**Project Main Functionality :**

Optical character recognition or optical character reader (OCR) is the automated conversion of images of typed, handwritten text in to machine-encoded\_text.

* The application main functionality accepts an image to extract the text in it.
* The application uses a dataset (emnist) to train a neural network model to classify images with

Certain label.. then taking this label and get the ascii value corresponds to it.

* The application uses a dataset to test the prediction accuracy of the NN model
* The application cuts the user specified image into set of smaller images contain letters

In order to insert them in a neural networks prediction model to extract the label corresponding to image

* The application then takes the label and extract the ascii value corresponding to letter label extracted from the image.

**Project Used Algorithms :**

* The OCR main algorithm is using classification artificial neural network model which is-in our case- a decision tree classifier model.
* A decision tree is a flowchart-like tree structure where an internal node represents feature(or attribute), the branch represents a decision rule, and each leaf node represents the outcome. The topmost node in a decision tree is known as the root node. It learns to partition on the basis of the attribute value. It partitions the tree in recursively manner call recursive partitioning. This flowchart-like structure helps you in decision making.

**How does the Decision Tree algorithm work?**

* The basic idea behind any decision tree algorithm is as follows:
* Select the best attribute using Attribute Selection Measures(ASM) to split the records.
* Make that attribute a decision node and breaks the dataset into smaller subsets.
* Starts tree building by repeating this process recursively for each child until one of the condition will match:
* All the tuples belong to the same attribute value.
* There are no more remaining attributes.
* There are no more instances.

