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: (400, 150)

input\_labels\_batch shape: (400, 5)

data(after embedding) shape: (400, 150, 300)

gru\_forward\_cell units: 100

gru\_forward\_cell2 units: 100

multi\_forward\_cell: 2 cells

gru\_backward\_cell units: 100

gru\_backward\_cell2 units: 100

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(400), Dimension(200)]), 80000)

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

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(400), Dimension(100)]), 40000)

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

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(200), Dimension(200)]), 40000)

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

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(200), Dimension(100)]), 20000)

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

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(400), Dimension(200)]), 80000)

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

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(400), Dimension(100)]), 40000)

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

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(200), Dimension(200)]), 40000)

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

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(200), Dimension(100)]), 20000)

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

(u'Variable:0', TensorShape([Dimension(200), Dimension(5)]), 1000)

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

total PARAM 362,205

---done vars---

batches\_num\_train: 1012

batches\_num\_dev: 112

20:26:52

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

DEV accuracy on epoch 1/10 in train step 506 = 44.7277%

Dev loss average for this epoch is 151.9944 and average acc is 44.7277

Class turkey : (5073/8947) -> accuracy: 56.7006%

Class germany: (4750/9048) -> accuracy: 52.4978%

Class russia : (5360/8928) -> accuracy: 60.0358%

Class us : (1959/8998) -> accuracy: 21.7715%

Class france : (2896/8879) -> accuracy: 32.6163%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 1

INFO:root: Best accuracy 44.7277% at epoch 1/10 (20038/44800)

DEV accuracy on epoch 1/10 in train step 1009 = 50.2746%

Dev loss average for this epoch is 56.2048 and average acc is 50.2746

Class turkey : (4828/8947) -> accuracy: 53.9622%

Class germany: (5996/9048) -> accuracy: 66.2688%

Class russia : (5723/8928) -> accuracy: 64.1017%

Class us : (3425/8998) -> accuracy: 38.0640%

Class france : (2551/8879) -> accuracy: 28.7307%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 1

INFO:root: Best accuracy 50.2746% at epoch 1/10 (22523/44800)

Epoch run time: 00:17:23

Train average loss for this epoch is 176.0388 and average acc is 36.1052

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20:44:15

Epoch: 2/10 ---- best so far on epoch 1: acc=50.2746%

DEV accuracy on epoch 2/10 in train step 506 = 52.3080%

Dev loss average for this epoch is 18.7901 and average acc is 52.3080

Class turkey : (5574/8947) -> accuracy: 62.3002%

Class germany: (4602/9048) -> accuracy: 50.8621%

Class russia : (5829/8928) -> accuracy: 65.2890%

Class us : (3681/8998) -> accuracy: 40.9091%

Class france : (3748/8879) -> accuracy: 42.2120%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 2

INFO:root: Best accuracy 52.3080% at epoch 2/10 (23434/44800)

DEV accuracy on epoch 2/10 in train step 1009 = 53.0491%

Dev loss average for this epoch is 5.9466 and average acc is 53.0491

Class turkey : (5719/8947) -> accuracy: 63.9209%

Class germany: (4713/9048) -> accuracy: 52.0889%

Class russia : (5408/8928) -> accuracy: 60.5735%

Class us : (4494/8998) -> accuracy: 49.9444%

Class france : (3432/8879) -> accuracy: 38.6530%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 2

INFO:root: Best accuracy 53.0491% at epoch 2/10 (23766/44800)

Epoch run time: 00:17:16

Train average loss for this epoch is 22.8525 and average acc is 50.4869

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21:01:31

Epoch: 3/10 ---- best so far on epoch 2: acc=53.0491%

DEV accuracy on epoch 3/10 in train step 506 = 53.6451%

Dev loss average for this epoch is 2.1952 and average acc is 53.6451

Class turkey : (5603/8947) -> accuracy: 62.6243%

Class germany: (4639/9048) -> accuracy: 51.2710%

Class russia : (5606/8928) -> accuracy: 62.7912%

Class us : (3926/8998) -> accuracy: 43.6319%

Class france : (4259/8879) -> accuracy: 47.9671%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 3

INFO:root: Best accuracy 53.6451% at epoch 3/10 (24033/44800)

