Task 1

Usage

- Inside “part1” folder, with “imagenet_first2500.zip” in, run “bash extract.sh”

Task 2

Usage

- Inside “part2” folder, with “flowers102stuff.zip” in it, run “bash extract.sh”
- Run “python main.py”
- Run “python visual.py”

- train a deep neural network in three different modes:

  A once without loading weights and training all layers.

  B once with loading model weights before training and training all layers,

  C once with loading model weights before training and training only the last two trainable layers (note: for quite some problems, the approach B is better than C)

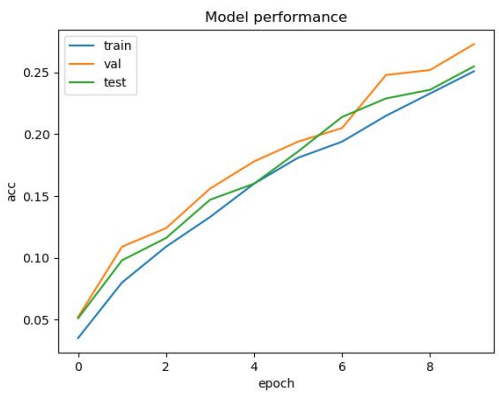
- for the homework report at least the following:

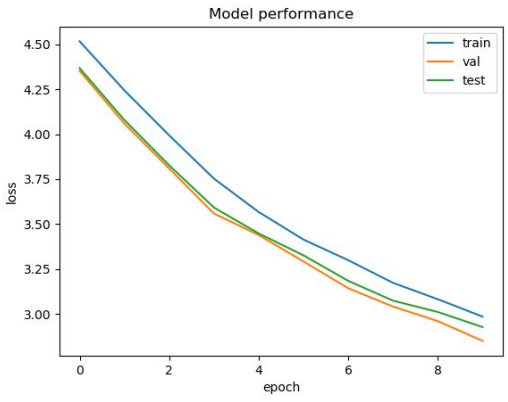
  – for each of the 3 settings curves of training loss, validation loss and validation accuracy as a function of epochs (for the best setting you found)

  – for each of the 3 settings the test accuracy of the best model

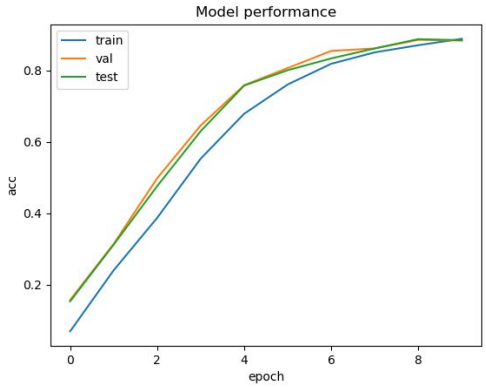
  – observe differences between the validation and the test accuracy of these models

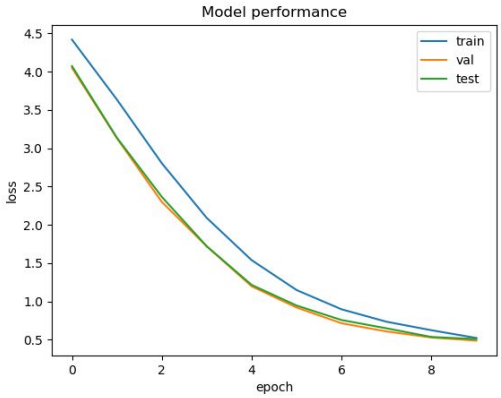
Setting A, final test result: `{'loss': 2.901, 'acc': 0.251}`



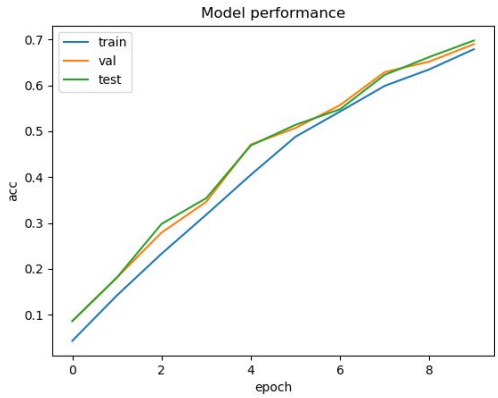


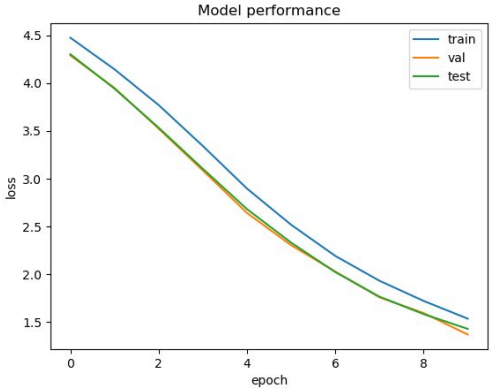
Setting B, final test result: `{'loss': 0.522, 'acc': 0.881}`





Setting C, final test result: *{'loss': 1.418, 'acc': 0.679}*





For generally, in order of improving results, it is A < C < B. For setting A, the validation accuracy is significantly better than test accuracy, but for C and B, the train, validation and test accuracy are very similar.