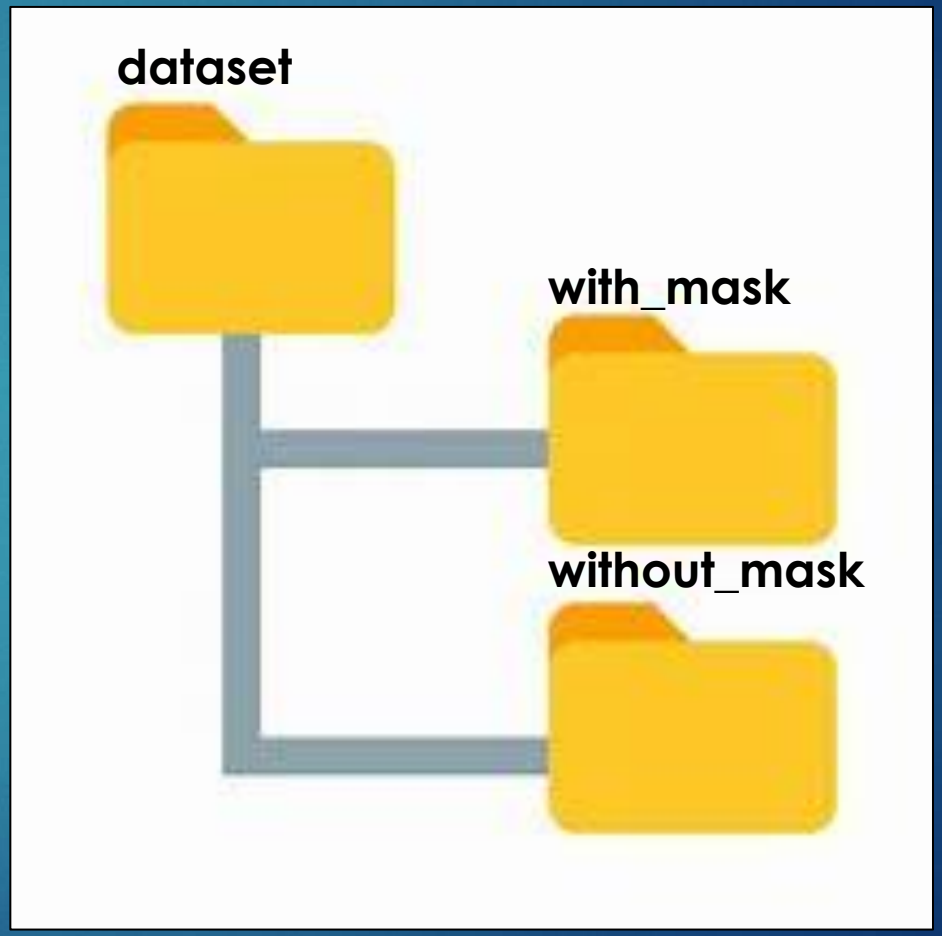
THE GUIDE TO USE THE FACE MASK DETECTOR "MASQUERADE"

CONTENTS OF REPOSITORY

- mask_detection.h5
- haarcascade_frontalface_alt2.xml
- detector.py
- TRAINING.ipynb
- DATASET
- pie chart.png
- detect.png

DATASET COMPRISES OF IMAGES WITH THE FOLLOWING HIERARCHY



*All files require to be placed in the same folder for the detector to be trained and to function.

MODULES REQUIRED TO BE INSTALLED

- opencv
- tensorflow
- keras
- numpy
- pyaudio
- matplotlib
- gTTS
- playsound

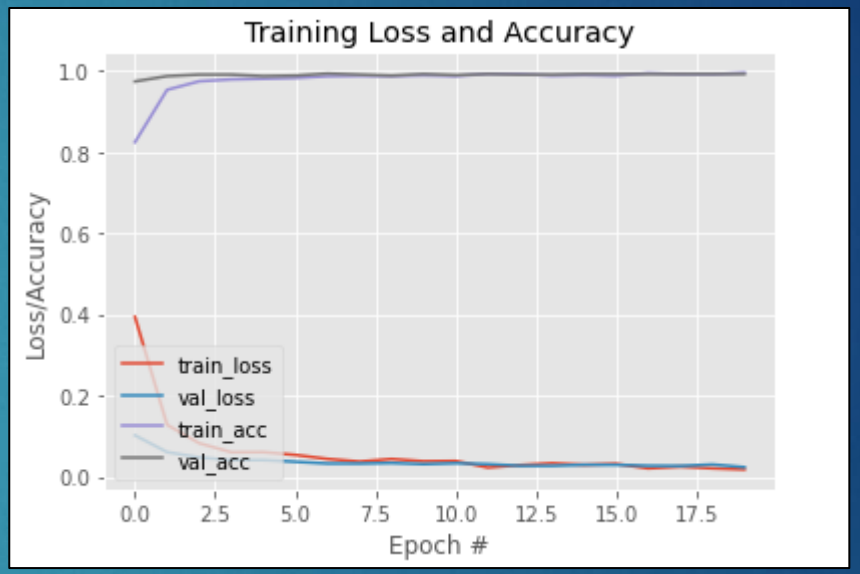
TRAINING.ipynb

1. Install the necessary modules mentioned on page 3.
2. Download the dataset from the following link: https://drive.google.com/drive/folders/1XDte2DL2Mf_hw4NsmGst7QtYoU7sMBVG . Save the dataset in the same folder as the other files.
3. C:\\Users\\sovin\\Desktop\\FACE\\dataset should be set with respect to your dataset path wherever required.
4. Run TRAINING.ipynb file using Jupyter Notebook.
5. Model mask_detection.h5 will be saved on your local system which can be used for further prediction.