DEV accuracy on epoch 3/10 in train step 1009 = 53.9821%

Dev loss average for this epoch is 1.4030 and average acc is 53.9821

Class turkey : (5908/8947) -> accuracy: 66.0333%

Class germany: (4968/9048) -> accuracy: 54.9072%

Class russia : (5402/8928) -> accuracy: 60.5063%

Class us : (3857/8998) -> accuracy: 42.8651%

Class france : (4049/8879) -> accuracy: 45.6020%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 3

INFO:root: Best accuracy 53.9821% at epoch 3/10 (24184/44800)

Epoch run time: 00:17:09

Train average loss for this epoch is 2.7084 and average acc is 53.3253

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21:18:40

Epoch: 4/10 ---- best so far on epoch 3: acc=53.9821%

DEV accuracy on epoch 4/10 in train step 506 = 54.1250%

Dev loss average for this epoch is 1.2881 and average acc is 54.1250

Class turkey : (5712/8947) -> accuracy: 63.8426%

Class germany: (5429/9048) -> accuracy: 60.0022%

Class russia : (5835/8928) -> accuracy: 65.3562%

Class us : (3503/8998) -> accuracy: 38.9309%

Class france : (3769/8879) -> accuracy: 42.4485%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 4

INFO:root: Best accuracy 54.1250% at epoch 4/10 (24248/44800)

DEV accuracy on epoch 4/10 in train step 1009 = 54.8281%

Dev loss average for this epoch is 1.2683 and average acc is 54.8281

Class turkey : (5489/8947) -> accuracy: 61.3502%

Class germany: (4724/9048) -> accuracy: 52.2104%

Class russia : (5986/8928) -> accuracy: 67.0475%

Class us : (4605/8998) -> accuracy: 51.1780%

Class france : (3759/8879) -> accuracy: 42.3358%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 4

INFO:root: Best accuracy 54.8281% at epoch 4/10 (24563/44800)

Epoch run time: 00:17:12

Train average loss for this epoch is 1.3200 and average acc is 54.7947

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21:35:53

Epoch: 5/10 ---- best so far on epoch 4: acc=54.8281%

DEV accuracy on epoch 5/10 in train step 506 = 54.8973%

Dev loss average for this epoch is 1.2646 and average acc is 54.8973

Class turkey : (5348/8947) -> accuracy: 59.7742%

Class germany: (5013/9048) -> accuracy: 55.4045%

Class russia : (5773/8928) -> accuracy: 64.6617%

Class us : (4110/8998) -> accuracy: 45.6768%

Class france : (4350/8879) -> accuracy: 48.9920%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 5

INFO:root: Best accuracy 54.8973% at epoch 5/10 (24594/44800)

DEV accuracy on epoch 5/10 in train step 1009 = 55.4263%

Dev loss average for this epoch is 1.2558 and average acc is 55.4263

Class turkey : (5636/8947) -> accuracy: 62.9932%

Class germany: (4682/9048) -> accuracy: 51.7462%

Class russia : (5735/8928) -> accuracy: 64.2361%

Class us : (4813/8998) -> accuracy: 53.4897%

Class france : (3965/8879) -> accuracy: 44.6559%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 5

INFO:root: Best accuracy 55.4263% at epoch 5/10 (24831/44800)

Epoch run time: 00:17:17

Train average loss for this epoch is 1.2741 and average acc is 55.9222

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21:53:11

Epoch: 6/10 ---- best so far on epoch 5: acc=55.4263%

DEV accuracy on epoch 6/10 in train step 506 = 54.8013%

Dev loss average for this epoch is 1.2578 and average acc is 54.8013

Class turkey : (5182/8947) -> accuracy: 57.9189%

Class germany: (5062/9048) -> accuracy: 55.9461%

Class russia : (5802/8928) -> accuracy: 64.9866%

Class us : (3948/8998) -> accuracy: 43.8764%

Class france : (4557/8879) -> accuracy: 51.3233%

DEV accuracy on epoch 6/10 in train step 1009 = 55.8147%

Dev loss average for this epoch is 1.2509 and average acc is 55.8147

Class turkey : (5448/8947) -> accuracy: 60.8919%

Class germany: (5028/9048) -> accuracy: 55.5703%

Class russia : (5642/8928) -> accuracy: 63.1944%

Class us : (4921/8998) -> accuracy: 54.6899%

Class france : (3966/8879) -> accuracy: 44.6672%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 6

