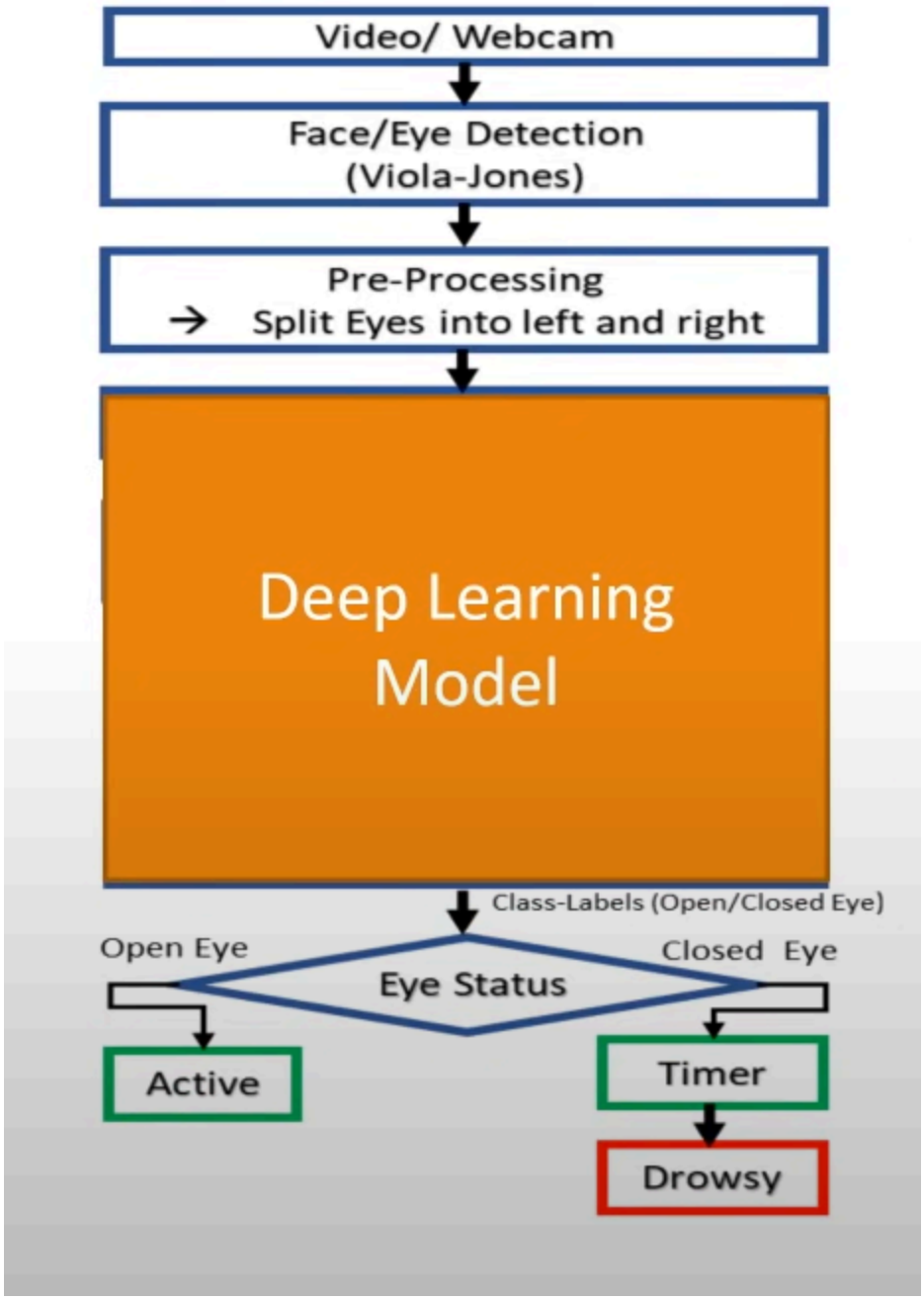
1. Uses a library/prebuilt model to make a new observation.
We will be training our collected data from the MRL (Media Research lab) Eye dataset which contains eye images of 37 different individuals (33 men and 4 women) which contains approximately 84.9k images in total and in training set close eyes (40.4k images) ,open eyes (41.3k images) and in testing set close eyes (1566 images) and open eyes (1657 images).But as the hardware requirements are strict for this huge dataset currently i am trying to train the code (which is pushed into the repo recently) for only total 4k images in the training set at first and then i will train for the whole 84k dataset. We're using prebuilt libraries like mobilenet which is a transfer learning architecture to train our data. After training we will be checking if the prediction is correct for the test data. After satisfactory accuracy results (like accuracy vs epochs) we will now implement this for real time detection where we will write the code logic to open the web cam from our computer and using Haar Cascade eye classifier xml files which is a implementation of voila jones object detection algorithm in OpenCV we will be able to detect eyes in real-time.Then after obtaining the eye images we will load our above mentioned trained deep learning model and predict if our eyes appearing in the web cam are closed or open for each eye and also we will implement logic to give an alarm if the eyes are closed for longer time. Finally decided on the project flowchart as follows:


Video/ Webcam
Face/Eye Detection
(Viola-Jones)
Pre-Processing
→ Split Eyes into left and right
Deep Learning
Model
Class-Labels (Open/Closed Eye)
Open Eye
Eye Status
Closed Eye
Active
Timer
Drowsy