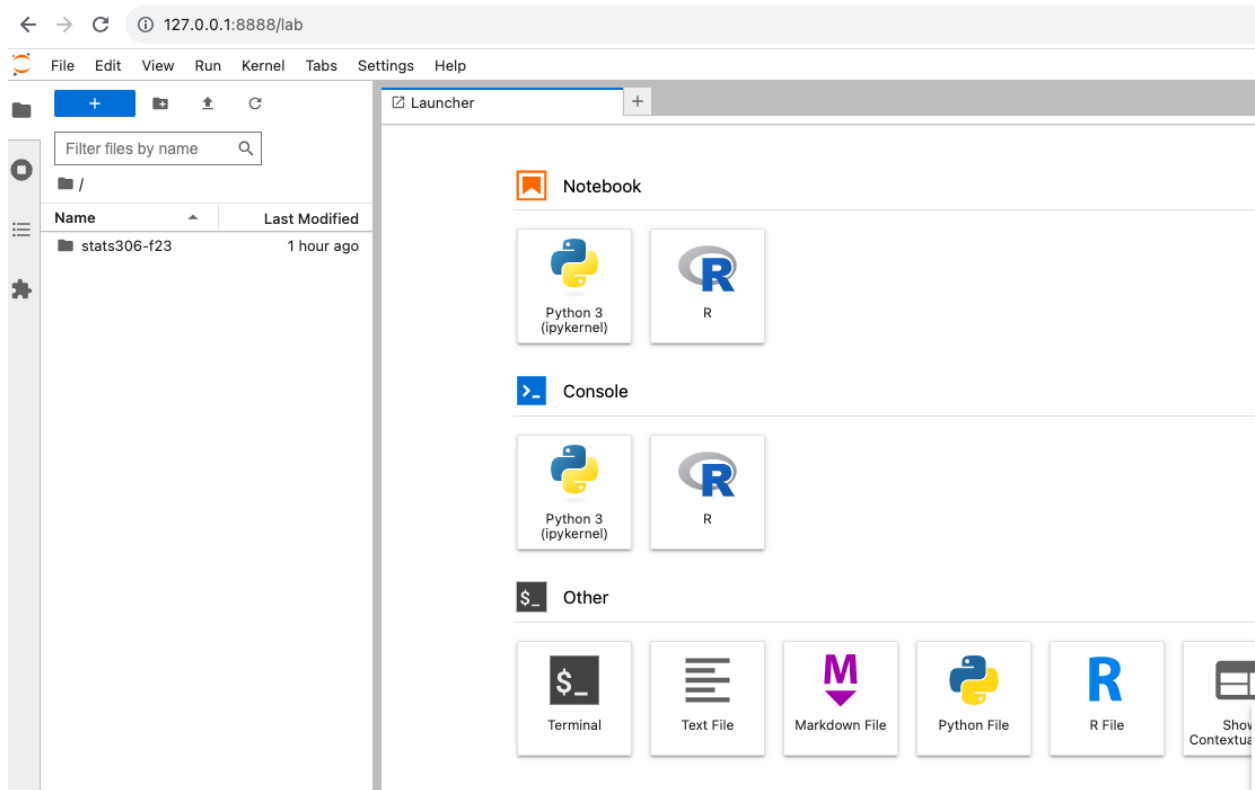
1. First install Docker desktop by following through this link:
<https://www.docker.com/products/docker-desktop/>
2. Now you can download the image that has Jupyter R:
 - a. Open your terminal application and run
`docker pull jupyter/r-notebook`
If you have docker installed correctly from step-1, the above command will download the image
3. Create a directory called **'umich'** in your home directory (you can create anywhere else also but make sure you are in that folder before you run the below command)
4. Change directory to the **umich** directory and clone the git repository for the course:
<https://github.com/jravi123/stats306-f23/tree/main>
5. Now run the below command to create a container using the downloaded image and start the Jupyter server to serve from the umich directory

```
docker run -it -v "${PWD}:/umich" -p 8888:8888 jupyter/r-notebook:latest start-notebook.sh  
--ServerApp.root_dir=/umich
```

If all went well, you will see the terminal show you the Jupyter server's access URL which would be something like this:

<http://127.0.0.1:8888/lab?token=xxxx948cd408ad7a443c0cfd940cf1902fed636e7cf>

Copy paste the URL into your browser and then you will see a page show up like below



Pressing `Ctrl-C` twice shuts down the Server but leaves the container on your computer for later restart.

To start again use the commands below:

1. First list all the containers available using the command

```
docker ps --all
```

You will see a result like shown below

2. Note down the

```
(base) jravi@JS-MacBook-Air umich % docker ps --all
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS          NAMES
8afb1fcc1295   jupyter/r-notebook:latest   "tini -g -- start-no..."   5 minutes ago   Exited (0) 6 seconds ago          romantic_dewdney
```

Note the Container ID number displayed above. We will use that number to restart..

Now you can restart your container with the below command

```
docker start --attach 8afb1fcc1295
```

Note: The number 8afb1fcc1295 that is shown here should be replaced with the number that you see on your computer

References:

What is docker?: [https://en.wikipedia.org/wiki/Docker_\(software\)](https://en.wikipedia.org/wiki/Docker_(software))

<https://hub.docker.com/r/jupyter/r-notebook>

<https://jupyter-docker-stacks.readthedocs.io/en/latest/using/running.html>

<https://github.com/jupyter/docker-stacks>

<https://jupyter-docker-stacks.readthedocs.io/en/latest/using/selecting.html#jupyter-r-notebook>