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

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

total PARAM 2,166,605

---done vars---

batches\_num\_train: 2025

batches\_num\_dev: 225

12:55:51

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

DEV accuracy on epoch 1/10 in train step 1012 = 50.6422%

Dev loss average for this epoch is 158.9138 and average acc is 50.6422

Class turkey : (6807/9054) -> accuracy: 75.1822%

Class germany: (4457/9053) -> accuracy: 49.2323%

Class russia : (5313/8996) -> accuracy: 59.0596%

Class us : (2812/8854) -> accuracy: 31.7597%

Class france : (3400/9043) -> accuracy: 37.5981%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 1

INFO:root: Best accuracy 50.6422% at epoch 1/10 (22789/45000)

DEV accuracy on epoch 1/10 in train step 2022 = 53.4600%

Dev loss average for this epoch is 15.5224 and average acc is 53.4600

Class turkey : (5893/9054) -> accuracy: 65.0873%

Class germany: (5148/9053) -> accuracy: 56.8651%

Class russia : (4510/8996) -> accuracy: 50.1334%

Class us : (4849/8854) -> accuracy: 54.7662%

Class france : (3657/9043) -> accuracy: 40.4401%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 1

INFO:root: Best accuracy 53.4600% at epoch 1/10 (24057/45000)

Epoch run time: 00:44:45

Train average loss for this epoch is 285.1698 and average acc is 43.6768

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13:40:37

Epoch: 2/10 ---- best so far on epoch 1: acc=53.4600%

DEV accuracy on epoch 2/10 in train step 1012 = 54.9644%

Dev loss average for this epoch is 1.6537 and average acc is 54.9644

Class turkey : (6439/9054) -> accuracy: 71.1177%

Class germany: (4549/9053) -> accuracy: 50.2485%

Class russia : (5945/8996) -> accuracy: 66.0849%

Class us : (4122/8854) -> accuracy: 46.5552%

Class france : (3679/9043) -> accuracy: 40.6834%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 2

INFO:root: Best accuracy 54.9644% at epoch 2/10 (24734/45000)

DEV accuracy on epoch 2/10 in train step 2022 = 55.6022%

Dev loss average for this epoch is 1.1947 and average acc is 55.6022

Class turkey : (5423/9054) -> accuracy: 59.8962%

Class germany: (5361/9053) -> accuracy: 59.2179%

Class russia : (5340/8996) -> accuracy: 59.3597%

Class us : (5043/8854) -> accuracy: 56.9573%

Class france : (3854/9043) -> accuracy: 42.6186%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 2

INFO:root: Best accuracy 55.6022% at epoch 2/10 (25021/45000)

Epoch run time: 00:44:36

Train average loss for this epoch is 3.4634 and average acc is 55.2032

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14:25:13

Epoch: 3/10 ---- best so far on epoch 2: acc=55.6022%

DEV accuracy on epoch 3/10 in train step 1012 = 56.1844%

Dev loss average for this epoch is 1.1761 and average acc is 56.1844

Class turkey : (6277/9054) -> accuracy: 69.3285%

Class germany: (4700/9053) -> accuracy: 51.9165%

Class russia : (5958/8996) -> accuracy: 66.2294%

Class us : (4279/8854) -> accuracy: 48.3284%

Class france : (4069/9043) -> accuracy: 44.9961%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 3

INFO:root: Best accuracy 56.1844% at epoch 3/10 (25283/45000)

DEV accuracy on epoch 3/10 in train step 2022 = 56.4711%

Dev loss average for this epoch is 1.1780 and average acc is 56.4711

Class turkey : (5807/9054) -> accuracy: 64.1374%

Class germany: (5421/9053) -> accuracy: 59.8807%

Class russia : (5085/8996) -> accuracy: 56.5251%

Class us : (5017/8854) -> accuracy: 56.6637%

Class france : (4082/9043) -> accuracy: 45.1399%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 3

INFO:root: Best accuracy 56.4711% at epoch 3/10 (25412/45000)

