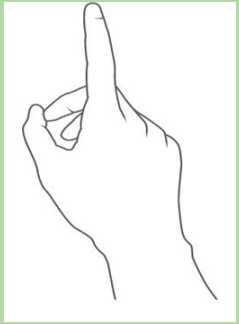
TEXT RECOGNITION THROUGH GESTURES

(An application of Computer Vision and Deep Learning)



PRESENTATION BY:

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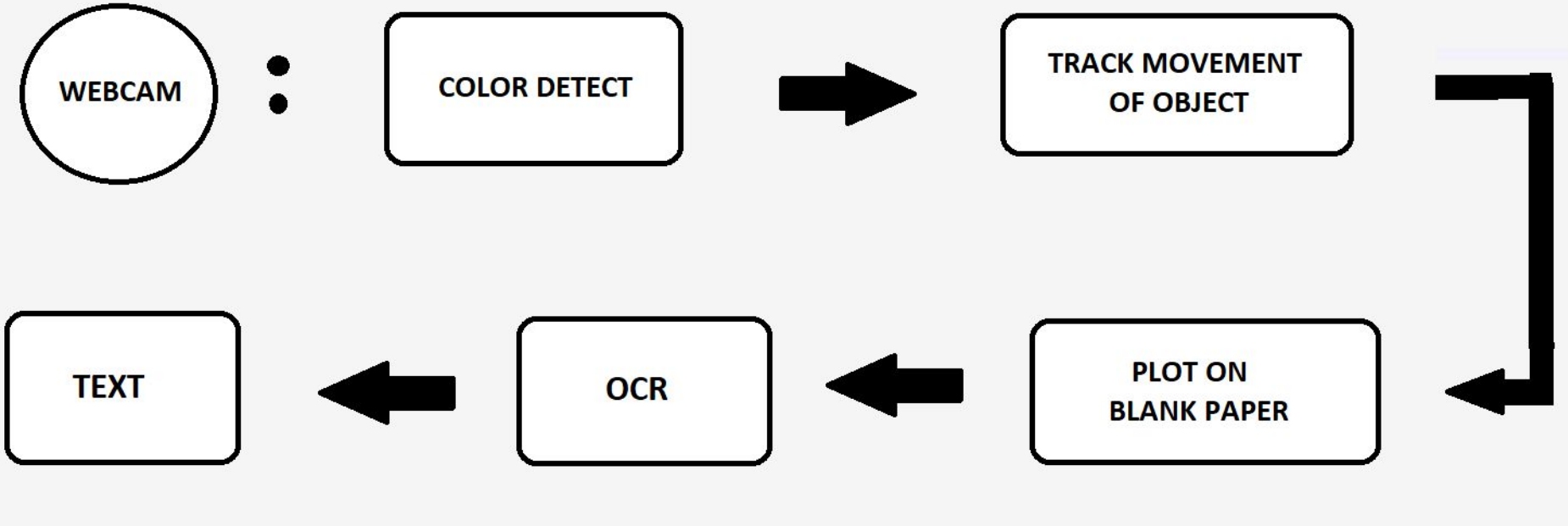
MR. MOHD. SHOAIB

