IMPLEMENTATION EXPECTATION

1. Reproduce results of MPAD and any one of its variants on one topic modelling dataset and one binary sentiment analysis dataset and one multi-class sentiment analysis dataset. (total 2 models * 3 datasets) = 6 results to be reproduced. [You are free to pick these 3 datasets from the given 10 and also one variant of MPAD from the given 3]
2. Pick any 2 of the ablation studies and reproduce results for each of the ablation studies on any 1 of the datasets.
3. In all above reports, in addition to accuracy, report F1 scores, precision and recall.
4. Plot loss, accuracy and f1 during training

The three datasets selected are:

1. Binary Sentiment Analysis: Polarity
   rt-polarity.txt:
2. Multi-class Sentiment Analysis: SST1
   tab_sst1_train_n_test.txt: Contains both test and train data
   (Both training and testing are kept here as per our requirement for graph representation to be done at same time)
   tab_sst1_test.txt: Contains test data
3. Topic Modelling Dataset: TREC
   tab_trec_train_n_test: Contains both test and train data
   (Both training and testing are kept here as per our requirement for graph representation to be done at same time)
   tab_trec_test: Contains test data

Drive link to datasets:
https://drive.google.com/drive/folders/1x8ZKWl3JQl687d5Zg3Lf4Kfi-IRgkaPA?usp=sharing

FILE STRUCTURE

1. MPAD(mpad folder contains the details regarding this).
   - main_cross_val.py **=>** Main function using k-fold cross validation for final evaluation. This is used for Polarity dataset only.
   - main_test.py **=>** Main function using testing datasets for final evaluation.
   - utils.py => Contains all utility functions. Graphical representation functions are also present here.

- mlp.py **=>** Pytorch model for Multi-layer perceptron used in AGGREGATE phase.
- layers.py => Pytorch model for attention mechanism and Message passing mechanism (to be used in models.py)
- models.py => Main Pytorch model used for training & testing.

2. Hierarchical MPAD(hierarchial_mpad folder contains the details regarding this).

- hmain_cross_val.py **=>** Main function using k-fold cross validation for final evaluation. This is used for Polarity dataset only.
- hmain_test.py **=>** Main function using testing datasets for final evaluation.
- hutils.py => Contains all utility functions. Graphical representation functions are also present here. This is to be used for hmain_cross_val.py. Utility functions for main cross validation and test differ slightly.
- hutils_test.py => Contains all utility functions. Graphical representation functions are also present here. This is to be used for hmain_test.py.
- mlp.py **=>** Pytorch model for Multi-layer perceptron used in AGGREGATE phase.
- layers.py => Pytorch model for attention mechanism and Message passing mechanism (to be used in models.py)
- models.py => Main Pytorch model used for training & testing.

EXECUTION

Execution Commands can be found from here (also in colab file provided, Execution.ipynb)

https://colab.research.google.com/drive/1WxridjRsmlrwULAXRF7HXBSHd6l4EjKK?usp=sharing