Project Objectives

● To Know fundamental concepts and techniques of the Artificial Neural Network and Convolution Neural Networks

● Gain a broad understanding of image data.

● Work with Sequential type of modelling

● Work with Keras capabilities

● Work with image processing techniques

● know how to build a web application using the Flask framework

Project Flow:

● The user interacts with the UI (User Interface) to upload the image as input

● The uploaded image is analysed by the model which is integrated

● Once the model analyses the uploaded image, the prediction is showcased on the UI To accomplish this, we have to complete all the activities and tasks listed below

● **Understanding the data**.

○ Importing the required libraries ○ Loading the data

○ Analysing the data ○ Reshaping the data.

○ Applying One Hot Encoding

● **Model Building**

○ Creating the model and adding the input, hidden and output layers to it ○ Compiling the model

○ Training the model ○ Predicting the result ○ Testing the model by taking image inputs ○ Saving the model

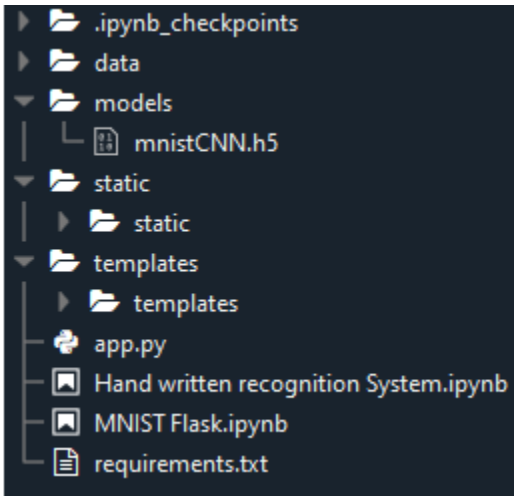
● **Application Building**

Create an HTML file

○ Build Python Code

Project Structure

Create a Project folder which contains files as shown below



We are building a Flask Application which needs HTML pages stored in the templates folder and a python script app.py for server-side scripting.

- The model is built in the notebook Hand written recognition system.ipynb
- We need the model which is saved and the saved model in this content is mnistCNN.h5
- The static folder will contain js and css files.
- The templates mainly used here are main.html and index6.html for showcasing the UI