Assignment 2 Code Reproduction Guide

This guide provides instructions on how to run the code for Assignment 2, covering MLP, CNN, and RNN.

Environment Setup

Ensure you have the following dependencies installed:

- Python 3.x
- PyTorch
- Torchvision
- NumPy
- Matplotlib
- Scikit-learn
- Jupyter Notebook

Part 1: MLP on CIFAR-10

PyTorch Implementation

1. Navigate to the `Part 1` directory:

   ```
   cd "Part 1"
   ```

2. run the training script:

   ```
   python pytorch_train_mlp.py
   ```

3. Open and run the `CIFAR10.ipynb` notebook to train and test the PyTorch-based MLP model on CIFAR-10:

   ```
   jupyter notebook CIFAR10.ipynb
   ```

Part 2: CNN on CIFAR-10

1. Navigate to the `Part 2` directory:

   ```
   cd "Part 2"
   ```

2. Run the training script:

   ```
   python cnn_train.py
   ```

Part 3: RNN on Palindrome

1. Navigate to the `Part 3` directory:

   ```
   cd "Part 3"
   ```

2. Open and run the `task2.ipynb` notebook (or `task3.ipynb` if renamed) to see the RNN implementation and training for the Palindrome task.

   ```
   jupyter notebook task2.ipynb
   ```

3. Alternatively, if there is a standalone training script (e.g., `train.py`), you can run it directly:

   ```
   python train.py
   ```

Notes

- Data will be automatically downloaded to the `12410106_assignment2/data` directory if not present.
- Ensure you are in the correct directory before running scripts to avoid path issues.