Two-layer Perceptron (2LP)

PROBLEM

In this project, you need to implement a two-layer fully connected Perceptron (2LP), a well known neural network based Machine Learning model from **scratch**. You need to implement **at least 2 different activation functions** for your model. You need to use the **MNIST dataset** and note down the results. At no point should your model throw any error while testing on the MNIST dataset.

You are expected to first store the MNIST dataset in a **database** of your choice. You then need to import the dataset in your code and run your model on it. Once you have the results of your testing data, you need to store it in a database (need not be the same).

It is **mandatory** to design the code using OOP concepts. You need to clearly mark the various sections in the code using comments where you have implemented these concepts - (Inheritance, Polymorphism, Encapsulation, etc). Please note that you need to implement all the OOPS concepts whatever has been done in class which will be considered while evaluating your submission.

GENERAL INSTRUCTIONS:

1. You can assume your own specifications for the model.
2. Your model should give a decent output and at no point should the code throw an error.
3. Your submission will be evaluated based on the OOPS concepts used and database connectivity.
4. You can use any database for the project.
5. You can refer to the provided links for the project.

SUBMISSION

Each group needs to make a **single submission** in the following format rollnumber1_rollnumber2.zip. The zip file should contain your **project code files** and a **video recording** which should showcase how your code runs on the given Dataset and also highlight and explain various sections in your code where you have implemented OOP concepts.

Links for Reference -

1. https://kindsonthegenius.com/blog/basics-of-multilayer-perceptron-a-simple-explanation-of-multilayer-perceptron/
2. https://medium.com/@AI_with_Kain/understanding-of-multilayer-perceptron-mlp-8f179c4a135f