

## Work on windows

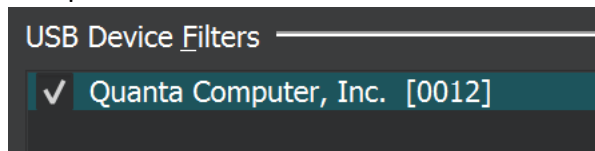
1. Download dataset from kaggle both [emotion](#) & [drowsiness](#)
  - a. Download the all files from repository
  - b. Open the train model script from repository for emotion and drowsiness in vscode
  - c. Download the libraries:
    - i. pip install tensorflow
    - ii. pip install numpy
  - d. Adjust the dataset path in train model files
  - e. Run the file, one by one –it takes time
  - f. After completion it makes .h5 file in same folder
  - g. Run the conversion script , update the path of .h5 file in script →it converts .h5 into tflite
2. Install Lubuntu from [website](#)
3. Install virtual box from [website](#)
4. Install virtual box extension pack from [website](#)

### Virtual box setting

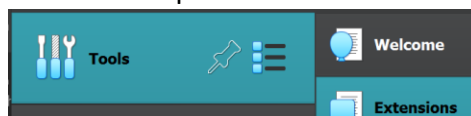
- Insert ISO File of lubuntu
- CPU 1
- Base Memory 4096 MB

### After install lubuntu

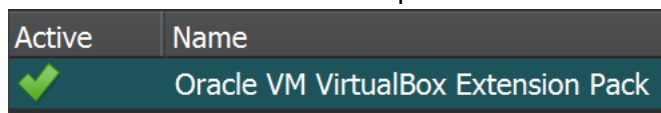
- Go to the setting of your machine in virtual box -> USB -> Add usb filter “Quanta Computer”



- Go to tools option -> Extension



- Add the virtual box extension pack



if there is green tick it means you installed correctly

## Work on lubuntu

1. Installed lubuntu successfully
2. Open terminal and run these commands to install packages

### # Install required packages

```
sudo apt-get update  
sudo apt update  
sudo apt upgrade
```

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

### # Install Python packages

```
pip install opencv-python  
pip3 install numpy  
pip install tensorflow  
pip install tensorflow tflite_runtime
```

**This assumes that you have Python 3 installed on your Lubuntu machine. If you don't have Python 3, you can install it using:**

```
sudo apt-get install -y python3
```


3. Install vscode for Linux , [website](#)
4. Install python extension in vscode
5. Download the files from repository & trained model folder from Gmail which I sent to sir Iqbal

Or

If you trained model by yourself keep the trained model file here and update the path

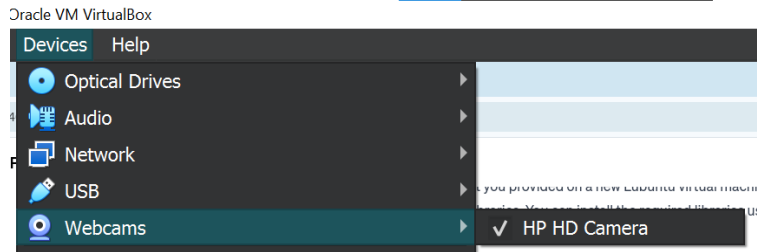
6. Make a folder on desktop "fyp" keep all files from repository in this folder and also keep trained model folder

As like that:

Fyp 

- 1. Repository files , → harcascode folder & .py files
- 2. Trained model → 1. drowsiness\_detection\_model\_100epochs\_no\_opt.tflite  
2. emotion\_detection\_model\_100epochs\_no\_opt.tflite

7. Check the camera option



8. Run the “inference\_script\_emotion\_drowsinessV2.py” file for detection

### **FULL SCREEN IN LUBUNTU VIRTUAL BOX**

1. Start Lubuntu in VirtualBox:
  - Boot your Lubuntu virtual machine.
2. Update and Upgrade:
  - Open a terminal (you can right-click on the desktop and select "Open Terminal Here" or use the keyboard shortcut Ctrl + Alt + T).
  - Run the following commands to update and upgrade your system:

bashCopy code

sudo apt update  
sudo apt upgrade

3. Install VirtualBox Guest Additions:
  - In the VirtualBox menu at the top of the screen, go to "Devices" and select "Insert Guest Additions CD image...".
4. Mount the VirtualBox Guest Additions CD:
  - Open a terminal and navigate to the mounted CD directory. Usually, it's in /media:

bashCopy code

cd /media/\$USER/VBox\_GAs\_[your\_version]

Replace [your\_version] with the actual version number.

5. Run the Guest Additions installer:
  - Run the following command to start the installation:

bashCopy code

sudo ./VBoxLinuxAdditions.run

**I write all steps very carefully if there is something that I missed, please let me know.**

**Jazakallah**