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: (300, 150)

input\_labels\_batch shape: (300, 5)

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

gru\_forward\_cell units: 200

gru\_forward\_cell2 units: 200

multi\_forward\_cell: 2 cells

gru\_backward\_cell units: 200

gru\_backward\_cell2 units: 200

multi\_backward\_cell: 2 cells

---vars name and shapes---

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(500), Dimension(400)]), 200000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/bias:0', TensorShape([Dimension(400)]), 400)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(500), Dimension(200)]), 100000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(200)]), 200)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(400), Dimension(400)]), 160000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/bias:0', TensorShape([Dimension(400)]), 400)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(400), Dimension(200)]), 80000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(200)]), 200)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(500), Dimension(400)]), 200000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/bias:0', TensorShape([Dimension(400)]), 400)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(500), Dimension(200)]), 100000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(200)]), 200)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(400), Dimension(400)]), 160000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/bias:0', TensorShape([Dimension(400)]), 400)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(400), Dimension(200)]), 80000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(200)]), 200)

(u'Variable:0', TensorShape([Dimension(400), Dimension(5)]), 2000)

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

total PARAM 1,084,405

---done vars---

batches\_num\_train: 1350

batches\_num\_dev: 150

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

DEV accuracy on epoch 1/10 in train step 675 = 41.7422%

Dev loss average for this epoch is 222.2651 and average acc is 41.7422

Class turkey : (5039/8911) -> accuracy: 56.5481%

Class germany: (5918/9023) -> accuracy: 65.5879%

Class russia : (3137/8965) -> accuracy: 34.9916%

Class us : (534/9113) -> accuracy: 5.8598%

Class france : (4156/8988) -> accuracy: 46.2394%

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

INFO:root: Best accuracy 41.7422% at epoch 1/10 (18784/45000)

DEV accuracy on epoch 1/10 in train step 1347 = 51.5889%

Dev loss average for this epoch is 57.1856 and average acc is 51.5889

Class turkey : (5071/8911) -> accuracy: 56.9072%

Class germany: (5670/9023) -> accuracy: 62.8394%

Class russia : (5352/8965) -> accuracy: 59.6988%

Class us : (3303/9113) -> accuracy: 36.2449%

Class france : (3819/8988) -> accuracy: 42.4900%

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

INFO:root: Best accuracy 51.5889% at epoch 1/10 (23215/45000)

Epoch run time: 00:24:01

Train average loss for this epoch is 285.6594 and average acc is 35.1807

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Epoch: 2/10 ---- best so far on epoch 1: acc=51.5889%

DEV accuracy on epoch 2/10 in train step 675 = 53.6622%

Dev loss average for this epoch is 12.0770 and average acc is 53.6622

Class turkey : (6042/8911) -> accuracy: 67.8038%

Class germany: (4359/9023) -> accuracy: 48.3099%

Class russia : (5540/8965) -> accuracy: 61.7959%

Class us : (4303/9113) -> accuracy: 47.2183%

Class france : (3904/8988) -> accuracy: 43.4357%

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

INFO:root: Best accuracy 53.6622% at epoch 2/10 (24148/45000)

DEV accuracy on epoch 2/10 in train step 1347 = 54.2733%

Dev loss average for this epoch is 2.6025 and average acc is 54.2733

Class turkey : (5548/8911) -> accuracy: 62.2601%

Class germany: (4748/9023) -> accuracy: 52.6211%

Class russia : (5195/8965) -> accuracy: 57.9476%

Class us : (3969/9113) -> accuracy: 43.5532%

Class france : (4963/8988) -> accuracy: 55.2181%

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

INFO:root: Best accuracy 54.2733% at epoch 2/10 (24423/45000)

Epoch run time: 00:23:50

Train average loss for this epoch is 17.7512 and average acc is 53.2277

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Epoch: 3/10 ---- best so far on epoch 2: acc=54.2733%

