

To install virtual box and Ubuntu os follow the link given bellow:

<https://www.youtube.com/watch?v=x5MhydiWmc>

After completing the Ubuntu installation on virtual box.

Open the Ubuntu OS on virtual box.

Goto the terminal or command prompt in ubuntu to install the packages that required for an Computer vision engineer.

You will find the Terminal in desktop

1.In the bottom right you will find Show Application ,click on that.

2.After clicking on that you will search bar at top.

3.Type on that search bar as Terminal, you will find a Terminal.

4.Right click on that Terminal , it will show add to favourites, click on that so it will add on desktop tabs.

5.click on that terminal and install all packages given bellow:

```
sudo apt update
```

```
sudo apt install python3-pip
```

```
sudo apt-get install python3-opencv
```

```
sudo apt-get install cmake
```

```
sudo pip3 install numpy
```

```
sudo apt-get install gcc g++
```

```
sudo apt-get install libavcodec-dev libavformat-dev libswscale-dev
```

```
sudo apt-get install -y libgstreamer-plugins-base1.0-dev
```

```
sudo apt-get install -y libgstreamer1.0-dev
```

```
sudo apt-get install libgtk-3-dev
```

```
sudo apt-get install libpng-dev libjpeg-dev libopenexr-dev libtiff-dev libwebp-dev
```

```
sudo pip3 install numpy scipy matplotlib scikit-image scikit-learn ipython
```

```
sudo pip3 install opencv-contrib-python
```

```
sudo pip3 install tensorflow
```

```
sudo apt-get install pyqt5-dev-tools
```

```
sudo pip install lxml
```

After completing the installation of all packages given above

you have to clone the label image tool using:

```
git clone https://github.com/tzutalin/labelImg.git
```

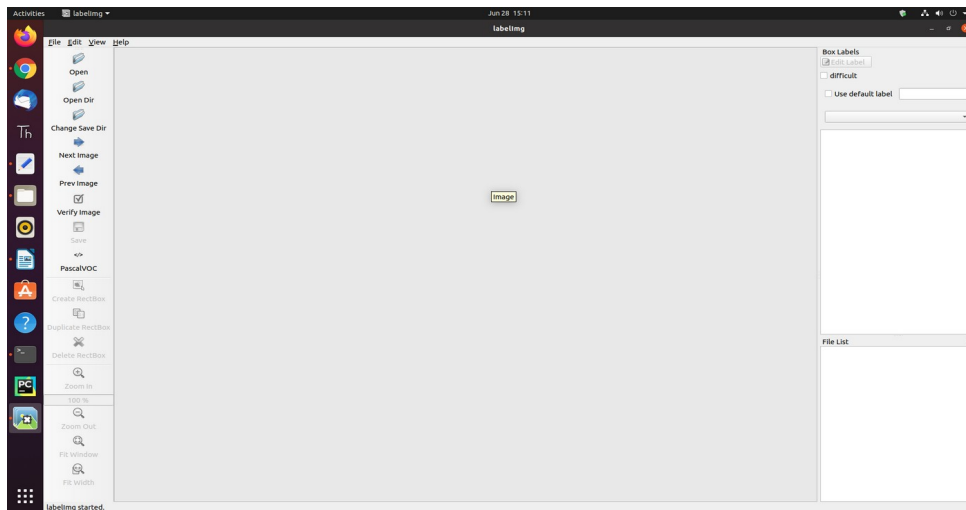
Next you have change the directory to labelImg using :

```
cd labelImg
```