Epoch run time: 00:44:36

Train average loss for this epoch is 1.1483 and average acc is 57.8872

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15:09:50

Epoch: 4/10 ---- best so far on epoch 3: acc=56.4711%

DEV accuracy on epoch 4/10 in train step 1012 = 56.6867%

Dev loss average for this epoch is 1.1691 and average acc is 56.6867

Class turkey : (6147/9054) -> accuracy: 67.8926%

Class germany: (4704/9053) -> accuracy: 51.9607%

Class russia : (6076/8996) -> accuracy: 67.5411%

Class us : (4192/8854) -> accuracy: 47.3458%

Class france : (4390/9043) -> accuracy: 48.5458%

INFO:root: Saved model ../model\_1535374548/model.ckpt at epoch 4

INFO:root: Best accuracy 56.6867% at epoch 4/10 (25509/45000)

DEV accuracy on epoch 4/10 in train step 2022 = 56.4978%

Dev loss average for this epoch is 1.1895 and average acc is 56.4978

Class turkey : (6230/9054) -> accuracy: 68.8094%

Class germany: (5490/9053) -> accuracy: 60.6429%

Class russia : (4940/8996) -> accuracy: 54.9133%

Class us : (5135/8854) -> accuracy: 57.9964%

Class france : (3629/9043) -> accuracy: 40.1305%

Epoch run time: 00:44:35

Train average loss for this epoch is 1.0975 and average acc is 60.6437

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15:54:26

Epoch: 5/10 ---- best so far on epoch 4: acc=56.6867%

DEV accuracy on epoch 5/10 in train step 1012 = 56.5600%

Dev loss average for this epoch is 1.1806 and average acc is 56.5600

Class turkey : (6023/9054) -> accuracy: 66.5231%

Class germany: (4584/9053) -> accuracy: 50.6351%

Class russia : (5661/8996) -> accuracy: 62.9280%

Class us : (4685/8854) -> accuracy: 52.9139%

Class france : (4499/9043) -> accuracy: 49.7512%

DEV accuracy on epoch 5/10 in train step 2022 = 46.3444%

Dev loss average for this epoch is 1.3882 and average acc is 46.3444

Class turkey : (4678/9054) -> accuracy: 51.6678%

Class germany: (7551/9053) -> accuracy: 83.4088%

Class russia : (3177/8996) -> accuracy: 35.3157%

Class us : (3007/8854) -> accuracy: 33.9621%

Class france : (2442/9043) -> accuracy: 27.0043%

Epoch run time: 00:44:32

Train average loss for this epoch is 1.0541 and average acc is 63.0852

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16:38:58

Epoch: 6/10 ---- best so far on epoch 4: acc=56.6867%

DEV accuracy on epoch 6/10 in train step 1012 = 56.3444%

Dev loss average for this epoch is 1.2010 and average acc is 56.3444

Class turkey : (5628/9054) -> accuracy: 62.1604%

Class germany: (4533/9053) -> accuracy: 50.0718%

Class russia : (5861/8996) -> accuracy: 65.1512%

Class us : (5058/8854) -> accuracy: 57.1267%

Class france : (4275/9043) -> accuracy: 47.2741%

DEV accuracy on epoch 6/10 in train step 2022 = 56.2600%

Dev loss average for this epoch is 1.1999 and average acc is 56.2600

Class turkey : (6018/9054) -> accuracy: 66.4679%

Class germany: (4881/9053) -> accuracy: 53.9158%

Class russia : (5104/8996) -> accuracy: 56.7363%

Class us : (4821/8854) -> accuracy: 54.4500%

Class france : (4493/9043) -> accuracy: 49.6848%

Epoch run time: 00:44:32

Train average loss for this epoch is 1.0237 and average acc is 64.9410

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17:23:30

Epoch: 7/10 ---- best so far on epoch 4: acc=56.6867%

DEV accuracy on epoch 7/10 in train step 1012 = 55.9644%

Dev loss average for this epoch is 1.2170 and average acc is 55.9644

Class turkey : (5712/9054) -> accuracy: 63.0881%

Class germany: (4495/9053) -> accuracy: 49.6520%

Class russia : (5539/8996) -> accuracy: 61.5718%

Class us : (4745/8854) -> accuracy: 53.5916%

Class france : (4693/9043) -> accuracy: 51.8965%

DEV accuracy on epoch 7/10 in train step 2022 = 56.2911%

Dev loss average for this epoch is 1.2234 and average acc is 56.2911

Class turkey : (6024/9054) -> accuracy: 66.5341%

