Entering function \_\_main\_\_

Embedding tokens size=400001

File name 5way\_tur\_ger\_rus\_fra\_usa100K\_25-150. Total data size is 500000

Our 5 labels to index dictionary ={u'turkey': 3, u'germany': 1, u'russia': 2, u'us': 4, u'france': 0}

Our 5 index to labels dictionary ={0: u'france', 1: u'germany', 2: u'russia', 3: u'turkey', 4: u'us'}

x\_train: 405000, x\_dev: 45000, x\_test: 50000

y\_train: 405000, y\_dev: 45000, y\_test: 50000

input\_data\_x\_batch shape: (200, 150)

input\_labels\_batch shape: (200, 5)

data(after embedding) shape: (200, 150, 300)

gru\_forward\_cell units: 50

gru\_forward\_cell2 units: 50

multi\_forward\_cell: 2 cells

gru\_backward\_cell units: 50

gru\_backward\_cell2 units: 50

multi\_backward\_cell: 2 cells

---vars name and shapes---

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/kernel:0', TensorShape([Dimension(350), Dimension(300)]), 105000)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/bias:0', TensorShape([Dimension(300)]), 300)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(350), Dimension(100)]), 35000)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/gates/bias:0', TensorShape([Dimension(100)]), 100)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(350), Dimension(50)]), 17500)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(100), Dimension(100)]), 10000)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/gates/bias:0', TensorShape([Dimension(100)]), 100)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(100), Dimension(50)]), 5000)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/attention/attn\_w:0', TensorShape([Dimension(1), Dimension(1), Dimension(50), Dimension(50)]), 2500)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/attention/attn\_v:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/attention/kernel:0', TensorShape([Dimension(100), Dimension(50)]), 5000)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/attention/bias:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/attn\_output\_projection/kernel:0', TensorShape([Dimension(100), Dimension(50)]), 5000)

(u'bidirectional\_rnn/fw/attention\_cell\_wrapper/attn\_output\_projection/bias:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/kernel:0', TensorShape([Dimension(350), Dimension(300)]), 105000)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/bias:0', TensorShape([Dimension(300)]), 300)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(350), Dimension(100)]), 35000)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/gates/bias:0', TensorShape([Dimension(100)]), 100)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(350), Dimension(50)]), 17500)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(50)]), 50)

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(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/gates/bias:0', TensorShape([Dimension(100)]), 100)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(100), Dimension(50)]), 5000)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/attention/attn\_w:0', TensorShape([Dimension(1), Dimension(1), Dimension(50), Dimension(50)]), 2500)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/attention/attn\_v:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/attention/kernel:0', TensorShape([Dimension(100), Dimension(50)]), 5000)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/attention/bias:0', TensorShape([Dimension(50)]), 50)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/attn\_output\_projection/kernel:0', TensorShape([Dimension(100), Dimension(50)]), 5000)

(u'bidirectional\_rnn/bw/attention\_cell\_wrapper/attn\_output\_projection/bias:0', TensorShape([Dimension(50)]), 50)

(u'Variable:0', TensorShape([Dimension(100), Dimension(5)]), 500)

(u'bias:0', TensorShape([Dimension(5)]), 5)

total PARAM 372,005

---done vars---

batches\_num\_train: 2025

batches\_num\_dev: 225

Epoch: 1/10 ---- best so far on epoch 0: acc=0.0000%

DEV accuracy on epoch 1/10 in train step 1012 = 50.6489%

Dev loss average for this epoch is 30.0939 and average acc is 50.6489

Class turkey : (6435/9153) -> accuracy: 70.3048%

Class germany: (4239/8888) -> accuracy: 47.6935%

Class russia : (4746/8943) -> accuracy: 53.0694%

Class us : (4052/9110) -> accuracy: 44.4786%

Class france : (3320/8906) -> accuracy: 37.2782%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 1

INFO:root: Best accuracy 50.6489% at epoch 1/10 (22792/45000)

DEV accuracy on epoch 1/10 in train step 2022 = 52.0311%

Dev loss average for this epoch is 4.0459 and average acc is 52.0311

Class turkey : (6013/9153) -> accuracy: 65.6943%

Class germany: (5615/8888) -> accuracy: 63.1751%

Class russia : (5057/8943) -> accuracy: 56.5470%

Class us : (2898/9110) -> accuracy: 31.8112%

Class france : (3831/8906) -> accuracy: 43.0159%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 1

INFO:root: Best accuracy 52.0311% at epoch 1/10 (23414/45000)