Next, You have to run the code using:

```
python3 labelImg.py
```

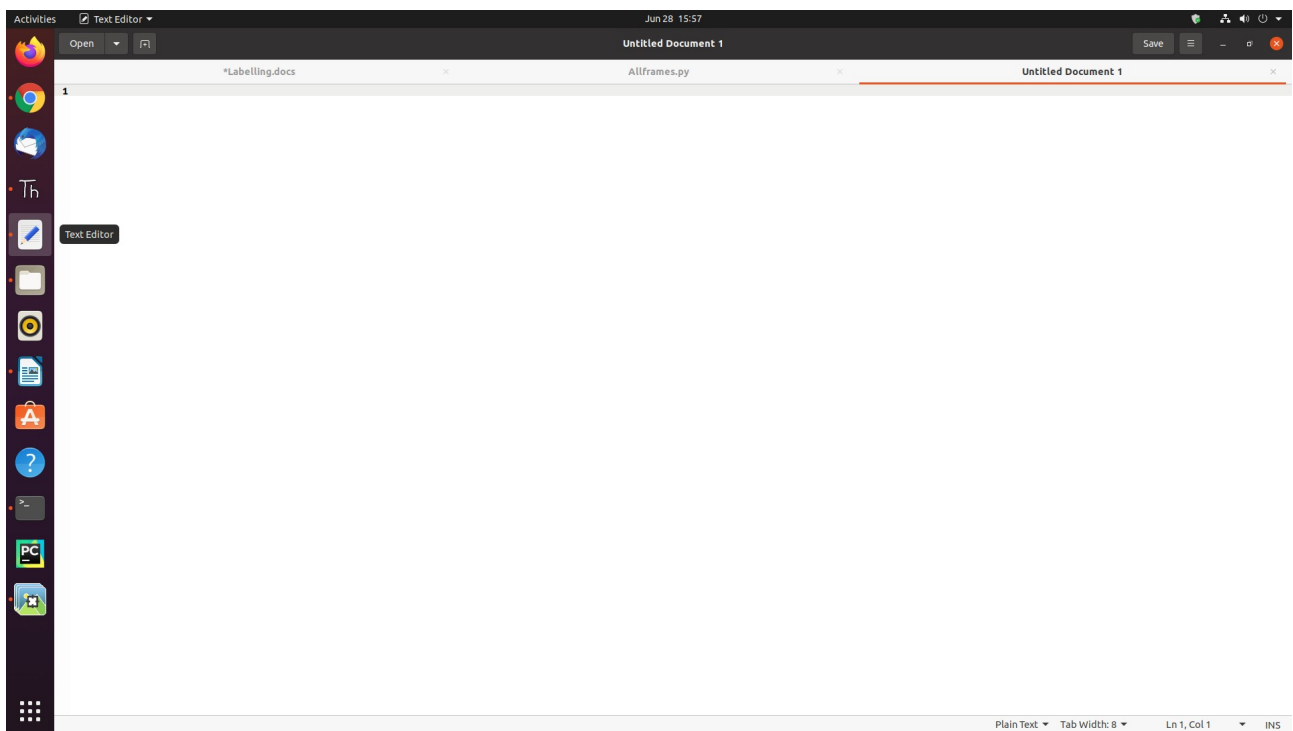
After running python3 labelImg.py , the labeling tool will open



After Tool is opened

Now, you have to convert a videos into frames using python code

So now you have to open Text editor that available on desktop tab or else goto show application at bottom right find on the search bar typing Text Editor



