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: 300

gru\_forward\_cell2 units: 300

multi\_forward\_cell: 2 cells

gru\_backward\_cell units: 300

gru\_backward\_cell2 units: 300

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(600), Dimension(600)]), 360000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/bias:0', TensorShape([Dimension(600)]), 600)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(600), Dimension(300)]), 180000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(300)]), 300)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(600), Dimension(600)]), 360000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/bias:0', TensorShape([Dimension(600)]), 600)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(600), Dimension(300)]), 180000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(300)]), 300)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(600), Dimension(600)]), 360000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/bias:0', TensorShape([Dimension(600)]), 600)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(600), Dimension(300)]), 180000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(300)]), 300)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(600), Dimension(600)]), 360000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/bias:0', TensorShape([Dimension(600)]), 600)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(600), Dimension(300)]), 180000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(300)]), 300)

(u'weight:0', TensorShape([Dimension(600), Dimension(5)]), 3000)

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

total PARAM 2,166,605

---done vars---

batches\_num\_train2025

batches\_num\_dev225

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

DEV accuracy on epoch 1/10 in train step 1012 = 52.3178%

Dev loss for this epoch is 1.35002490504

Class turkey : (5152/8882) -> accuracy: 58.0050%

Class germany: (4456/8995) -> accuracy: 49.5386%

Class russia : (5260/9079) -> accuracy: 57.9359%

Class us : (4087/9012) -> accuracy: 45.3506%

Class france : (4588/9032) -> accuracy: 50.7972%

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

INFO:root: Best accuracy 52.3178% at epoch 1/10 (23543/45000)

DEV accuracy on epoch 1/10 in train step 2022 = 54.5444%

Dev loss for this epoch is 1.25913268493

Class turkey : (5592/8882) -> accuracy: 62.9588%

Class germany: (5044/8995) -> accuracy: 56.0756%

Class russia : (5624/9079) -> accuracy: 61.9451%

Class us : (4296/9012) -> accuracy: 47.6698%

Class france : (3989/9032) -> accuracy: 44.1652%

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

INFO:root: Best accuracy 54.5444% at epoch 1/10 (24545/45000)

Epoch run time: 00:45:04

Train loss for this epoch is 1.25899139955

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Epoch: 2/10 ---- best so far on epoch 1: acc=54.5444%

DEV accuracy on epoch 2/10 in train step 1012 = 55.7311%

Dev loss for this epoch is 1.1169186015

Class turkey : (5318/8882) -> accuracy: 59.8739%

Class germany: (4240/8995) -> accuracy: 47.1373%

Class russia : (5610/9079) -> accuracy: 61.7909%

Class us : (4826/9012) -> accuracy: 53.5508%

Class france : (5085/9032) -> accuracy: 56.2998%

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

INFO:root: Best accuracy 55.7311% at epoch 2/10 (25079/45000)

DEV accuracy on epoch 2/10 in train step 2022 = 56.4644%

Dev loss for this epoch is 1.09814337236

Class turkey : (6010/8882) -> accuracy: 67.6649%

Class germany: (4706/8995) -> accuracy: 52.3180%

Class russia : (5450/9079) -> accuracy: 60.0286%

Class us : (4977/9012) -> accuracy: 55.2264%

Class france : (4266/9032) -> accuracy: 47.2321%

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

INFO:root: Best accuracy 56.4644% at epoch 2/10 (25409/45000)

Epoch run time: 00:50:58

Train loss for this epoch is 1.09810354683

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Epoch: 3/10 ---- best so far on epoch 2: acc=56.4644%

DEV accuracy on epoch 3/10 in train step 1012 = 57.0289%

Dev loss for this epoch is 1.03949234316

Class turkey : (5555/8882) -> accuracy: 62.5422%

Class germany: (4557/8995) -> accuracy: 50.6615%

Class russia : (5766/9079) -> accuracy: 63.5092%

Class us : (4862/9012) -> accuracy: 53.9503%

Class france : (4923/9032) -> accuracy: 54.5062%

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

INFO:root: Best accuracy 57.0289% at epoch 3/10 (25663/45000)