Epoch run time: 00:58:48

Train average loss for this epoch is 51.5651 and average acc is 48.1044

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Epoch: 2/10 ---- best so far on epoch 1: acc=52.0311%

DEV accuracy on epoch 2/10 in train step 1012 = 53.0911%

Dev loss average for this epoch is 1.2837 and average acc is 53.0911

Class turkey : (5989/9153) -> accuracy: 65.4321%

Class germany: (4985/8888) -> accuracy: 56.0869%

Class russia : (4737/8943) -> accuracy: 52.9688%

Class us : (4683/9110) -> accuracy: 51.4050%

Class france : (3497/8906) -> accuracy: 39.2657%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 2

INFO:root: Best accuracy 53.0911% at epoch 2/10 (23891/45000)

DEV accuracy on epoch 2/10 in train step 2022 = 52.8933%

Dev loss average for this epoch is 1.1762 and average acc is 52.8933

Class turkey : (5960/9153) -> accuracy: 65.1153%

Class germany: (5042/8888) -> accuracy: 56.7282%

Class russia : (5227/8943) -> accuracy: 58.4479%

Class us : (2797/9110) -> accuracy: 30.7025%

Class france : (4776/8906) -> accuracy: 53.6268%

Epoch run time: 00:58:32

Train average loss for this epoch is 1.6388 and average acc is 53.6528

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Epoch: 3/10 ---- best so far on epoch 2: acc=53.0911%

DEV accuracy on epoch 3/10 in train step 1012 = 53.7489%

Dev loss average for this epoch is 1.1614 and average acc is 53.7489

Class turkey : (6030/9153) -> accuracy: 65.8800%

Class germany: (4903/8888) -> accuracy: 55.1643%

Class russia : (4674/8943) -> accuracy: 52.2643%

Class us : (5142/9110) -> accuracy: 56.4435%

Class france : (3438/8906) -> accuracy: 38.6032%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 3

INFO:root: Best accuracy 53.7489% at epoch 3/10 (24187/45000)

DEV accuracy on epoch 3/10 in train step 2022 = 53.5689%

Dev loss average for this epoch is 1.1639 and average acc is 53.5689

Class turkey : (5830/9153) -> accuracy: 63.6950%

Class germany: (5008/8888) -> accuracy: 56.3456%

Class russia : (5298/8943) -> accuracy: 59.2419%

Class us : (3103/9110) -> accuracy: 34.0615%

Class france : (4867/8906) -> accuracy: 54.6486%

Epoch run time: 00:58:32

Train average loss for this epoch is 1.1396 and average acc is 54.9200

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Epoch: 4/10 ---- best so far on epoch 3: acc=53.7489%

DEV accuracy on epoch 4/10 in train step 1012 = 54.2778%

Dev loss average for this epoch is 1.1508 and average acc is 54.2778

Class turkey : (5977/9153) -> accuracy: 65.3010%

Class germany: (4780/8888) -> accuracy: 53.7804%

Class russia : (4966/8943) -> accuracy: 55.5295%

Class us : (5464/9110) -> accuracy: 59.9780%

Class france : (3238/8906) -> accuracy: 36.3575%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 4

INFO:root: Best accuracy 54.2778% at epoch 4/10 (24425/45000)

DEV accuracy on epoch 4/10 in train step 2022 = 53.6689%

Dev loss average for this epoch is 1.1592 and average acc is 53.6689

Class turkey : (5753/9153) -> accuracy: 62.8537%

Class germany: (5209/8888) -> accuracy: 58.6071%

Class russia : (5325/8943) -> accuracy: 59.5438%

Class us : (3138/9110) -> accuracy: 34.4457%

Class france : (4726/8906) -> accuracy: 53.0653%

Epoch run time: 00:58:33

Train average loss for this epoch is 1.1195 and average acc is 55.8180

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Epoch: 5/10 ---- best so far on epoch 4: acc=54.2778%

DEV accuracy on epoch 5/10 in train step 1012 = 54.7778%

Dev loss average for this epoch is 1.1434 and average acc is 54.7778

Class turkey : (5940/9153) -> accuracy: 64.8968%

Class germany: (4700/8888) -> accuracy: 52.8803%

Class russia : (5247/8943) -> accuracy: 58.6716%

Class us : (5428/9110) -> accuracy: 59.5829%

Class france : (3335/8906) -> accuracy: 37.4467%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 5

INFO:root: Best accuracy 54.7778% at epoch 5/10 (24650/45000)