copy the code and paste it at Text editor  
save the code with frames.py which is given below

```

# Importing all necessary libraries
import cv2
import os

# Read the video from specified path
cam = cv2.VideoCapture("/home/chakri/Documents/Open_cv_tasks/1.mp4")
cam = cv2.VideoCapture("1.mp4")

try:

    # creating a folder named data
    if not os.path.exists('data'):
        os.makedirs('data')

# if not created then raise error
except OSError:
    print ('Error: Creating directory of data')

# frame
currentframe = 0

while(True):

    # reading from frame
    ret,frame = cam.read()

    if ret:
        # if video is still left continue creating images
        name = './data/frame' + str(currentframe) + '.jpg'
        print ('Creating...' + name)

        # writing the extracted images
        cv2.imwrite(name, frame)

        # increasing counter so that it will
        # show how many frames are created
        currentframe += 1

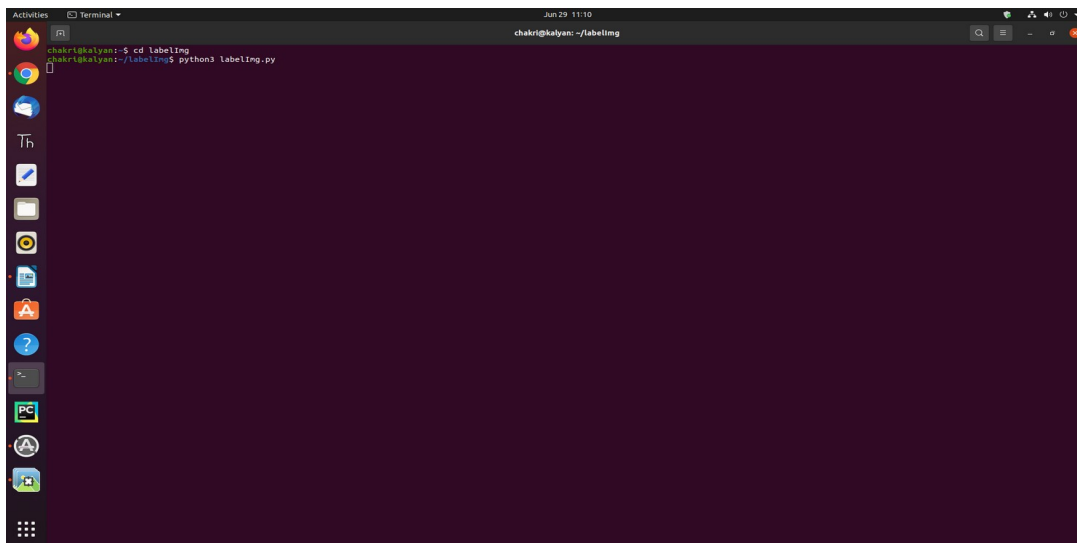
# Release all space and windows once done
cam.release()
cv2.destroyAllWindows()

