Entering function \_\_main\_\_

Embedding tokens size=400001

File name 4way\_tur\_ger\_rus\_usa25-150. Total data size is 200000

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

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

x\_train: 162000, x\_dev: 18000, x\_test: 20000

y\_train: 162000, y\_dev: 18000, y\_test: 20000

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

input\_labels\_batch shape: (200, 4)

gru\_forward\_cell units: 150

gru\_backward\_cell units: 150

---vars name and shapes---

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(450), Dimension(300)]), 135000)

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

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(450), Dimension(150)]), 67500)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(150)]), 150)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(300), Dimension(300)]), 90000)

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

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(300), Dimension(150)]), 45000)

(u'bidirectional\_rnn/fw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(150)]), 150)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/gates/kernel:0', TensorShape([Dimension(450), Dimension(300)]), 135000)

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

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/kernel:0', TensorShape([Dimension(450), Dimension(150)]), 67500)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_0/gru\_cell/candidate/bias:0', TensorShape([Dimension(150)]), 150)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/gates/kernel:0', TensorShape([Dimension(300), Dimension(300)]), 90000)

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

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/kernel:0', TensorShape([Dimension(300), Dimension(150)]), 45000)

(u'bidirectional\_rnn/bw/multi\_rnn\_cell/cell\_1/gru\_cell/candidate/bias:0', TensorShape([Dimension(150)]), 150)

(u'weight:0', TensorShape([Dimension(300), Dimension(4)]), 1200)

(u'bias:0', TensorShape([Dimension(4)]), 4)

total PARAM 678,004

---done vars---

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

DEV accuracy on epoch 1/10 in train step 405 = 55.4778%

Class turkey : (3399/4476) -> accuracy: 75.9383%

Class germany: (1705/4486) -> accuracy: 38.0071%

Class russia : (2451/4511) -> accuracy: 54.3339%

Class us : (2431/4527) -> accuracy: 53.7000%

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

INFO:root: Best accuracy 55.4778% at epoch 1/10 (9986/18000)

DEV accuracy on epoch 1/10 in train step 807 = 60.2056%

Class turkey : (2770/4476) -> accuracy: 61.8856%

Class germany: (2105/4486) -> accuracy: 46.9238%

Class russia : (3116/4511) -> accuracy: 69.0756%

Class us : (2846/4527) -> accuracy: 62.8672%

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

INFO:root: Best accuracy 60.2056% at epoch 1/10 (10837/18000)

Epoch run time: 00:12:10

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Epoch: 2/10 ---- best so far on epoch 1: acc=60.2056%

DEV accuracy on epoch 2/10 in train step 405 = 61.7222%

Class turkey : (3285/4476) -> accuracy: 73.3914%

Class germany: (2504/4486) -> accuracy: 55.8181%

Class russia : (2823/4511) -> accuracy: 62.5804%

Class us : (2498/4527) -> accuracy: 55.1800%

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

INFO:root: Best accuracy 61.7222% at epoch 2/10 (11110/18000)

DEV accuracy on epoch 2/10 in train step 807 = 62.5722%

Class turkey : (2909/4476) -> accuracy: 64.9911%

Class germany: (2005/4486) -> accuracy: 44.6946%

Class russia : (3162/4511) -> accuracy: 70.0953%

Class us : (3187/4527) -> accuracy: 70.3998%

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

INFO:root: Best accuracy 62.5722% at epoch 2/10 (11263/18000)

Epoch run time: 00:11:56

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Epoch: 3/10 ---- best so far on epoch 2: acc=62.5722%

DEV accuracy on epoch 3/10 in train step 405 = 63.7444%

Class turkey : (3175/4476) -> accuracy: 70.9339%

Class germany: (2700/4486) -> accuracy: 60.1872%

Class russia : (2878/4511) -> accuracy: 63.7996%

Class us : (2721/4527) -> accuracy: 60.1060%

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

INFO:root: Best accuracy 63.7444% at epoch 3/10 (11474/18000)

DEV accuracy on epoch 3/10 in train step 807 = 63.2611%

Class turkey : (3015/4476) -> accuracy: 67.3592%

Class germany: (2006/4486) -> accuracy: 44.7169%

Class russia : (3253/4511) -> accuracy: 72.1126%

Class us : (3113/4527) -> accuracy: 68.7652%

Epoch run time: 00:11:54

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Epoch: 4/10 ---- best so far on epoch 3: acc=63.7444%

DEV accuracy on epoch 4/10 in train step 405 = 64.5889%

Class turkey : (3231/4476) -> accuracy: 72.1850%

Class germany: (2701/4486) -> accuracy: 60.2095%

Class russia : (3093/4511) -> accuracy: 68.5657%

Class us : (2601/4527) -> accuracy: 57.4553%

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

INFO:root: Best accuracy 64.5889% at epoch 4/10 (11626/18000)

DEV accuracy on epoch 4/10 in train step 807 = 64.0889%

Class turkey : (3152/4476) -> accuracy: 70.4200%

Class germany: (2108/4486) -> accuracy: 46.9906%

Class russia : (3075/4511) -> accuracy: 68.1667%

Class us : (3201/4527) -> accuracy: 70.7091%

Epoch run time: 00:11:52

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Epoch: 5/10 ---- best so far on epoch 4: acc=64.5889%