*If you don't want to retrain the model, you can skip to page 7

mask_detection.h5

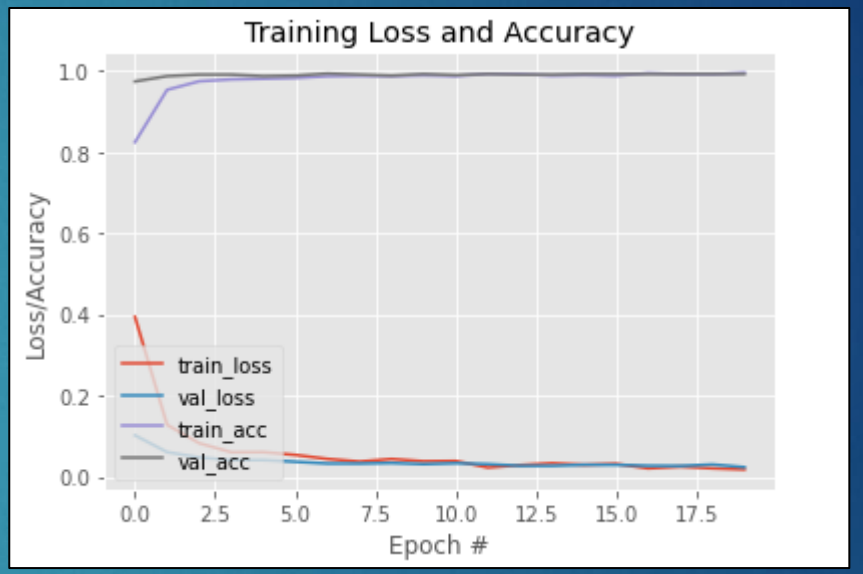
mask_detection.h5 is the saved model to detect people wearing masks or not wearing masks.



Training loss and Accuracy graph for the model

haarcascade_frontalface_alt2.xml

The work with a cascade classifier includes two major stages: training and detection. Instead of creating and training the model from scratch, we are have used "haarcascade_frontalface_alt2.xml" file in this project for facial detection.



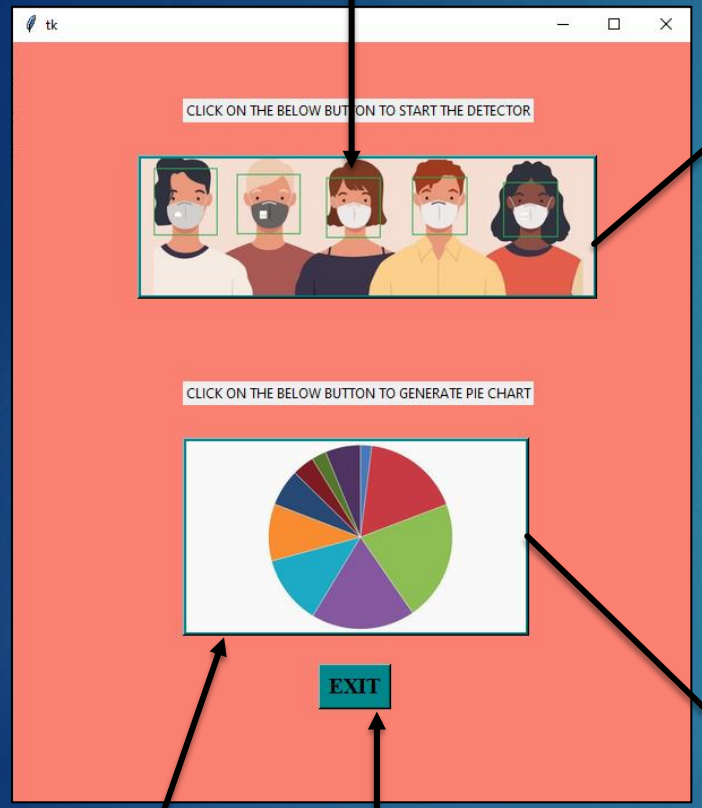
Training loss and Accuracy graph for the model

detector.py

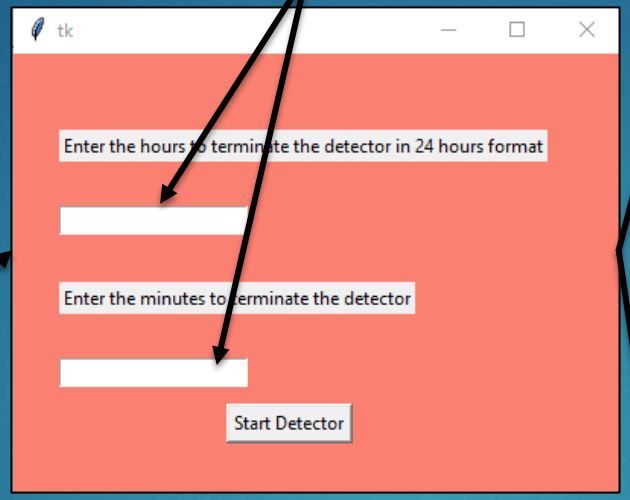
1. Install the necessary modules mentioned on page 3.
2. Run detect.py using python IDLE.
3. Follow the process given in the next page to utilize the fast mask detector.

