**NEURAL NETWORK: -** Here the neural network used is **CNN** as it is best fit for computer vision-oriented program.

A neural network is a series of algorithms that endeavors to recognize underlying relationships in a set of data through a process that mimics the way the human brain operates.

**Convolutional neural network** (CNN) is used for image classification and recognition because of its high accuracy. The CNN follows a hierarchical model which works on building a network, like a funnel, and finally gives out a fully connected layer where all the neurons are connected to each other and the output is processed.

**OPTIMIZER: - Adam** is the optimizer used here because it is bit noise handling optimizer.

Optimizers are algorithms or methods used to change the attributes of the neural network such as weights and learning rate to reduce the losses.

**Adam** is used because it requires less memory and is more efficient. This method is efficient when working with large problem involving a lot of data or parameters.

**MATRICES: -** Here the accuracy metrics is used.

accuracy matrices is used because it is the most intuitive performance measure, and it is simply a ratio of correctly predicted observation to the total observations.

**LOSS FUNCTION: -**Categorical cross entropy because of the multiclass classification tasks.

Categorical cross entropy is a loss function that is used in multi-class classification tasks. Because These are tasks where an example can only belong to one out of many possible categories, and the model must decide which one.

**CLEANING**: -Here the cleaning is done by normalizing the data.

Normalization is done here as it is the process of reorganizing data in a database so that There is no redundancy of data, all data is stored in only one place.

**OPENCV FUNCTIONS**:

The OpenCV functions user are video capture, cvtcolour, rectangle, resize, puttext, waitkey, imshow.

**DATA HAS BEEN TAKEN FROM WEB CAM.**