```

After saving the code , Goto terminal and run the code with  
python3 frames.py

After running the code  
Video will convert into frames in a data folder

Now open Label-image tool

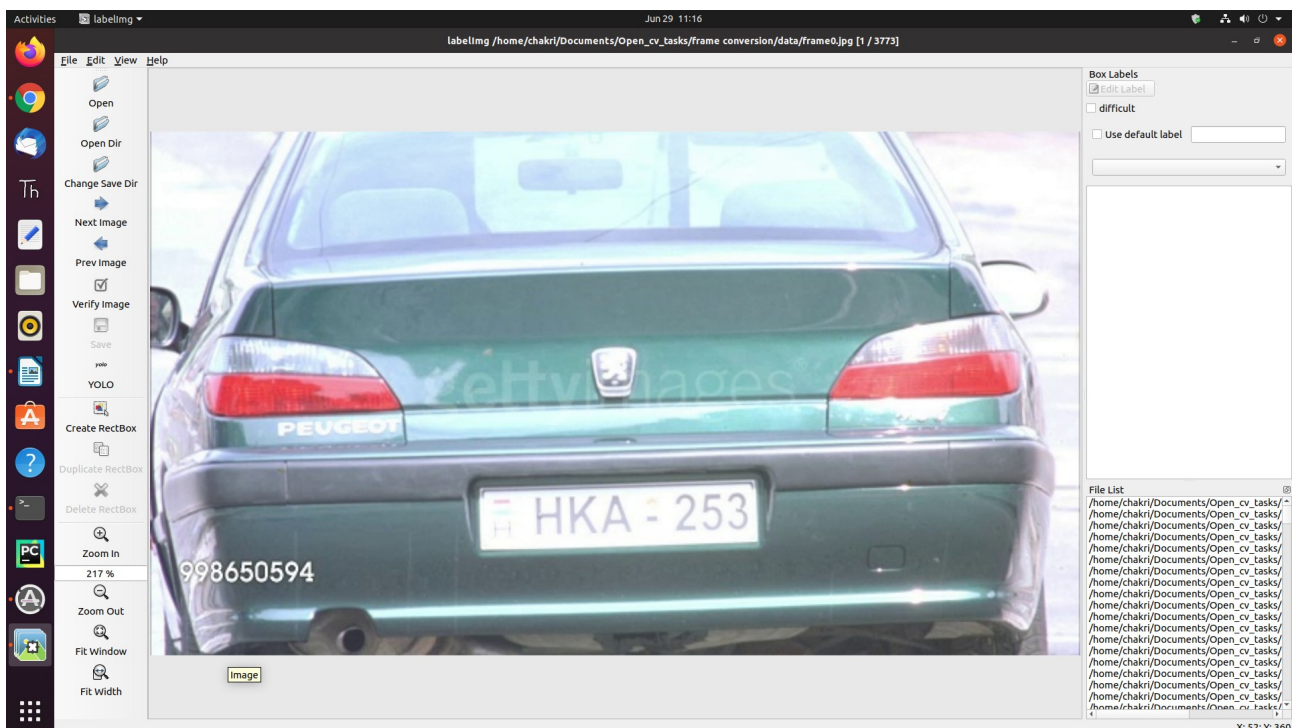


After running the code label-image tool will open

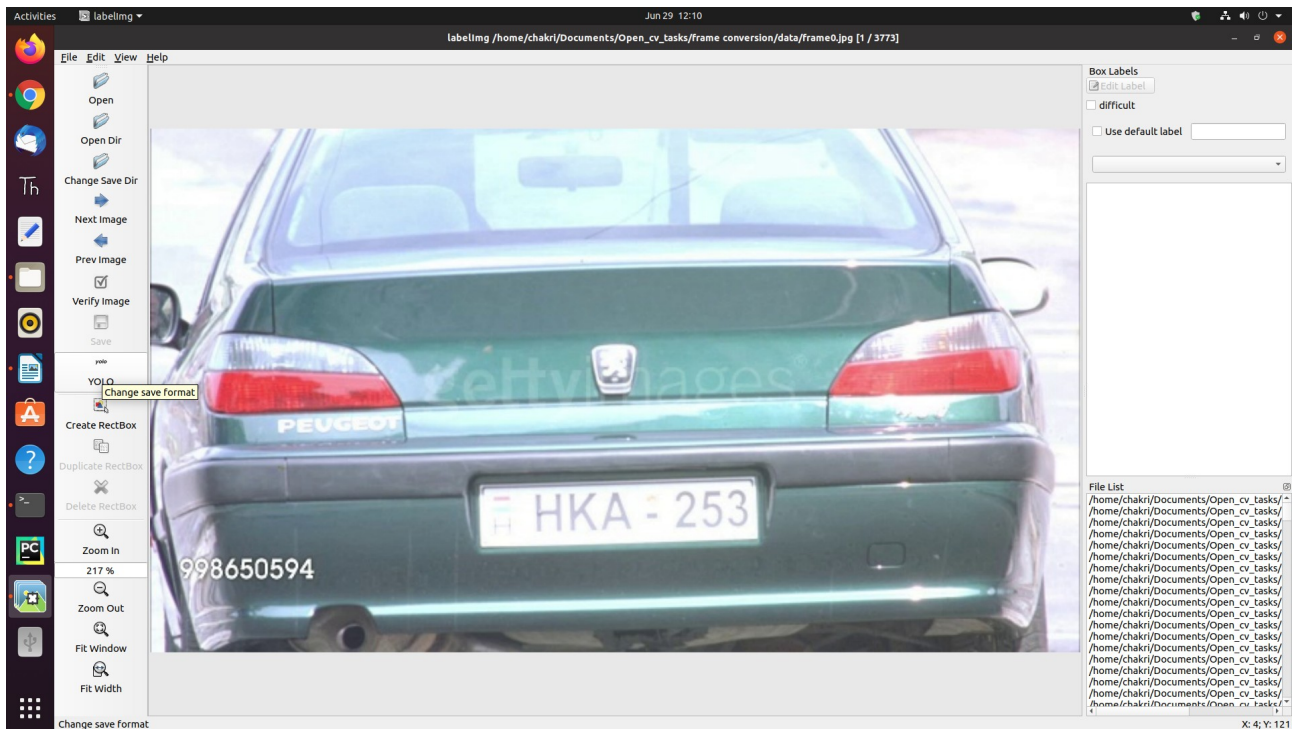
So we converted video into frames

Click on open Directory and open the frames of data folder where it is located

