You need to implement Logistic Regression from scratch in this question

1. You are provided with the dataset of sign language digits. Implement logistic regression from scratch to classify the images provided in the dataset. Load the dataset and perform splitting into training and test sets with 70:30 ratio randomly using test train split.
2. Plot a diagram for the sigmoid function. This is used for binary classication. How do you modify it for multilabel dataset classification problems? State and Explain the methods used.
3. Use both one vs all and one vs one method for the above problem statement purpose.
4. Also get results using Log Reg from scikit learn.
5. Report accuracy score, Confusion matrix and any other metrics you feel useful and Compare the results - from all the three.

[BONUS]

6. Display few pictures with their predicted and original labels
7. Do the results differ? State the reasons why it is so.

dataset link : https://iiitaphyd-my.sharepoint.com/:f:/g/personal/apurva_jadhav_students_iiit_ac_in/Eictt5_qmoxNqezgQQiMWeIBph4sxlfA6jWAJNPnV2SF9Q?e=mQmYN0

```
x_l = np.load("X.npy") # image
y_l = np.load("Y.npy") # label
```