INFO:root: Best accuracy 55.8147% at epoch 6/10 (25005/44800)

Epoch run time: 00:17:14

Train average loss for this epoch is 1.2590 and average acc is 56.8577

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22:10:26

Epoch: 7/10 ---- best so far on epoch 6: acc=55.8147%

DEV accuracy on epoch 7/10 in train step 506 = 55.0804%

Dev loss average for this epoch is 1.2600 and average acc is 55.0804

Class turkey : (5327/8947) -> accuracy: 59.5395%

Class germany: (5348/9048) -> accuracy: 59.1070%

Class russia : (5524/8928) -> accuracy: 61.8728%

Class us : (3689/8998) -> accuracy: 40.9980%

Class france : (4788/8879) -> accuracy: 53.9250%

DEV accuracy on epoch 7/10 in train step 1009 = 55.9754%

Dev loss average for this epoch is 1.2475 and average acc is 55.9754

Class turkey : (5957/8947) -> accuracy: 66.5810%

Class germany: (4465/9048) -> accuracy: 49.3479%

Class russia : (5783/8928) -> accuracy: 64.7737%

Class us : (4642/8998) -> accuracy: 51.5892%

Class france : (4230/8879) -> accuracy: 47.6405%

INFO:root: Saved model ../model\_1535401609/model.ckpt at epoch 7

INFO:root: Best accuracy 55.9754% at epoch 7/10 (25077/44800)