DEV accuracy on epoch 3/10 in train step 2022 = 56.9844%

Dev loss for this epoch is 1.02386080426

Class turkey : (6107/8882) -> accuracy: 68.7570%

Class germany: (4721/8995) -> accuracy: 52.4847%

Class russia : (5482/9079) -> accuracy: 60.3811%

Class us : (4848/9012) -> accuracy: 53.7949%

Class france : (4485/9032) -> accuracy: 49.6568%

Epoch run time: 00:46:50

Train loss for this epoch is 1.02384890745

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Epoch: 4/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 4/10 in train step 1012 = 56.8333%

Dev loss for this epoch is 0.96782903916

Class turkey : (5517/8882) -> accuracy: 62.1144%

Class germany: (4910/8995) -> accuracy: 54.5859%

Class russia : (5613/9079) -> accuracy: 61.8240%

Class us : (4675/9012) -> accuracy: 51.8753%

Class france : (4860/9032) -> accuracy: 53.8087%

DEV accuracy on epoch 4/10 in train step 2022 = 56.6333%

Dev loss for this epoch is 0.954108270365

Class turkey : (6210/8882) -> accuracy: 69.9167%

Class germany: (4468/8995) -> accuracy: 49.6720%

Class russia : (5279/9079) -> accuracy: 58.1452%

Class us : (4542/9012) -> accuracy: 50.3995%

Class france : (4986/9032) -> accuracy: 55.2037%

Epoch run time: 00:44:43

Train loss for this epoch is 0.954085123068

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Epoch: 5/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 5/10 in train step 1012 = 56.4911%

Dev loss for this epoch is 0.901023281527

Class turkey : (5314/8882) -> accuracy: 59.8289%

Class germany: (5320/8995) -> accuracy: 59.1440%

Class russia : (5553/9079) -> accuracy: 61.1631%

Class us : (4487/9012) -> accuracy: 49.7892%

Class france : (4747/9032) -> accuracy: 52.5576%

DEV accuracy on epoch 5/10 in train step 2022 = 55.9956%

Dev loss for this epoch is 0.887377550858

Class turkey : (5680/8882) -> accuracy: 63.9496%

Class germany: (4334/8995) -> accuracy: 48.1823%

Class russia : (5409/9079) -> accuracy: 59.5770%

Class us : (4631/9012) -> accuracy: 51.3870%

Class france : (5144/9032) -> accuracy: 56.9531%

Epoch run time: 00:44:43

Train loss for this epoch is 0.88734277634

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Epoch: 6/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 6/10 in train step 1012 = 55.4800%

Dev loss for this epoch is 0.836252642996

Class turkey : (5374/8882) -> accuracy: 60.5044%

Class germany: (5706/8995) -> accuracy: 63.4352%

Class russia : (5208/9079) -> accuracy: 57.3631%

Class us : (4126/9012) -> accuracy: 45.7834%

Class france : (4552/9032) -> accuracy: 50.3986%

DEV accuracy on epoch 6/10 in train step 2022 = 55.6400%

Dev loss for this epoch is 0.826918383665

Class turkey : (5393/8882) -> accuracy: 60.7183%

Class germany: (4222/8995) -> accuracy: 46.9372%

Class russia : (5745/9079) -> accuracy: 63.2779%

Class us : (4553/9012) -> accuracy: 50.5215%

Class france : (5125/9032) -> accuracy: 56.7427%

Epoch run time: 00:44:42

Train loss for this epoch is 0.826871578428

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Epoch: 7/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 7/10 in train step 1012 = 54.7689%

Dev loss for this epoch is 0.778170817343

Class turkey : (5561/8882) -> accuracy: 62.6098%

Class germany: (5648/8995) -> accuracy: 62.7904%

Class russia : (4593/9079) -> accuracy: 50.5893%

Class us : (4651/9012) -> accuracy: 51.6090%

Class france : (4193/9032) -> accuracy: 46.4238%

DEV accuracy on epoch 7/10 in train step 2022 = 55.2978%

Dev loss for this epoch is 0.768499027015

Class turkey : (5362/8882) -> accuracy: 60.3693%

Class germany: (4148/8995) -> accuracy: 46.1145%

Class russia : (5707/9079) -> accuracy: 62.8593%

Class us : (5247/9012) -> accuracy: 58.2224%

Class france : (4420/9032) -> accuracy: 48.9371%

Epoch run time: 00:44:42

Train loss for this epoch is 0.768483868411

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Epoch: 8/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 8/10 in train step 1012 = 54.9067%