DEV accuracy on epoch 5/10 in train step 405 = 64.7056%

Class turkey : (3174/4476) -> accuracy: 70.9115%

Class germany: (2662/4486) -> accuracy: 59.3402%

Class russia : (3246/4511) -> accuracy: 71.9574%

Class us : (2565/4527) -> accuracy: 56.6600%

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

INFO:root: Best accuracy 64.7056% at epoch 5/10 (11647/18000)

DEV accuracy on epoch 5/10 in train step 807 = 64.3444%

Class turkey : (3194/4476) -> accuracy: 71.3584%

Class germany: (2299/4486) -> accuracy: 51.2483%

Class russia : (2890/4511) -> accuracy: 64.0656%

Class us : (3199/4527) -> accuracy: 70.6649%

Epoch run time: 00:11:51

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Epoch: 6/10 ---- best so far on epoch 5: acc=64.7056%

DEV accuracy on epoch 6/10 in train step 405 = 63.8833%

Class turkey : (3244/4476) -> accuracy: 72.4754%

Class germany: (2512/4486) -> accuracy: 55.9964%

Class russia : (3329/4511) -> accuracy: 73.7974%

Class us : (2414/4527) -> accuracy: 53.3245%

DEV accuracy on epoch 6/10 in train step 807 = 63.6000%

Class turkey : (3029/4476) -> accuracy: 67.6720%

Class germany: (2131/4486) -> accuracy: 47.5033%

Class russia : (2930/4511) -> accuracy: 64.9523%

Class us : (3358/4527) -> accuracy: 74.1772%

Epoch run time: 00:11:49

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Epoch: 7/10 ---- best so far on epoch 5: acc=64.7056%

DEV accuracy on epoch 7/10 in train step 405 = 63.7889%

Class turkey : (3197/4476) -> accuracy: 71.4254%

Class germany: (2603/4486) -> accuracy: 58.0250%

Class russia : (3336/4511) -> accuracy: 73.9526%

Class us : (2346/4527) -> accuracy: 51.8224%

DEV accuracy on epoch 7/10 in train step 807 = 63.2778%

Class turkey : (2764/4476) -> accuracy: 61.7516%

Class germany: (2085/4486) -> accuracy: 46.4779%

Class russia : (3287/4511) -> accuracy: 72.8663%

Class us : (3254/4527) -> accuracy: 71.8798%

Epoch run time: 00:11:49

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Epoch: 8/10 ---- best so far on epoch 5: acc=64.7056%

DEV accuracy on epoch 8/10 in train step 405 = 63.3056%

Class turkey : (2958/4476) -> accuracy: 66.0858%

Class germany: (2568/4486) -> accuracy: 57.2448%

Class russia : (3363/4511) -> accuracy: 74.5511%

Class us : (2506/4527) -> accuracy: 55.3567%

DEV accuracy on epoch 8/10 in train step 807 = 62.7556%

Class turkey : (2649/4476) -> accuracy: 59.1823%

Class germany: (2106/4486) -> accuracy: 46.9461%

Class russia : (3384/4511) -> accuracy: 75.0166%

Class us : (3157/4527) -> accuracy: 69.7371%

Epoch run time: 00:11:49

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Epoch: 9/10 ---- best so far on epoch 5: acc=64.7056%

DEV accuracy on epoch 9/10 in train step 405 = 63.4667%

Class turkey : (3137/4476) -> accuracy: 70.0849%

Class germany: (2664/4486) -> accuracy: 59.3848%

Class russia : (3079/4511) -> accuracy: 68.2554%

Class us : (2544/4527) -> accuracy: 56.1962%

DEV accuracy on epoch 9/10 in train step 807 = 63.3278%

Class turkey : (2872/4476) -> accuracy: 64.1644%

Class germany: (2476/4486) -> accuracy: 55.1939%

Class russia : (3026/4511) -> accuracy: 67.0805%

Class us : (3025/4527) -> accuracy: 66.8213%

Epoch run time: 00:11:48

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Epoch: 10/10 ---- best so far on epoch 5: acc=64.7056%

DEV accuracy on epoch 10/10 in train step 405 = 62.9389%

Class turkey : (3172/4476) -> accuracy: 70.8668%

Class germany: (2822/4486) -> accuracy: 62.9068%

Class russia : (2868/4511) -> accuracy: 63.5779%

Class us : (2467/4527) -> accuracy: 54.4953%

DEV accuracy on epoch 10/10 in train step 807 = 62.8667%

Class turkey : (2906/4476) -> accuracy: 64.9240%

Class germany: (2520/4486) -> accuracy: 56.1748%

Class russia : (3008/4511) -> accuracy: 66.6814%

Class us : (2882/4527) -> accuracy: 63.6625%

Epoch run time: 00:11:49

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\*\*\*Training is complete. Best accuracy 64.7056% at epoch 5/10

\*\*\*Testing...

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

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

Accuracy on test set - (12886/20000) -> accuracy: 64.4300%

Class turkey : (3573/5094) -> accuracy: 70.1413%

Class germany: (3045/5032) -> accuracy: 60.5127%

Class russia : (3564/4995) -> accuracy: 71.3514%

Class us : (2704/4879) -> accuracy: 55.4212%

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

data:

DATA\_FILE\_PATH is ../input/4way\_tur\_ger\_rus\_usa25-150.txt

MINIMUM\_ROW\_LENGTH is 25

MAXIMUM\_ROW\_LENGTH is 150

COUNT\_WORD is 20

lines\_per\_class is 50000

number of classes is 4

Total data size is 200000

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 150

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=5 is 64.7055555556

testing acc 64.43

Time(HH:MM:SS): 02:01:11

Leaving function \_\_main\_\_