Working:

Step 1:- Start the project

step 2 :- Take video as input and run it through CV2.videocapture

Step 3:- Road Each frame from the video using cap.read()

Step 4:- Detect 2 wheelers in that frame.

Step 5:- If there is 2 wheelers detect the person head who is riding the bike using yoLo Model

step 6 :- If the hand detected them check whether he is wearing the helmet or not

step 7:- If he is not clears wears helmet them defect number plate and crop the image

Step 8:- Extract the text from number plate using OCR

step 9:- Display the results

Step 10:- Stop the project

FLOW CHART:-

START

Take video as input

Read Frame

NO

Detect bike

NO

Detect person head

NO

Detect helmet

YES

Detect number plate

Extract number plate text

STOP

ALGORITHM:-

convolution layer:

convolution is the first layer to Extract features from an input image convolution presences the relationship between pixels. by learning image features using small squares of input data convolution of an image with different filters can perform operations such Edge detection, blur and sharpen by applying filters i.e. identify filter,edge detection,sharpen and craussian blur filter.

pooling Layer:-

pooting layer world reduce the number of parameters when the image is too large. Speatial pooling also called sub sampling or down sampling which reduce the dimensionality of each map but retain import information.

Fully connected layer:-

In the layer feature map matrix will be conurted as vector (X1,X2,X3X…..) with the fully connected layer, we combined there features together to create a model.

System architecture:-

Helmet detection

Training data

Feature classification

Feature extraction

Image preprocessing

User Input Image