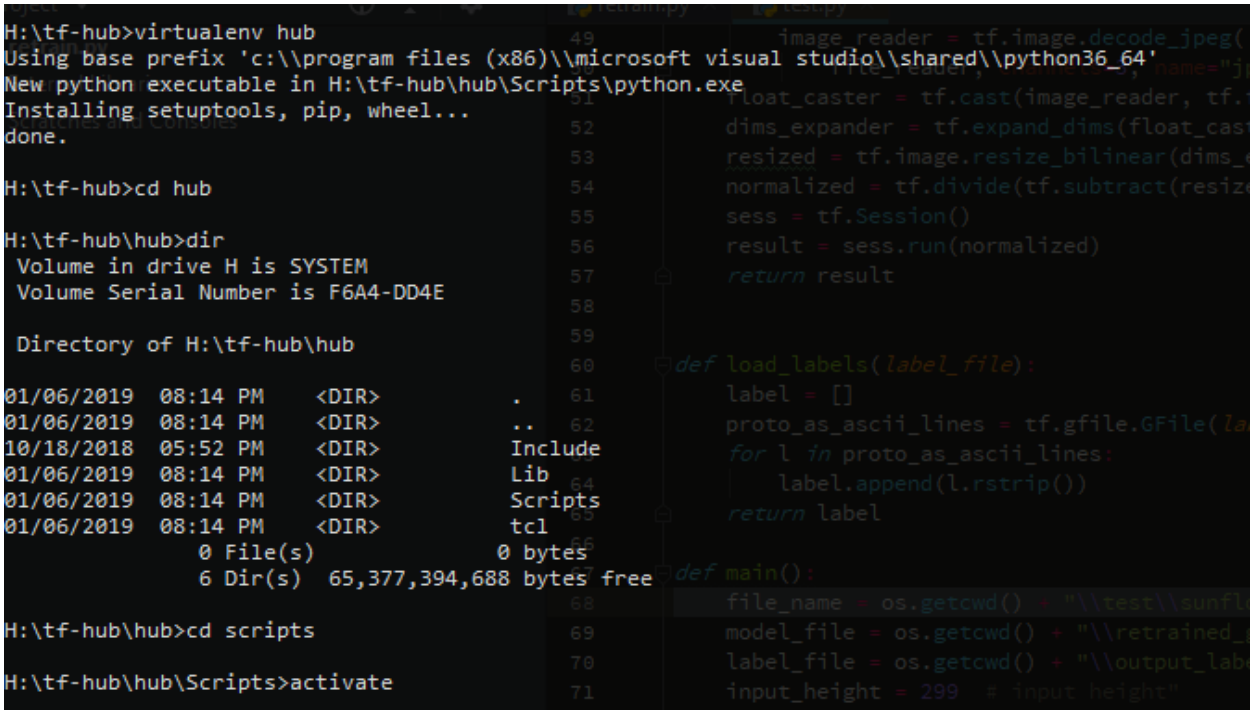
TensorFlow hub is a library for using reusable parts of the machine learning models, which is a library which you can reuse the TensorFlow graphs, along with it's weights, and assets.

This repository contains two source files retrain.py, and test.py

- **retrain.py** Retrain the TensorFlow hub's module
- **test.py** Test an image on retrained model

