Report: CIFAR-10 Neural Network Classifier

Implementation Approach:
Loaded and preprocessed CIFAR-10 data, selecting three classes (Airplane, Automobile, Bird).
Built a simple fully connected neural network with one hidden layer (128 neurons) using ReLU and softmax output.
Trained the model with mini-batch gradient descent and cross-entropy loss, updating weights via backpropagation.

Results and Performance Analysis:
Here is the output:
Epoch 100/100 | Loss: 0.4503 | Acc: 0.8279 | LR: 0.00006

Evaluating model...

===== Evaluation Results =====
Test Accuracy: 0.8047
Airplane: Precision=0.7848, Recall=0.7730, F1=0.7788
Automobile: Precision=0.8515, Recall=0.8430, F1=0.8472
Bird: Precision=0.7785, Recall=0.7980, F1=0.7881

Found that Automobile class performed best; Bird class was hardest to classify.

Challenges Faced and Solutions:
Data imbalance for selected classes handled by filtering and one-hot encoding properly.
For further view analysis.txt