DEV accuracy on epoch 3/10 in train step 675 = 55.0911%

Dev loss average for this epoch is 1.3025 and average acc is 55.0911

Class turkey : (5733/8911) -> accuracy: 64.3362%

Class germany: (4786/9023) -> accuracy: 53.0422%

Class russia : (5190/8965) -> accuracy: 57.8918%

Class us : (4254/9113) -> accuracy: 46.6806%

Class france : (4828/8988) -> accuracy: 53.7161%

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

INFO:root: Best accuracy 55.0911% at epoch 3/10 (24791/45000)

DEV accuracy on epoch 3/10 in train step 1347 = 55.4000%

Dev loss average for this epoch is 1.2102 and average acc is 55.4000

Class turkey : (5903/8911) -> accuracy: 66.2440%

Class germany: (4797/9023) -> accuracy: 53.1641%

Class russia : (5144/8965) -> accuracy: 57.3787%

Class us : (4560/9113) -> accuracy: 50.0384%

Class france : (4526/8988) -> accuracy: 50.3560%

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

INFO:root: Best accuracy 55.4000% at epoch 3/10 (24930/45000)

Epoch run time: 00:23:49

Train average loss for this epoch is 1.4704 and average acc is 56.0185

###################################################################################################

Epoch: 4/10 ---- best so far on epoch 3: acc=55.4000%

DEV accuracy on epoch 4/10 in train step 675 = 55.8844%

Dev loss average for this epoch is 1.2000 and average acc is 55.8844

Class turkey : (5580/8911) -> accuracy: 62.6192%

Class germany: (5196/9023) -> accuracy: 57.5862%

Class russia : (5503/8965) -> accuracy: 61.3832%

Class us : (4207/9113) -> accuracy: 46.1648%

Class france : (4662/8988) -> accuracy: 51.8692%

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

INFO:root: Best accuracy 55.8844% at epoch 4/10 (25148/45000)

DEV accuracy on epoch 4/10 in train step 1347 = 56.1644%

Dev loss average for this epoch is 1.2005 and average acc is 56.1644

Class turkey : (6453/8911) -> accuracy: 72.4161%

Class germany: (4902/9023) -> accuracy: 54.3278%

Class russia : (5205/8965) -> accuracy: 58.0591%

Class us : (4576/9113) -> accuracy: 50.2140%

Class france : (4138/8988) -> accuracy: 46.0392%

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

INFO:root: Best accuracy 56.1644% at epoch 4/10 (25274/45000)

Epoch run time: 00:23:50

Train average loss for this epoch is 1.1741 and average acc is 57.9696

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Epoch: 5/10 ---- best so far on epoch 4: acc=56.1644%

DEV accuracy on epoch 5/10 in train step 675 = 56.1133%

Dev loss average for this epoch is 1.1989 and average acc is 56.1133

Class turkey : (5630/8911) -> accuracy: 63.1803%

Class germany: (5428/9023) -> accuracy: 60.1574%

Class russia : (5163/8965) -> accuracy: 57.5906%

Class us : (4307/9113) -> accuracy: 47.2622%

Class france : (4723/8988) -> accuracy: 52.5478%

DEV accuracy on epoch 5/10 in train step 1347 = 56.4556%

Dev loss average for this epoch is 1.2000 and average acc is 56.4556

Class turkey : (6077/8911) -> accuracy: 68.1966%

Class germany: (5538/9023) -> accuracy: 61.3765%

Class russia : (5585/8965) -> accuracy: 62.2978%

Class us : (4275/9113) -> accuracy: 46.9110%

Class france : (3930/8988) -> accuracy: 43.7250%

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

INFO:root: Best accuracy 56.4556% at epoch 5/10 (25405/45000)

Epoch run time: 00:23:47

Train average loss for this epoch is 1.1421 and average acc is 59.7960

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Epoch: 6/10 ---- best so far on epoch 5: acc=56.4556%