DEV accuracy on epoch 5/10 in train step 2022 = 54.0578%

Dev loss average for this epoch is 1.1519 and average acc is 54.0578

Class turkey : (5661/9153) -> accuracy: 61.8486%

Class germany: (5274/8888) -> accuracy: 59.3384%

Class russia : (5368/8943) -> accuracy: 60.0246%

Class us : (3385/9110) -> accuracy: 37.1570%

Class france : (4638/8906) -> accuracy: 52.0773%

Epoch run time: 00:58:33

Train average loss for this epoch is 1.1046 and average acc is 56.4998

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Epoch: 6/10 ---- best so far on epoch 5: acc=54.7778%

DEV accuracy on epoch 6/10 in train step 1012 = 54.8000%

Dev loss average for this epoch is 1.1436 and average acc is 54.8000

Class turkey : (5765/9153) -> accuracy: 62.9848%

Class germany: (4917/8888) -> accuracy: 55.3218%

Class russia : (5508/8943) -> accuracy: 61.5901%

Class us : (5225/9110) -> accuracy: 57.3546%

Class france : (3245/8906) -> accuracy: 36.4361%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 6

INFO:root: Best accuracy 54.8000% at epoch 6/10 (24660/45000)

DEV accuracy on epoch 6/10 in train step 2022 = 54.0244%

Dev loss average for this epoch is 1.1542 and average acc is 54.0244

Class turkey : (5601/9153) -> accuracy: 61.1931%

Class germany: (5328/8888) -> accuracy: 59.9460%

Class russia : (5382/8943) -> accuracy: 60.1811%

Class us : (3370/9110) -> accuracy: 36.9923%

Class france : (4630/8906) -> accuracy: 51.9874%

Epoch run time: 00:58:34

Train average loss for this epoch is 1.0926 and average acc is 57.0101

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Epoch: 7/10 ---- best so far on epoch 6: acc=54.8000%

DEV accuracy on epoch 7/10 in train step 1012 = 54.7622%

Dev loss average for this epoch is 1.1447 and average acc is 54.7622

Class turkey : (5698/9153) -> accuracy: 62.2528%

Class germany: (4945/8888) -> accuracy: 55.6368%

Class russia : (5672/8943) -> accuracy: 63.4239%

Class us : (4851/9110) -> accuracy: 53.2492%

Class france : (3477/8906) -> accuracy: 39.0411%

DEV accuracy on epoch 7/10 in train step 2022 = 54.5022%

Dev loss average for this epoch is 1.1488 and average acc is 54.5022

Class turkey : (5704/9153) -> accuracy: 62.3184%

Class germany: (5294/8888) -> accuracy: 59.5635%

Class russia : (5427/8943) -> accuracy: 60.6843%

Class us : (3789/9110) -> accuracy: 41.5917%

Class france : (4312/8906) -> accuracy: 48.4168%

Epoch run time: 00:58:30

Train average loss for this epoch is 1.0835 and average acc is 57.3832

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Epoch: 8/10 ---- best so far on epoch 6: acc=54.8000%

DEV accuracy on epoch 8/10 in train step 1012 = 54.7889%

Dev loss average for this epoch is 1.1459 and average acc is 54.7889

Class turkey : (5756/9153) -> accuracy: 62.8865%

Class germany: (4890/8888) -> accuracy: 55.0180%

Class russia : (5617/8943) -> accuracy: 62.8089%

Class us : (4861/9110) -> accuracy: 53.3589%

Class france : (3531/8906) -> accuracy: 39.6474%

DEV accuracy on epoch 9/10 in train step 1012 = 54.8133%

Dev loss average for this epoch is 1.1525 and average acc is 54.8133

Class turkey : (5745/9153) -> accuracy: 62.7663%

Class germany: (4614/8888) -> accuracy: 51.9127%

Class russia : (5792/8943) -> accuracy: 64.7657%

Class us : (4804/9110) -> accuracy: 52.7333%

Class france : (3711/8906) -> accuracy: 41.6685%

INFO:root: Saved model ../model\_temp/model.ckpt at epoch 9

INFO:root: Best accuracy 54.8133% at epoch 9/10 (24666/45000)

DEV accuracy on epoch 9/10 in train step 2022 = 54.7489%

Dev loss average for this epoch is 1.1445 and average acc is 54.7489

Class turkey : (5824/9153) -> accuracy: 63.6294%

Class germany: (5175/8888) -> accuracy: 58.2246%

Class russia : (5205/8943) -> accuracy: 58.2019%

Class us : (4090/9110) -> accuracy: 44.8957%

Class france : (4343/8906) -> accuracy: 48.7649%

Epoch run time: 00:58:33

Train average loss for this epoch is 1.0695 and average acc is 58.0220

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Epoch: 10/10 ---- best so far on epoch 9: acc=54.8133%