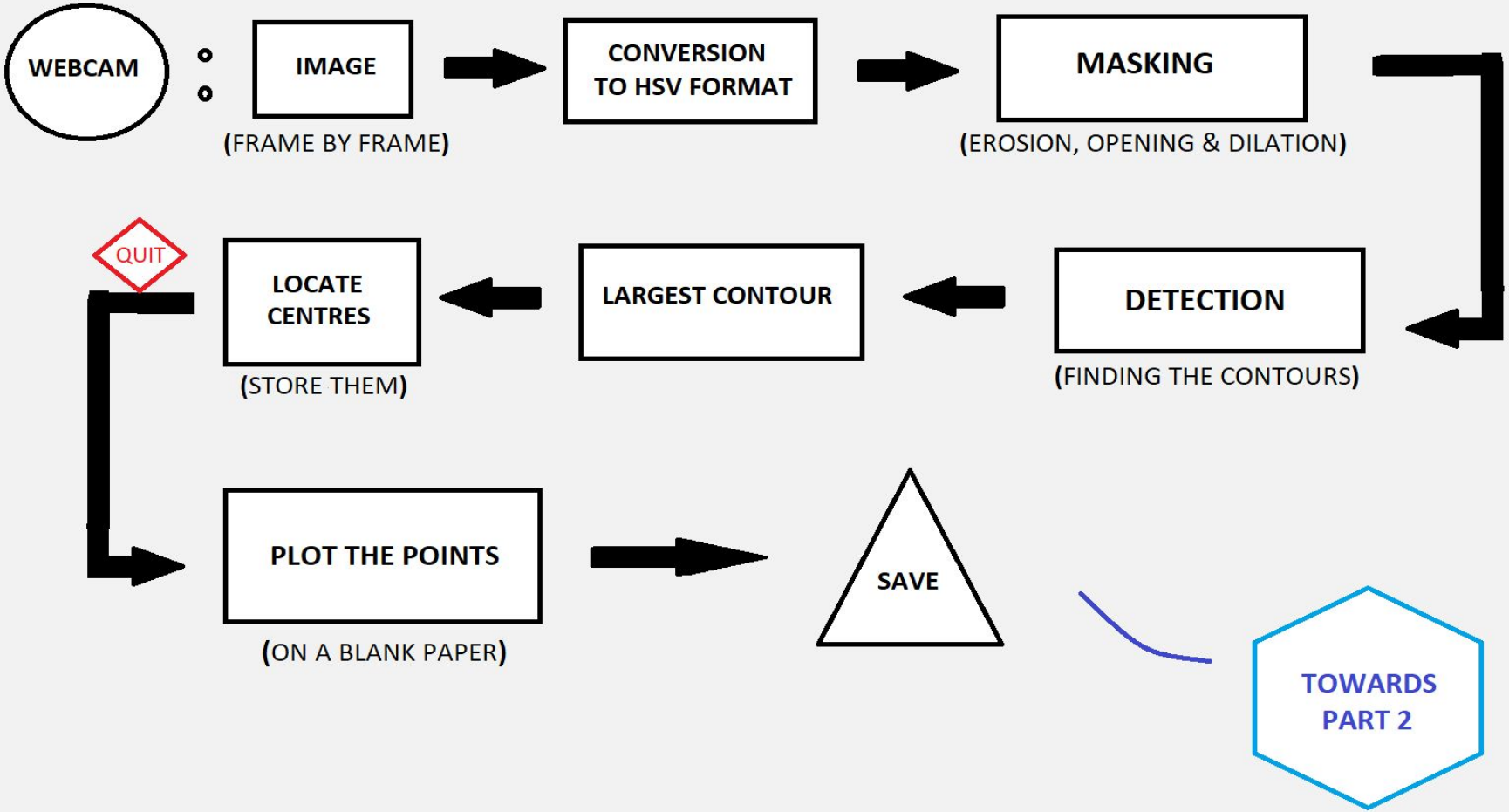
ABOUT THE PROJECT

Our project focuses on detecting a specified colour & tracking the movement of this coloured object to write on a blank screen. The text to be drawn is controlled by hand gestures. The written text is then converted to machine-encoded text.