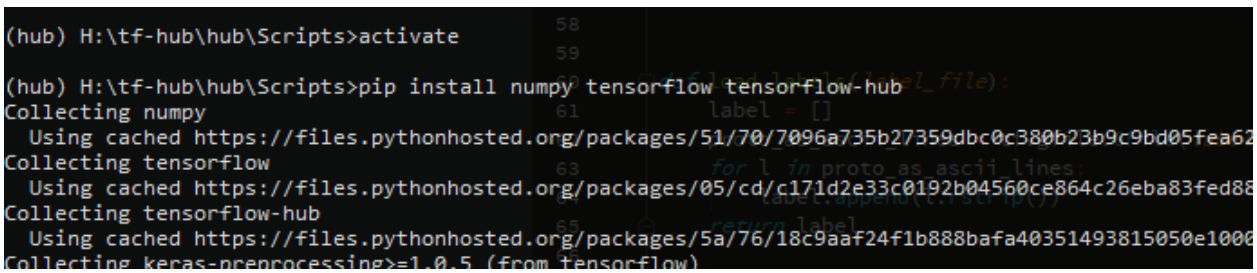
1. Create a virtual environment



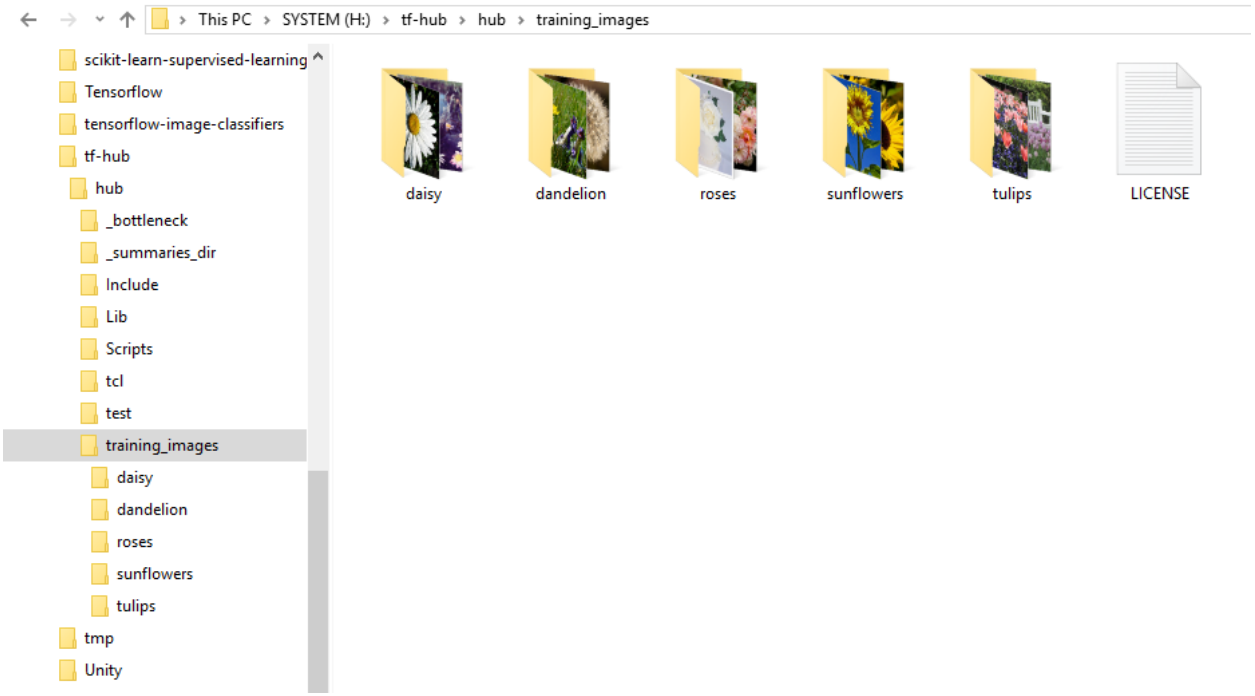
2. Install required dependencies

- **NumPy**
- **TensorFlow**
- **TensorFlow hub**

```
pip install numpy tensorflow tensorflow-hub
```



3. Create a training directory



4. Train your model

Change the name of the **image_dir** which contains training set

```
41  def main():
42      image_dir = os.getcwd() + '\\training_images\\'  # str     path to folders of labeled images
43      output_graph = os.getcwd() + '\\_graph.pb'  # str     where to save the trained graph
44      intermediate_output_graphs_dir = os.getcwd() + '\\_intermediate_graph\\'  # str     where to save the intermediate graphs
45      intermediate_store_frequency = 0  # int     How many steps to store intermediate graph. If "0" then will not store
46      output_labels = os.getcwd() + '\\output_labels.txt'  # str     where to save the trained graph's labels
47      summaries_dir = os.getcwd() + '\\_summaries_dir'  # str     where to save summary logs for TensorBoard
48      how_many_training_steps = 100  # int     default 4000 how many training steps to run before ending
49      learning_rate = 0.01  # float   how large a learning rate to use when training
```

```
python retrain.py
```

```
(hub) H:\tf-hub\hub\Scripts>cd ..

(hub) H:\tf-hub\hub>python retrain.py
main()
prepare_file_system() H:\tf-hub\hub\_summaries_dir
create_image_lists(H:\tf-hub\hub\training_images\, 10, 10)
INFO:tensorflow:Looking for images in 'daisy'
INFO:tensorflow:Looking for images in 'dandelion'
INFO:tensorflow:Looking for images in 'roses'
INFO:tensorflow:Looking for images in 'sunflowers'
INFO:tensorflow:Looking for images in 'tulips'
image_lists OrderedDict([('daisy', {'dir': 'daisy', 'training': ['100080576_f52e8ee070_n.jpg', '10
```

5. **Test the images**

   Change the name of the **file_name** which is used to test the predictions

```
67  def main():
68      file_name = os.getcwd() + "\\test\\sunflower.jpg"  # image to be processed
69      model_file = os.getcwd() + "\\_graph.pb"  # graph/model to be executed
70      label_file = os.getcwd() + "\\_labels.txt"  # name of file containing labels
71      input_height = 299  # input height"
72      input_width = 299  # input width
73      input_mean = 1  # input mean
74      input_std = 255  # input std
75      input_layer = "Placeholder"  # name of input layer
76      output_layer = "final_result"  # name of output layer
77      graph = load_graph(model_file)
```

```
python test.py
```

```
INFO:tensorflow:Froze 378 variables.
INFO:tensorflow:Converted 378 variables to const ops.

(hub) H:\tf-hub\hub>python test.py
2019-01-06 20:59:48.664466: I tensorflow/core/platform/cpu_feature_guard.cc:141] Your CPU supports instructions that this
2
sunflowers 0.48977023
roses 0.19306159
tulips 0.13504855
dandelion 0.12648144
daisy 0.055638164

(hub) H:\tf-hub\hub>
```

Repository https://github.com/gayankuruppu/tensorflowhub-retrain.py-test.py