DEV accuracy on epoch 10/10 in train step 1012 = 54.6533%

Dev loss average for this epoch is 1.1530 and average acc is 54.6533

Class turkey : (5584/9153) -> accuracy: 61.0073%

Class germany: (4714/8888) -> accuracy: 53.0378%

Class russia : (5847/8943) -> accuracy: 65.3807%

Class us : (4728/9110) -> accuracy: 51.8990%

Class france : (3721/8906) -> accuracy: 41.7808%

DEV accuracy on epoch 10/10 in train step 2022 = 54.6244%

Dev loss average for this epoch is 1.1505 and average acc is 54.6244

Class turkey : (5778/9153) -> accuracy: 63.1268%

Class germany: (5260/8888) -> accuracy: 59.1809%

Class russia : (5380/8943) -> accuracy: 60.1588%

Class us : (4066/9110) -> accuracy: 44.6323%

Class france : (4097/8906) -> accuracy: 46.0027%

Epoch run time: 00:58:29

Train average loss for this epoch is 1.0640 and average acc is 58.2657

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\*\*\*Training is complete. Best accuracy 54.8133% at epoch 9/10

\*\*\*Testing...

INFO:tensorflow:Restoring parameters from ../model\_temp/model.ckpt

INFO:tensorflow:Restoring parameters from ../model\_temp/model.ckpt

Test loss average for this epoch is 1.1479 and average acc is 55.2540

Accuracy on test set - (27627/50000) -> accuracy: 55.2540%

Class turkey : (6236/10048) -> accuracy: 62.0621%

Class germany: (5260/10045) -> accuracy: 52.3644%

Class russia : (6608/10099) -> accuracy: 65.4322%

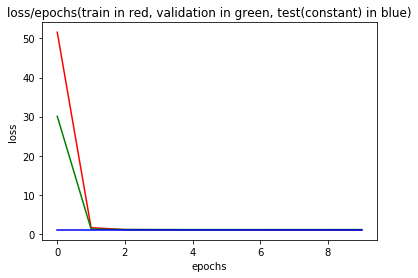
Class us : (5326/9837) -> accuracy: 54.1425%

Class france : (4197/9971) -> accuracy: 42.0921%

[51.56509615745073, 1.6387995778484108, 1.1395601742355912, 1.1194922182589402, 1.1046437487190153, 1.0925715769661797, 1.0834509177266816, 1.0759444234694964, 1.069479849603441, 1.0640213650832941]

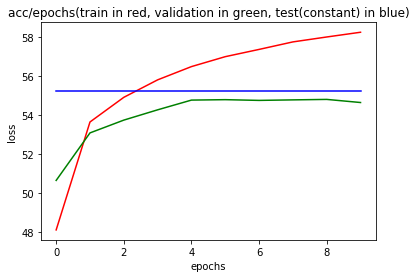
[30.093882844713, 1.2837387614780003, 1.1613934564590453, 1.1507787320348952, 1.143374429013994, 1.1436478651894464, 1.144746200243632, 1.1459075453546312, 1.1525394564204745, 1.1529804155561658]

[1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058, 1.1479113600254058]

[48.104444354404635, 53.652839398678445, 54.91999991293307, 55.818024613239146, 56.49975309990071, 57.010123442720484, 57.38320987460054, 57.76888884879925, 58.02197536568583, 58.26567910924369]

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[55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853, 55.2539999961853]

End summary ----------------------

data:

DATA\_FILE\_PATH is ../input/5way\_tur\_ger\_rus\_fra\_usa100K\_25-150.txt

MINIMUM\_ROW\_LENGTH is 25

MAXIMUM\_ROW\_LENGTH is 150

COUNT\_WORD is 20

lines\_per\_class is 100000

number of classes is 5

Total data size is 500000

embedding:

EMB\_FILE\_PATH ../input/glove.6B.300d.txt

EMB\_DIM 300

EMB\_WORDS\_COUNT 400001

run config:

EPOCHS 10

evaluating on dev data 2 times per epoch

KEEP\_PROB 0.5

BATCH\_SIZE 200

LSTM\_HIDDEN\_UNITS 50

LSTM\_CELL\_TYPE GRU

optimizer is adamOptimizer - learn rate: 0.001

model:

USE\_TMP\_FOLDER True

mdl\_path ../model\_temp/model.ckpt

results:

best training acc at epoch=9 is 54.8133

testing acc 5525.4000

Time(HH:MM:SS): 09:49:56

Leaving function \_\_main\_\_