Q) Implement a multi-layered Artificial Neural Network (ANN) model using Keras for the MNIST dataset and evaluate its performance using various evaluation metrics.

Subtasks

a) Load the MNIST dataset using Keras.
b) Do necessary preprocessing
c) Design an ANN model architecture with multiple hidden layers using Keras.
d) Experiment with different numbers of hidden layers and neurons per layer to find an optimal architecture.
e) Compile the model using an appropriate optimizer and loss function.
f) Experiment with different batch sizes and epochs to optimize model performance.
g) Compute and analyze the following evaluation metrics:
    Accuracy, Precision, Recall and F1-score
h) Evaluate the trained model using the testing data.Find test accuracy and Test loss