OVERVIEW

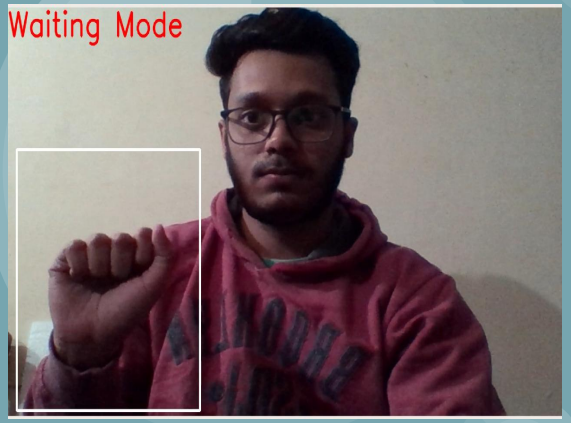

WEBCAM
COLOR DETECT
TRACK MOVEMENT OF OBJECT
PLOT ON BLANK PAPER
OCR
TEXT

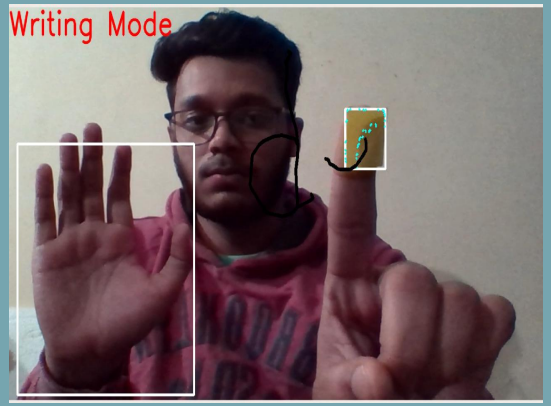
FLOW DIAGRAM OF PART 1

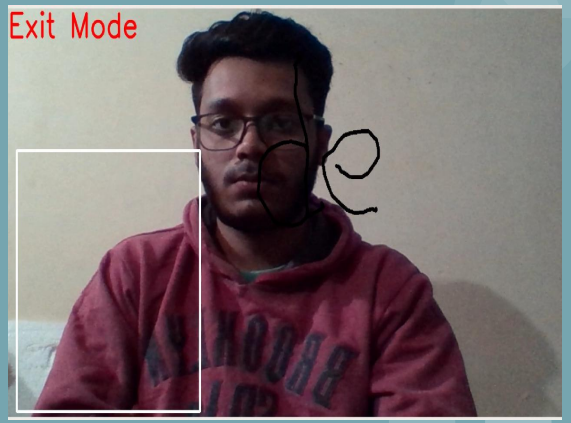


GESTURE RECOGNITION

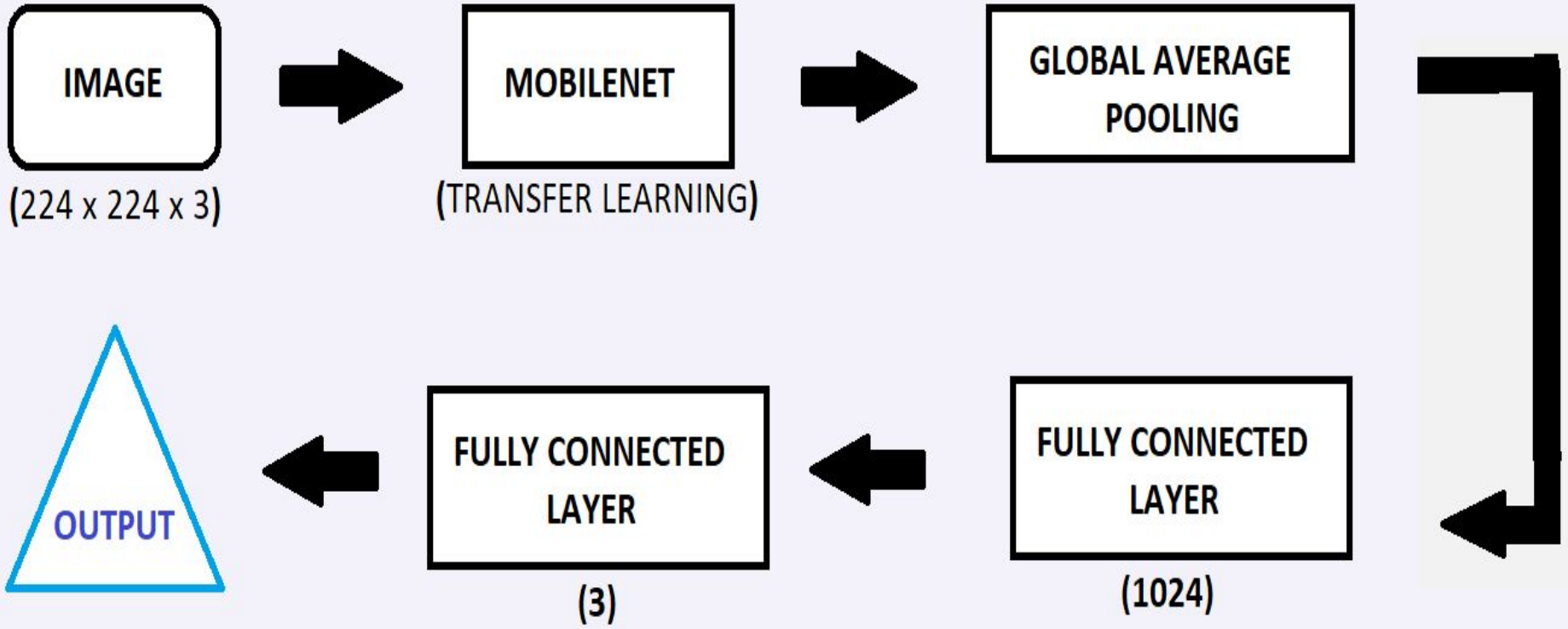
