Hi!

The Docker and Singularity images are not included in this zip folder as they as way too big to be included. I pushed my Docker image to Docker Hub, so once you have installed Docker you will be able to run it easily. Below I provided the commands needed to pull and run my images.

**NB!! Before you run any of these commands, make sure your time and date is correct. The reason for this is that when you run the ‘runs\_python\_file.ipynb’ file and how your date and time is not correct, Twitter kicks you out and doesn’t allow you to stream tweets. The result of this is a 401 error.**

How to run Docker Image:

1. After logging into Docker Hub, pull image from Docker Hub using the command:

**Windows:** docker pull abdullahmcdonald/twitter\_solution\_abdullah\_mcdonald:latest

**Linux:** sudo docker pull abdullahmcdonald/twitter\_solution\_abdullah\_mcdonald:latest

1. Run the image in a container:

**Windows:** docker run –it –e GRANT\_SUDO=yes –user root –p 8888:8888 [Image ID]

**Ubuntu:** sudo docker run –it –e GRANT\_SUDO=yes --user root -p 8888:8888 [Image ID]

**\*\*\* In the above command, the Image ID can be gathered using the command ‘docker images’**

1. Open link to Jupyter Notebook.
2. Run the ‘runs\_python\_file.ipynb’ notebook first.
3. Run the ‘twitterAnalysis.ipynb’ notebook first. However do not run the entire notebook at once. Run it the line that says ‘streaming\_context.start()’. The reason for only running it until here is so that we can gather enough tweets before doing some analysis. So once you run this line, wait 5 minutes so that enough tweets are collected.
4. Run the rest of the notebook.

Converting Docker image for use with Singularity:

1. Once you have installed Singularity, make sure you have the Twitter folder that’s included in this zip folder in some location on your Linux system. We will need to access this folder once we in Jupyter Notebook.
2. Change your directory to your home directory (do not run this command in the ~/Singularity/builddir directory). Now pull image from Docker Hub and build the Singularity image in this directory using the command:

sudo singularity build twitter\_analysis.simg docker://abdullahmcdonald/twitter\_solution\_abdullah\_mcdonald:latest

1. Run the Singularity image within a container using the command:

sudo singularity run twitter\_analysis.simg

1. Open link to Jupyter Notebook.
2. Navigate to the Twitter folder on your file system in Jupyter Notebook and run the ‘runs\_python\_file.ipynb’ notebook first.
3. Next, run the ‘twitterAnalysis.ipynb’ notebook first. However do not run the entire notebook at once. Run it the line that says ‘streaming\_context.start()’. The reason for only running it until here is so that we can gather enough tweets before doing some analysis. So once you run this line, wait 5 minutes so that enough tweets are collected.
4. Run the rest of the notebook.