DEV accuracy on epoch 6/10 in train step 675 = 55.5778%

Dev loss average for this epoch is 1.2052 and average acc is 55.5778

Class turkey : (5345/8911) -> accuracy: 59.9820%

Class germany: (5432/9023) -> accuracy: 60.2017%

Class russia : (4862/8965) -> accuracy: 54.2331%

Class us : (4593/9113) -> accuracy: 50.4005%

Class france : (4778/8988) -> accuracy: 53.1598%

DEV accuracy on epoch 6/10 in train step 1347 = 56.4867%

Dev loss average for this epoch is 1.2056 and average acc is 56.4867

Class turkey : (5823/8911) -> accuracy: 65.3462%

Class germany: (5220/9023) -> accuracy: 57.8522%

Class russia : (5688/8965) -> accuracy: 63.4467%

Class us : (4769/9113) -> accuracy: 52.3318%

Class france : (3919/8988) -> accuracy: 43.6026%

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

INFO:root: Best accuracy 56.4867% at epoch 6/10 (25419/45000)

Epoch run time: 00:23:47

Train average loss for this epoch is 1.1145 and average acc is 61.4728

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Epoch: 7/10 ---- best so far on epoch 6: acc=56.4867%

DEV accuracy on epoch 7/10 in train step 675 = 55.9511%

Dev loss average for this epoch is 1.2035 and average acc is 55.9511

Class turkey : (5815/8911) -> accuracy: 65.2564%

Class germany: (5550/9023) -> accuracy: 61.5095%

Class russia : (4892/8965) -> accuracy: 54.5678%

Class us : (4898/9113) -> accuracy: 53.7474%

Class france : (4023/8988) -> accuracy: 44.7597%

DEV accuracy on epoch 7/10 in train step 1347 = 56.3556%

Dev loss average for this epoch is 1.2254 and average acc is 56.3556

Class turkey : (5635/8911) -> accuracy: 63.2364%

Class germany: (5152/9023) -> accuracy: 57.0985%

Class russia : (5673/8965) -> accuracy: 63.2794%

Class us : (4853/9113) -> accuracy: 53.2536%

Class france : (4047/8988) -> accuracy: 45.0267%

Epoch run time: 00:23:45

Train average loss for this epoch is 1.0867 and average acc is 63.0538

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Epoch: 8/10 ---- best so far on epoch 6: acc=56.4867%

DEV accuracy on epoch 8/10 in train step 675 = 54.9756%

Dev loss average for this epoch is 1.2255 and average acc is 54.9756

Class turkey : (6065/8911) -> accuracy: 68.0619%

Class germany: (4415/9023) -> accuracy: 48.9305%

Class russia : (4294/8965) -> accuracy: 47.8974%

Class us : (5286/9113) -> accuracy: 58.0050%

Class france : (4679/8988) -> accuracy: 52.0583%

DEV accuracy on epoch 8/10 in train step 1347 = 55.6711%

Dev loss average for this epoch is 1.2375 and average acc is 55.6711

Class turkey : (5302/8911) -> accuracy: 59.4995%

Class germany: (5048/9023) -> accuracy: 55.9459%

Class russia : (5430/8965) -> accuracy: 60.5689%

Class us : (5602/9113) -> accuracy: 61.4726%

Class france : (3670/8988) -> accuracy: 40.8322%

Epoch run time: 00:23:46

Train average loss for this epoch is 1.0624 and average acc is 64.4600

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Epoch: 9/10 ---- best so far on epoch 6: acc=56.4867%

DEV accuracy on epoch 9/10 in train step 675 = 54.7578%

Dev loss average for this epoch is 1.2355 and average acc is 54.7578

Class turkey : (6528/8911) -> accuracy: 73.2578%

Class germany: (3926/9023) -> accuracy: 43.5110%

Class russia : (4412/8965) -> accuracy: 49.2136%

Class us : (4873/9113) -> accuracy: 53.4731%

Class france : (4902/8988) -> accuracy: 54.5394%

DEV accuracy on epoch 9/10 in train step 1347 = 55.7267%

Dev loss average for this epoch is 1.2642 and average acc is 55.7267

Class turkey : (5179/8911) -> accuracy: 58.1192%

Class germany: (4559/9023) -> accuracy: 50.5264%

Class russia : (5677/8965) -> accuracy: 63.3240%

Class us : (5555/9113) -> accuracy: 60.9569%

Class france : (4107/8988) -> accuracy: 45.6943%

Epoch run time: 00:23:45

Train average loss for this epoch is 1.0388 and average acc is 65.9022

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Epoch: 10/10 ---- best so far on epoch 6: acc=56.4867%