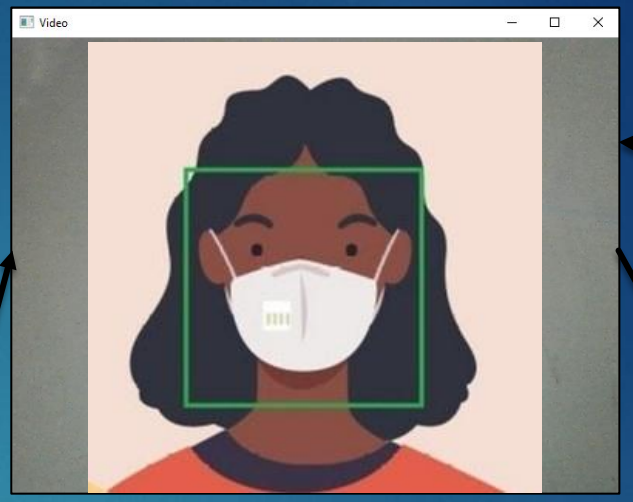
PROJECT FLOW

Click on the button to start the mask detector

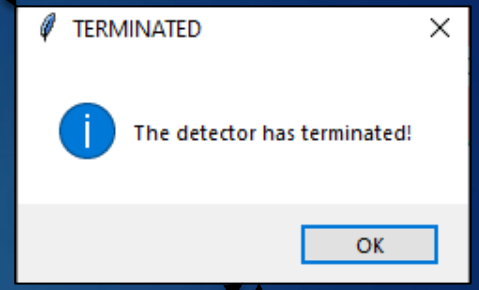


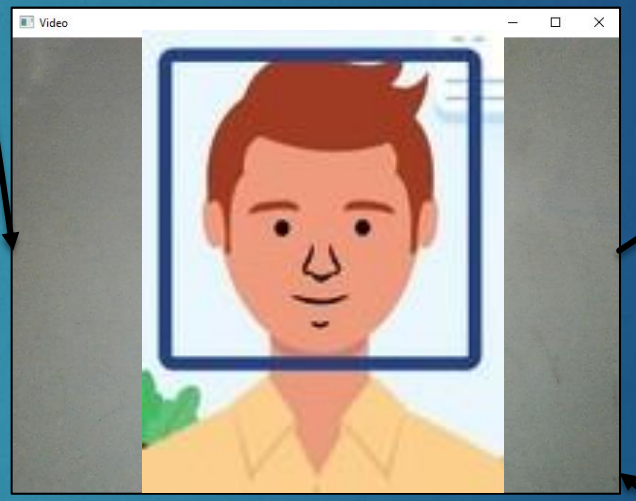
Enter the hours in 24 hours format and minutes at which the detector is to be terminated



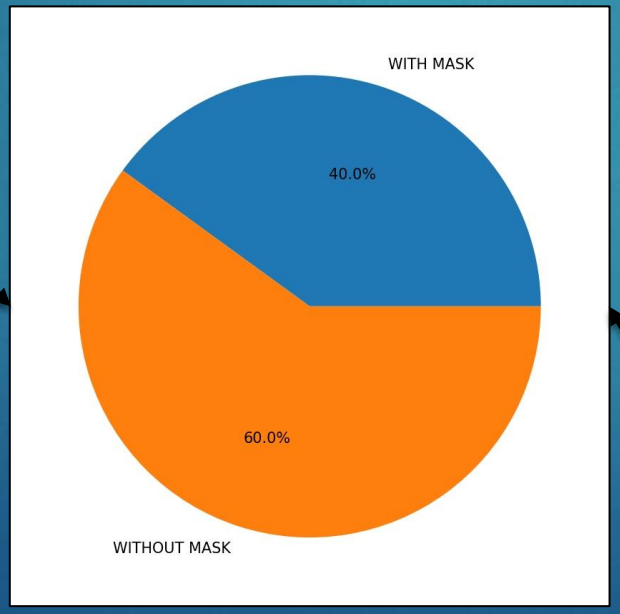


If it is detected that the person is wearing a mask, the system gives an audio stating "Great! You have got your mask on! Kindly use the sanitizer! Have a safe day!"





When the detector reaches the time to terminate, this dialogue box appears. This informs the user that the detector has terminated.



The pie chart is generated and stored in the local system

If it is detected that the person is not wearing a mask, the system gives an audio stating "Kindly wear a mask! Your not allowed to enter!"

Click on the button to generate pie chart

Click on the button to exit

Thank You!