Epoch run time: 00:17:13

Train average loss for this epoch is 1.2455 and average acc is 57.8021

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22:27:39

Epoch: 8/10 ---- best so far on epoch 7: acc=55.9754%

DEV accuracy on epoch 8/10 in train step 506 = 55.7210%

Dev loss average for this epoch is 1.2485 and average acc is 55.7210

Class turkey : (5252/8947) -> accuracy: 58.7012%

Class germany: (5023/9048) -> accuracy: 55.5150%

Class russia : (5710/8928) -> accuracy: 63.9561%

Class us : (4415/8998) -> accuracy: 49.0665%

Class france : (4563/8879) -> accuracy: 51.3909%

DEV accuracy on epoch 8/10 in train step 1009 = 55.9531%

Dev loss average for this epoch is 1.2463 and average acc is 55.9531

Class turkey : (5894/8947) -> accuracy: 65.8768%

Class germany: (4506/9048) -> accuracy: 49.8011%

Class russia : (5475/8928) -> accuracy: 61.3239%

Class us : (4892/8998) -> accuracy: 54.3676%

Class france : (4300/8879) -> accuracy: 48.4289%

Epoch run time: 00:17:09

Train average loss for this epoch is 1.2340 and average acc is 58.6462

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22:44:49

Epoch: 9/10 ---- best so far on epoch 7: acc=55.9754%

DEV accuracy on epoch 9/10 in train step 506 = 55.8438%

Dev loss average for this epoch is 1.2466 and average acc is 55.8437

Class turkey : (5600/8947) -> accuracy: 62.5908%

Class germany: (5474/9048) -> accuracy: 60.4996%

Class russia : (5612/8928) -> accuracy: 62.8584%

Class us : (4482/8998) -> accuracy: 49.8111%

Class france : (3850/8879) -> accuracy: 43.3607%

DEV accuracy on epoch 9/10 in train step 1009 = 55.9531%

Dev loss average for this epoch is 1.2483 and average acc is 55.9531

Class turkey : (5565/8947) -> accuracy: 62.1996%

Class germany: (4538/9048) -> accuracy: 50.1547%

Class russia : (5473/8928) -> accuracy: 61.3015%

Class us : (5485/8998) -> accuracy: 60.9580%

Class france : (4006/8879) -> accuracy: 45.1177%

Epoch run time: 00:17:09

Train average loss for this epoch is 1.2238 and average acc is 59.3686

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23:01:58

Epoch: 10/10 ---- best so far on epoch 7: acc=55.9754%

DEV accuracy on epoch 10/10 in train step 506 = 55.8884%

Dev loss average for this epoch is 1.2497 and average acc is 55.8884

Class turkey : (6127/8947) -> accuracy: 68.4811%

Class germany: (5002/9048) -> accuracy: 55.2829%

Class russia : (5581/8928) -> accuracy: 62.5112%

Class us : (4237/8998) -> accuracy: 47.0882%

Class france : (4091/8879) -> accuracy: 46.0750%

DEV accuracy on epoch 10/10 in train step 1009 = 55.8348%

Dev loss average for this epoch is 1.2534 and average acc is 55.8348

Class turkey : (5320/8947) -> accuracy: 59.4613%

Class germany: (4692/9048) -> accuracy: 51.8568%

Class russia : (5405/8928) -> accuracy: 60.5399%

Class us : (5435/8998) -> accuracy: 60.4023%

Class france : (4162/8879) -> accuracy: 46.8746%

Epoch run time: 00:17:09

Train average loss for this epoch is 1.2137 and average acc is 60.0012

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\*\*\*Training is complete. Best accuracy 55.9754% at epoch 7/10

\*\*\*Testing...

INFO:tensorflow:Restoring parameters from ../model\_1535401609/model.ckpt

INFO:tensorflow:Restoring parameters from ../model\_1535401609/model.ckpt

Test loss average for this epoch is 1.2495 and average acc is 55.7160

Accuracy on test set - (27858/50000) -> accuracy: 55.7160%

Class turkey : (6709/10169) -> accuracy: 65.9750%

Class germany: (4948/9933) -> accuracy: 49.8138%

Class russia : (6416/9956) -> accuracy: 64.4436%

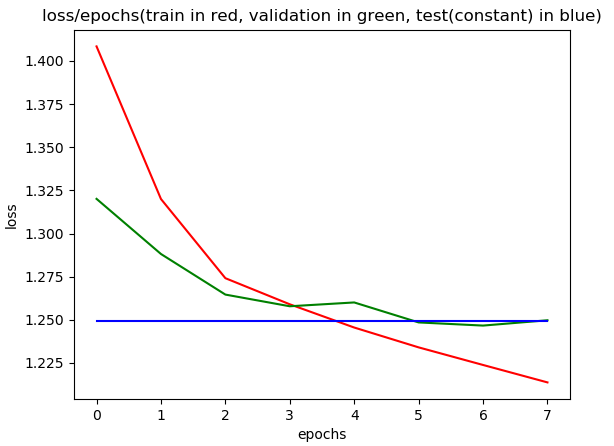
Class us : (5127/10019) -> accuracy: 51.1728%

Class france : (4658/9923) -> accuracy: 46.9414%

[22.852462974932823, 2.70844907487334, 1.3199989554203546, 1.27410406380774, 1.2589713239622682, 1.2455047324240915, 1.2340055383712407, 1.2238097146094553, 1.2137039929274984]

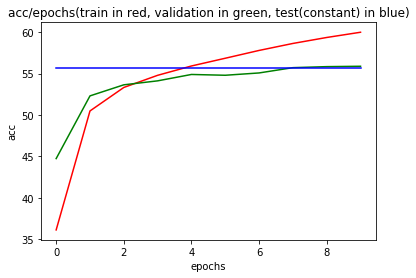
[18.790122832570756, 2.195200800895691, 1.2881286325199264, 1.2646038755774498, 1.2578291499188967, 1.2600430441754205, 1.248461759516171, 1.2466367429920606, 1.2497130270515169]

[1.2494624633789062, 1.2494624633789062, 1.2494624633789062, 1.2494624633789062, 1.2494624633789062, 1.2494624633789062, 1.2494624633789062, 1.2494624633789062, 1.2494624633789062]

 [36.105237144373156, 50.48690688586518, 53.32534583248639, 54.794713489622936, 55.92218385089056, 56.857707466297, 57.80212436857902, 58.64624497683152, 59.368577081224196, 60.00123526974629]

[44.72767851714577, 52.30803574834552, 53.645089321902816, 54.12500000425747, 54.89732160099915, 54.80133944324085, 55.08035708750997, 55.72098222162042, 55.843749828636646, 55.88839272303241]

[55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356, 55.716000127792356]

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 0.15

BATCH\_SIZE 400

GRU\_HIDDEN\_UNITS 100

CELL\_TYPE GRU

optimizer is adamOptimizer - learn rate: 0.001

model:

USE\_TMP\_FOLDER False

mdl\_path ../model\_1535401609/model.ckpt

results:

best training acc at epoch=7 is 55.9754

testing acc 55.7160

Time(HH:MM:SS): 02:55:09

Leaving function \_\_main\_\_