1- 

2- 

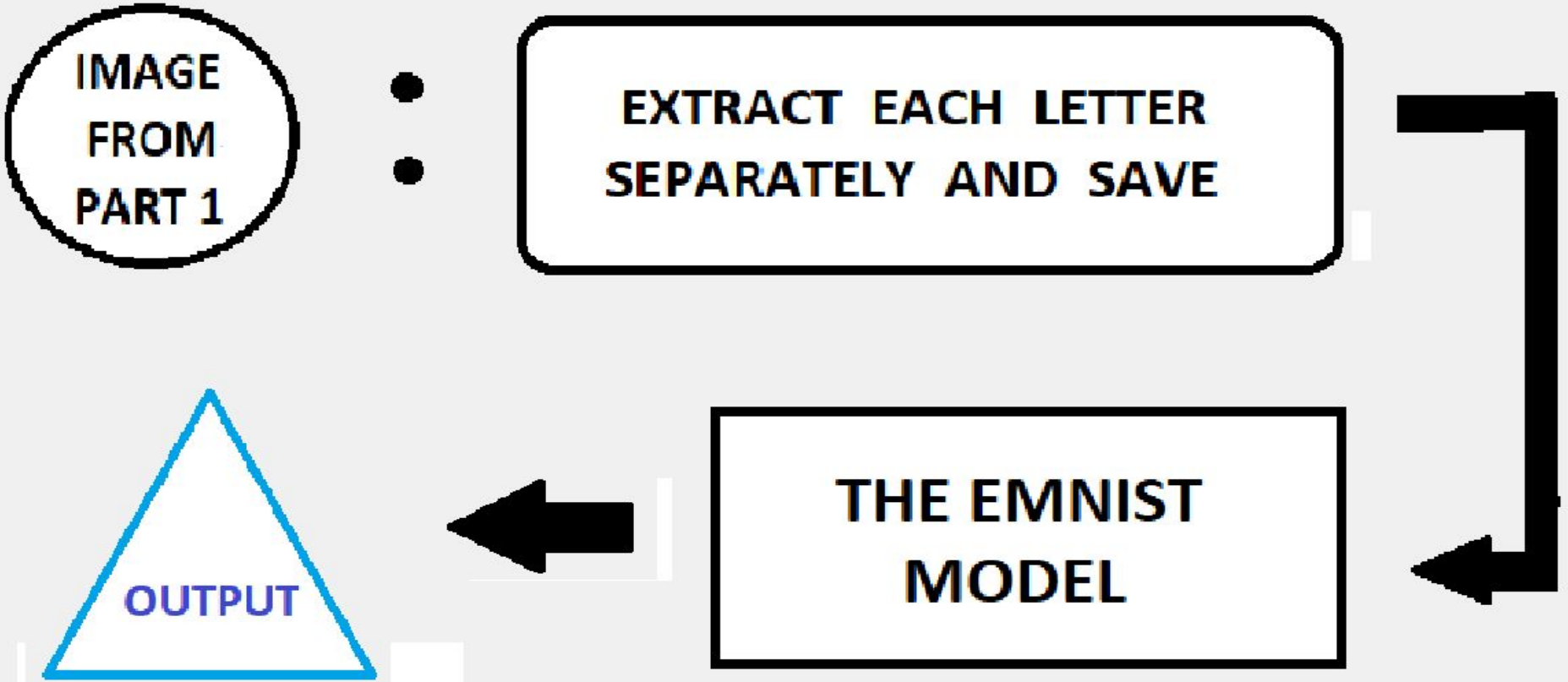
3- 

4- 

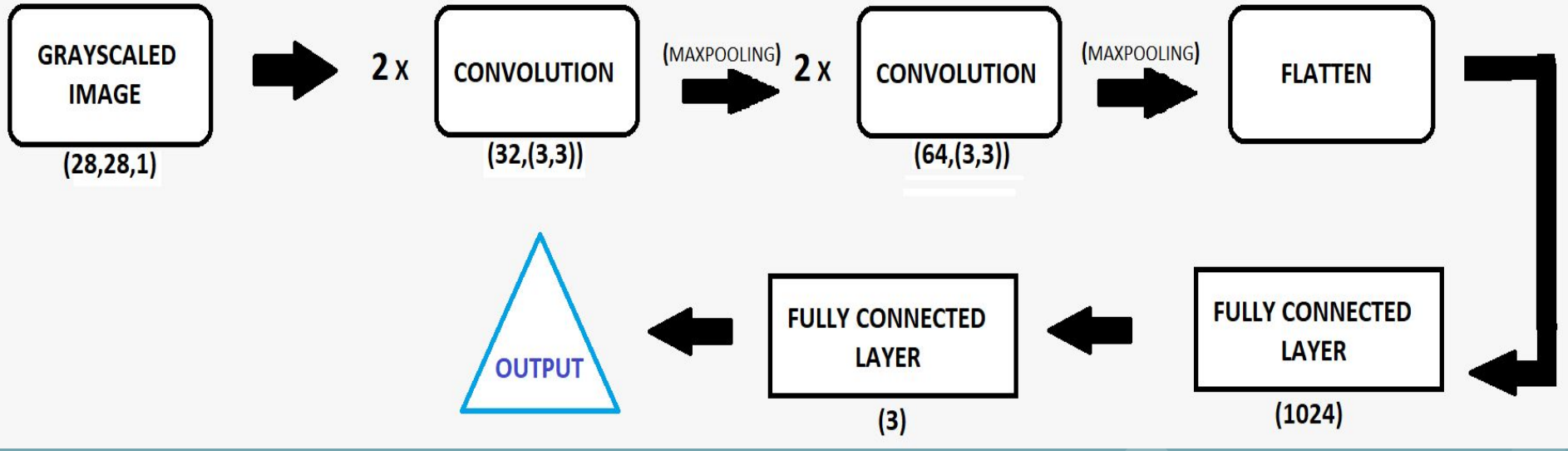
GESTURE RECOGNITION MODEL



FLOW DIAGRAM OF PART 2



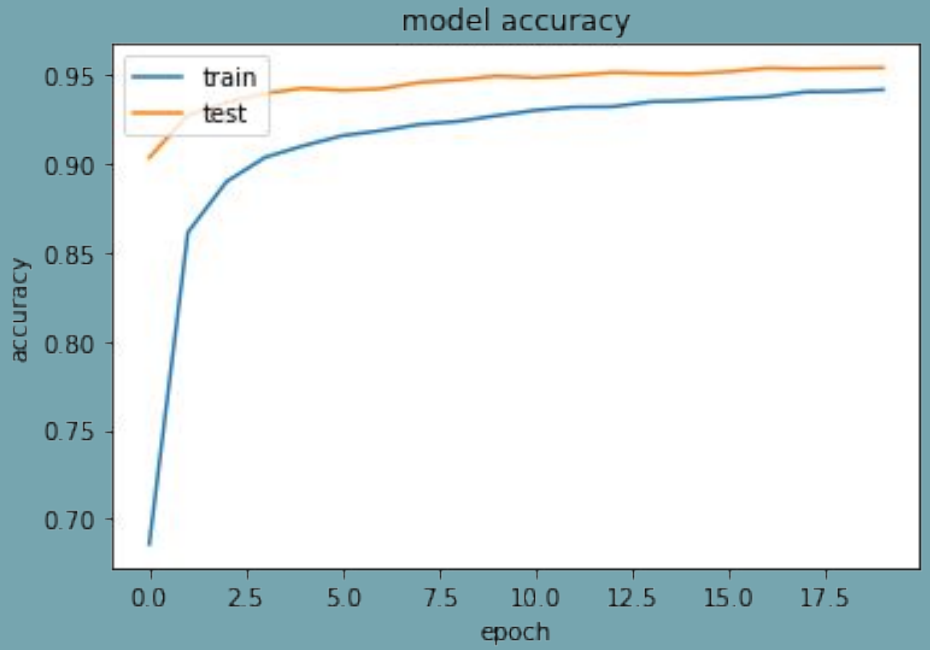
OCR MODEL ARCHITECTURE

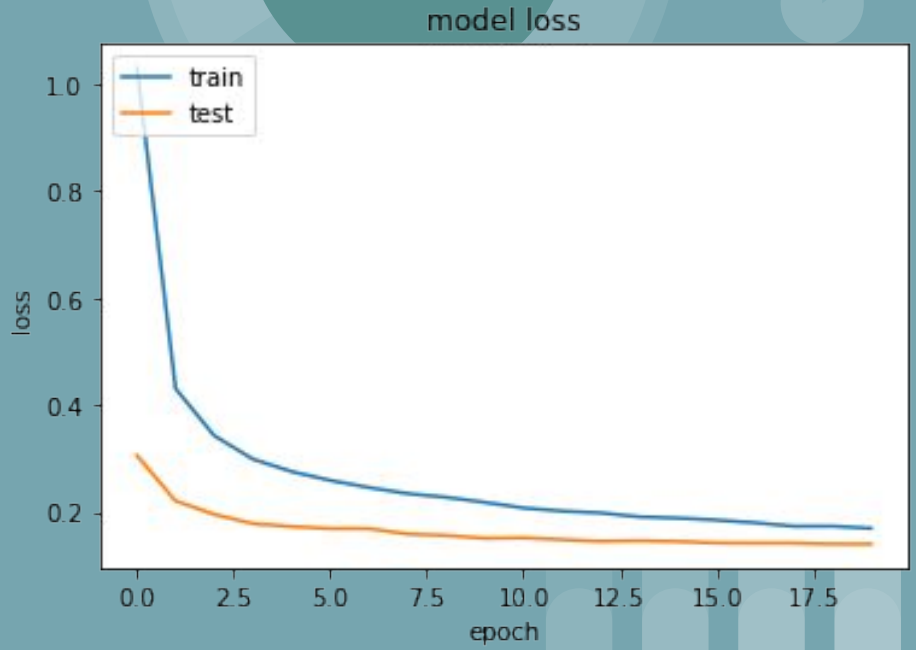