After opening the file it looks like this

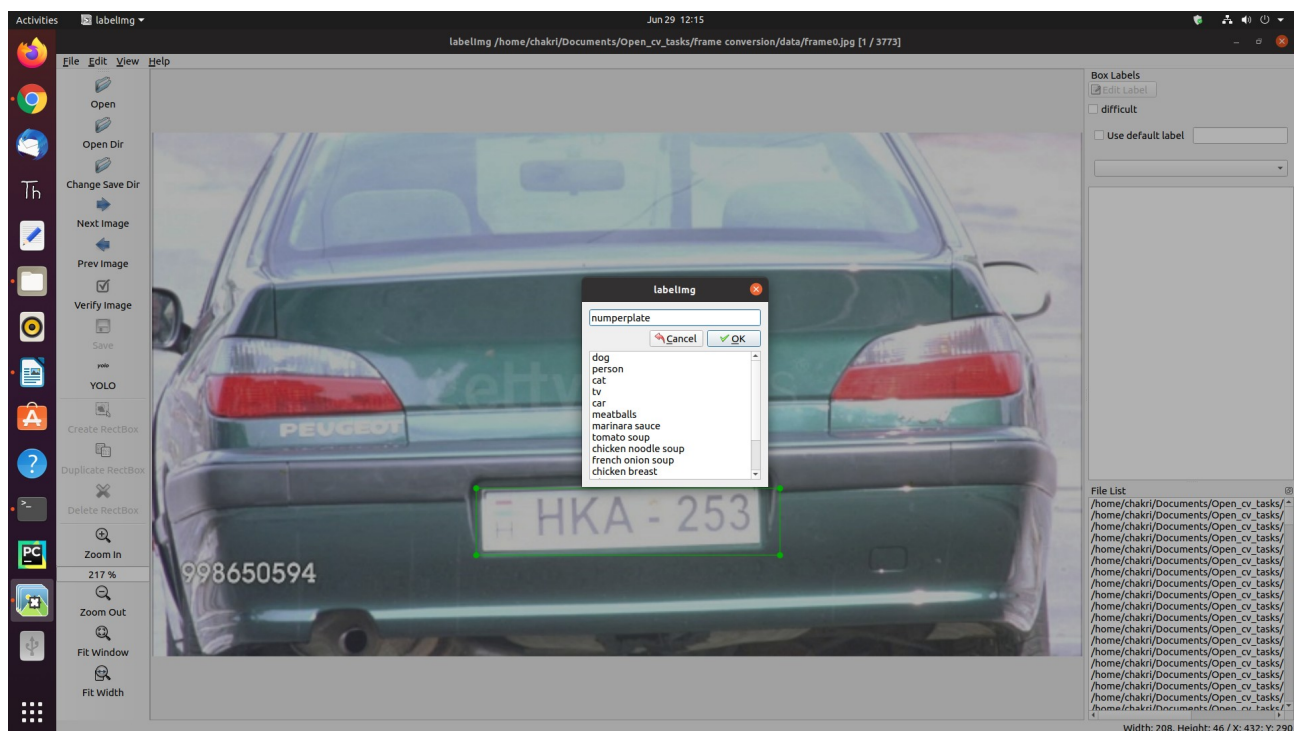


Now you have to change the format into YOLO – You Only Live Once



Next click on the Create rectangleBox

Drag and drop at number plate and save the name with number-plate as shown below:



Now save the file in the same folder with same name present at the folder.

After that click on the Next Image and do the same process for the remaining images.