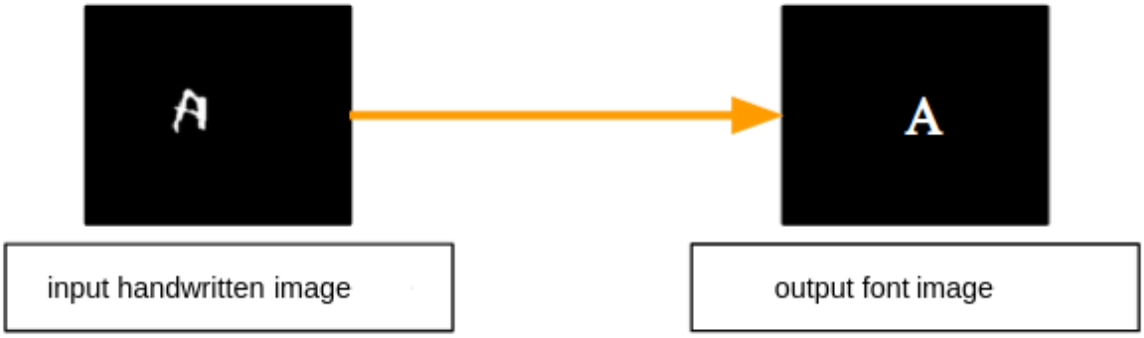
Build a AI pipeline that can convert handwritten letters to font letters using deep learning model `Total marks 500`

Input to AI model is a handwritten letter (capital or small) image and output of the model is font letter (for simplicity always capital) image



`The input image may contain handwritten of any single letter[A-Z, a-z]`

1. Environment setup for your project. `Marks 25`
2. Prepare `EMNIST` data for your input. `Marks 25`
3. Create Synthetic target data using PIL (Use only one font named: Times new roman) `Marks 50`
4. Seperate data into train, test and validation `Marks 25`
5. Design an AI model which can predict font image from handwritten input image `Marks 100`
6. Train the AI model, Visualize traning metrics in tensorboard and save tensorboard log to disk `Marks 100`
7. Test the model on test, validation and train set and calculate average performance metrics and plot it in the notebook `Marks 25`
8. Create an inferance script [Single image prediction] where if we give input of a handwritten image it can predict equivalance font image `Marks 100`
9. Visualize the 2nd last layer activation `Marks 50`

You can load the dataset using `extra_keras_datasets` python packages as

Install this package as

```
pip install extra_keras_datasets
```

Then load the dataset as

```
from extra_keras_datasets import emnist
(trainx, trainy), (testx, testy) = emnist.load_data(type='letters')
```

N.B. Official Website of EMNIST dataset