DATASET USED : EMNIST (CHARACTER)
DATA SIZE : 124800 IMAGES
TEST SET RATIO : 1/10

ANALYSIS

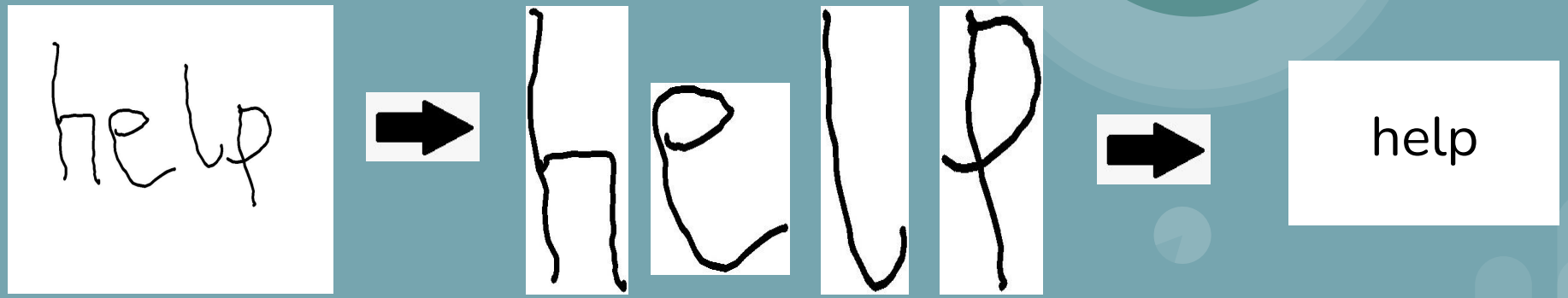
→ After training the model on 112320 samples for 20 epochs with a batch size of 256, we obtained an accuracy of 95.42%.





EXAMPLE

An extraction of image into letters is as shown below :



FUTURE WORK

→ Train an OCR model to work on cursive writing.

→ Allow the user to use an object of his own choice of any solid colour.

→ To link it with other system applications.

→ Improve precision of the project.

THANK YOU