DEV accuracy on epoch 10/10 in train step 675 = 54.8800%

Dev loss average for this epoch is 1.2537 and average acc is 54.8800

Class turkey : (6670/8911) -> accuracy: 74.8513%

Class germany: (4296/9023) -> accuracy: 47.6117%

Class russia : (4669/8965) -> accuracy: 52.0803%

Class us : (4549/9113) -> accuracy: 49.9177%

Class france : (4512/8988) -> accuracy: 50.2003%

DEV accuracy on epoch 10/10 in train step 1347 = 55.2711%

Dev loss average for this epoch is 1.2751 and average acc is 55.2711

Class turkey : (5299/8911) -> accuracy: 59.4658%

Class germany: (4321/9023) -> accuracy: 47.8887%

Class russia : (5200/8965) -> accuracy: 58.0033%

Class us : (5595/9113) -> accuracy: 61.3958%

Class france : (4457/8988) -> accuracy: 49.5883%

Epoch run time: 00:23:45

Train average loss for this epoch is 1.0155 and average acc is 67.2296

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\*\*\*Training is complete. Best accuracy 56.4867% at epoch 6/10

\*\*\*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 1.2060 and average acc is 56.5301

Accuracy on test set - (28152/49800) -> accuracy: 56.5301%

Class turkey : (6407/9886) -> accuracy: 64.8088%

Class germany: (5800/9930) -> accuracy: 58.4089%

Class russia : (6436/10062) -> accuracy: 63.9634%

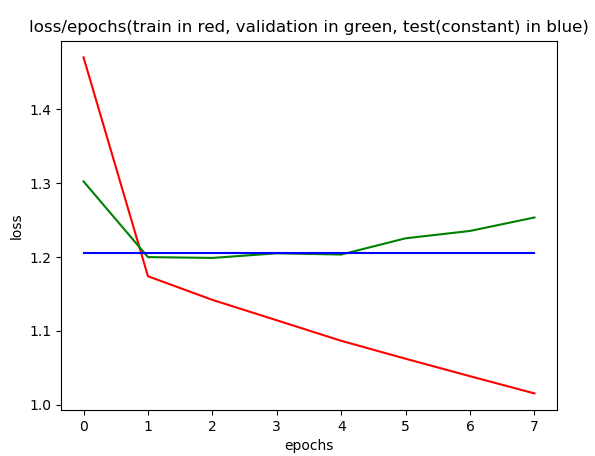
Class us : (5249/10081) -> accuracy: 52.0682%

Class france : (4260/9841) -> accuracy: 43.2883%

[17.751166961104783, 1.4703966681162517, 1.174104873251032, 1.1421445110109116, 1.114479511887939, 1.0867080387804244, 1.0624464920715049, 1.0387680960584569, 1.0155081843446803]

[12.076995023091634, 1.3024834752082826, 1.2000225885709126, 1.1989275654157003, 1.205167268117269, 1.2035179511706033, 1.2254863556226094, 1.2354545307159424, 1.253670425415039]

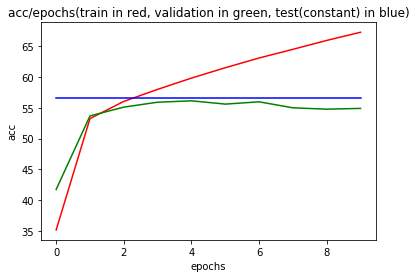
[1.2059790800852948, 1.2059790800852948, 1.2059790800852948, 1.2059790800852948, 1.2059790800852948, 1.2059790800852948, 1.2059790800852948, 1.2059790800852948, 1.2059790800852948]



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[41.742222249507904, 53.662222027778625, 55.09111092487971, 55.88444451491038, 56.113333205382034, 55.57777772347132, 55.95111105839411, 54.97555549939474, 54.75777765115102, 54.8800000945727]

[56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117, 56.53012014297117]

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 0.25

BATCH\_SIZE 300

LSTM\_HIDDEN\_UNITS 200

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=6 is 56.4867

testing acc 56.5301

Time(HH:MM:SS): 04:01:26

Leaving function \_\_main\_\_