Dev loss for this epoch is 0.732052659706

Class turkey : (5474/8882) -> accuracy: 61.6303%

Class germany: (5179/8995) -> accuracy: 57.5764%

Class russia : (5022/9079) -> accuracy: 55.3145%

Class us : (4830/9012) -> accuracy: 53.5952%

Class france : (4203/9032) -> accuracy: 46.5345%

DEV accuracy on epoch 8/10 in train step 2022 = 54.7578%

Dev loss for this epoch is 0.724762549803

Class turkey : (5357/8882) -> accuracy: 60.3130%

Class germany: (4465/8995) -> accuracy: 49.6387%

Class russia : (5315/9079) -> accuracy: 58.5417%

Class us : (4985/9012) -> accuracy: 55.3151%

Class france : (4519/9032) -> accuracy: 50.0332%

Epoch run time: 00:44:42

Train loss for this epoch is 0.72477989812

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Epoch: 9/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 9/10 in train step 1012 = 54.6689%

Dev loss for this epoch is 0.692953081528

Class turkey : (5491/8882) -> accuracy: 61.8217%

Class germany: (4946/8995) -> accuracy: 54.9861%

Class russia : (5366/9079) -> accuracy: 59.1034%

Class us : (4703/9012) -> accuracy: 52.1860%

Class france : (4095/9032) -> accuracy: 45.3388%

DEV accuracy on epoch 9/10 in train step 2022 = 54.1889%

Dev loss for this epoch is 0.68579284902

Class turkey : (5231/8882) -> accuracy: 58.8944%

Class germany: (4676/8995) -> accuracy: 51.9844%

Class russia : (5320/9079) -> accuracy: 58.5968%

Class us : (4460/9012) -> accuracy: 49.4896%

Class france : (4698/9032) -> accuracy: 52.0151%

Epoch run time: 00:44:42

Train loss for this epoch is 0.685797620438

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Epoch: 10/10 ---- best so far on epoch 3: acc=57.0289%

DEV accuracy on epoch 10/10 in train step 1012 = 54.6378%

Dev loss for this epoch is 0.656162968569

Class turkey : (5193/8882) -> accuracy: 58.4666%

Class germany: (4742/8995) -> accuracy: 52.7182%

Class russia : (5449/9079) -> accuracy: 60.0176%

Class us : (4954/9012) -> accuracy: 54.9711%

Class france : (4249/9032) -> accuracy: 47.0438%

DEV accuracy on epoch 10/10 in train step 2022 = 53.9489%

Dev loss for this epoch is 0.650570222442

Class turkey : (5164/8882) -> accuracy: 58.1401%

Class germany: (4691/8995) -> accuracy: 52.1512%

Class russia : (5374/9079) -> accuracy: 59.1915%

Class us : (4375/9012) -> accuracy: 48.5464%

Class france : (4673/9032) -> accuracy: 51.7383%

Epoch run time: 00:44:43

Train loss for this epoch is 0.650537974408

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\*\*\*Training is complete. Best accuracy 57.0289% at epoch 3/10

\*\*\*Testing...

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

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

Accuracy on test set - (28496/50000) -> accuracy: 56.9920%

Class turkey : (6273/10022) -> accuracy: 62.5923%

Class germany: (5093/9985) -> accuracy: 51.0065%

Class russia : (6300/10020) -> accuracy: 62.8743%

Class us : (5392/9958) -> accuracy: 54.1474%

Class france : (5438/10015) -> accuracy: 54.2986%

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 300

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=3 is 57.0289

testing acc 56.9920

Time(HH:MM:SS): 07:43:20

Leaving function \_\_main\_\_