1.Download LAbelImg , for Windows -> v1.8.0 or higher

open windows\_v1.8.0/data/predicted\_classes.txt -> remove everythin and write class name you want to label and later predict.(Else class id will give error in models like yolo)

2.cd tfod/sampleimage/

Copy paste some images in this folder for doing annotataion

OpenLabelImg -> Open Dir -> Click on pascalvoc for TFOD (not yolo format) -> Click on CreateRectBox -> Draw the rectangle and select the class -> Save .

Label each object separately whether they belong to same class or different class.

Click on Next image -> repeat the process

vi tfod/models/research/training/labelmap.pbtxt -> file used for mention name of the classes in TFOD setup.

3.cd tfod/models/research

python xml\_to\_csv.py

vi generate\_tfrecord.py #in this python file ,change the class name in class\_text\_to\_int(row\_label) function.

#save the chnages and exit from file , copy the command also to create train and test data

python generate\_tfrecord.py --csv\_input=images/train\_labels.csv --image/train --output\_pat=train.record

python generate\_tfrecord.py --csv\_input=images/test\_labels.csv --image/test --output\_pat=test.record

vi train.record #these are TF record binary format file which we need

vi test.record

4.move faster\_rcnn folder to tfod/models/research

COPY tfod/models/research/object\_detection/samples/config/faster\_rcnn\_inception\_v2\_coco.config

PASTE in tfod/models/research/training/

vi tfod/models/research/object\_detection/samples/config/faster\_rcnn\_inception\_v2\_coco.config

make the following changes :

num\_classes = 6 #as per your total no. of classes in Line 10

fine\_tune\_checkpoint: "faster\_rcnn/model.ckpt" #line107

num\_steps: 2500 #line 113 ,as per your cpu/gpu capapcity , higher for gpu =200000

input\_path: "train.record" #line122

label\_map\_path:"training/labelmap.pbtxt" #line124

input\_path:"test.record"#line 136

label\_map\_path:"training/labelmap.pbtxt" #line136

5.copy tfod/models/research/object\_detetction/legacy/train.py

paste tfod/models/research folder

6.copy tfod/models/research/slim/deployment & nets folder paste in tfod/models/research

7.#train the model

cd tfod/models/research

python train.py --logtostderr --train\_dir=training/ --pipeline\_config\_path=training/faster\_rcnn\_inception\_v2\_coco.config

8.#Inferencing , 2500 -> the checkpoint

#copy export\_inference\_graph.py from object\_detection folder to research folder

python export\_inference\_graph.py --input\_type image\_tensor --pipeline\_config\_path training/faster\_rcnn\_inception\_v2\_coco.config --trained\_checkpoint\_prefix training/model.ckpt-2500 --output\_directory inference\_graph

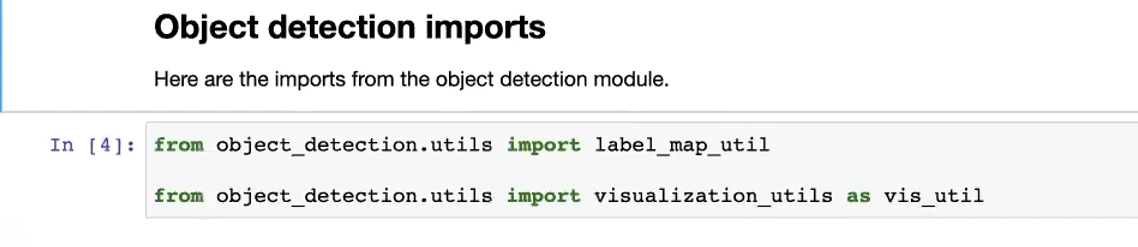
9. cd research/inference\_graph

check inferencing files present

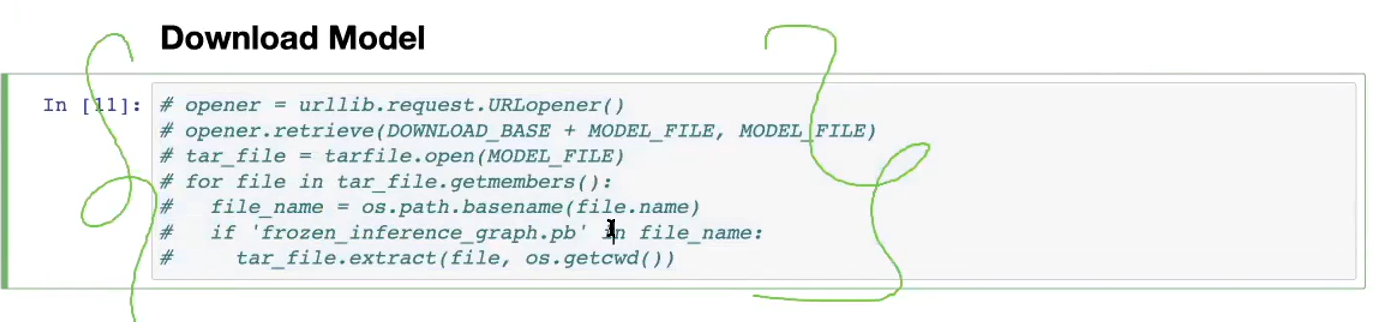
10.cd research

jupyter notebook

open object\_detection\_tutorial.ipynb

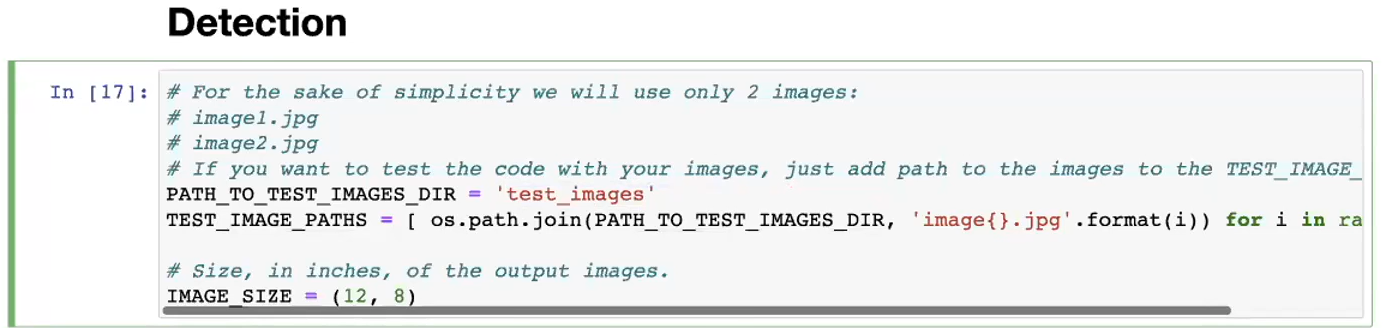






Create test\_images folder in research folder.

Copy few images from research/test folder and paste in research/test\_images and rename those images



Made the above changes and executes all cell in notebook.

Share below two files for sharing the models:

* Research/inference\_graph/frozen\_inference\_graph.pb
* Labelmap.pbtxt

**TF\_Lite use only SSD model.**

**TF\_Lite use for mobile devices(not for PC).**

**TFOD 2.x**

[models/object\_detection\_tutorial.ipynb at master · tensorflow/models (github.com)](https://github.com/tensorflow/models/blob/master/research/object_detection/colab_tutorials/object_detection_tutorial.ipynb)