Class germany: (5014/9053) -> accuracy: 55.3850%

Class russia : (5417/8996) -> accuracy: 60.2157%

Class us : (4776/8854) -> accuracy: 53.9417%

Class france : (4100/9043) -> accuracy: 45.3389%

Epoch run time: 00:44:32

Train average loss for this epoch is 0.9780 and average acc is 67.3351

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18:08:03

Epoch: 8/10 ---- best so far on epoch 4: acc=56.6867%

DEV accuracy on epoch 8/10 in train step 1012 = 55.9156%

Dev loss average for this epoch is 1.2416 and average acc is 55.9156

Class turkey : (5920/9054) -> accuracy: 65.3855%

Class germany: (4603/9053) -> accuracy: 50.8450%

Class russia : (5460/8996) -> accuracy: 60.6936%

Class us : (4820/8854) -> accuracy: 54.4387%

Class france : (4359/9043) -> accuracy: 48.2030%

DEV accuracy on epoch 8/10 in train step 2022 = 55.4378%

Dev loss average for this epoch is 1.2433 and average acc is 55.4378

Class turkey : (5886/9054) -> accuracy: 65.0099%

Class germany: (4683/9053) -> accuracy: 51.7287%

Class russia : (5524/8996) -> accuracy: 61.4051%

Class us : (4811/8854) -> accuracy: 54.3370%

Class france : (4043/9043) -> accuracy: 44.7086%

Epoch run time: 00:44:32

Train average loss for this epoch is 0.9369 and average acc is 69.5684

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18:52:36

Epoch: 9/10 ---- best so far on epoch 4: acc=56.6867%

DEV accuracy on epoch 9/10 in train step 1012 = 55.4444%

Dev loss average for this epoch is 1.2731 and average acc is 55.4444

Class turkey : (6051/9054) -> accuracy: 66.8323%

Class germany: (4764/9053) -> accuracy: 52.6234%

Class russia : (5479/8996) -> accuracy: 60.9048%

Class us : (4413/8854) -> accuracy: 49.8419%

Class france : (4243/9043) -> accuracy: 46.9203%

DEV accuracy on epoch 9/10 in train step 2022 = 55.5667%

Dev loss average for this epoch is 1.2537 and average acc is 55.5667

Class turkey : (5932/9054) -> accuracy: 65.5180%

Class germany: (5120/9053) -> accuracy: 56.5558%

Class russia : (5182/8996) -> accuracy: 57.6034%

Class us : (4545/8854) -> accuracy: 51.3327%

Class france : (4226/9043) -> accuracy: 46.7323%

Epoch run time: 00:44:32

Train average loss for this epoch is 0.9083 and average acc is 71.0267

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19:37:09

Epoch: 10/10 ---- best so far on epoch 4: acc=56.6867%

DEV accuracy on epoch 10/10 in train step 1012 = 55.3844%

Dev loss average for this epoch is 1.3215 and average acc is 55.3844

Class turkey : (6189/9054) -> accuracy: 68.3565%

Class germany: (4733/9053) -> accuracy: 52.2810%

Class russia : (5735/8996) -> accuracy: 63.7506%

Class us : (4338/8854) -> accuracy: 48.9948%

Class france : (3928/9043) -> accuracy: 43.4369%

DEV accuracy on epoch 10/10 in train step 2022 = 55.5733%

Dev loss average for this epoch is 1.2735 and average acc is 55.5733

Class turkey : (5805/9054) -> accuracy: 64.1153%

Class germany: (4873/9053) -> accuracy: 53.8275%

Class russia : (5310/8996) -> accuracy: 59.0262%

Class us : (4564/8854) -> accuracy: 51.5473%

Class france : (4456/9043) -> accuracy: 49.2757%

Epoch run time: 00:44:32

Train average loss for this epoch is 0.8679 and average acc is 73.0304

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\*\*\*Training is complete. Best accuracy 56.6867% at epoch 4/10

\*\*\*Testing...

INFO:tensorflow:Restoring parameters from ../model\_1535374548/model.ckpt

INFO:tensorflow:Restoring parameters from ../model\_1535374548/model.ckpt

Test loss average for this epoch is 1.1650 and average acc is 56.8880

Accuracy on test set - (28444/50000) -> accuracy: 56.8880%

Class turkey : (6653/9982) -> accuracy: 66.6500%

Class germany: (5197/9919) -> accuracy: 52.3944%

Class russia : (6849/10119) -> accuracy: 67.6846%

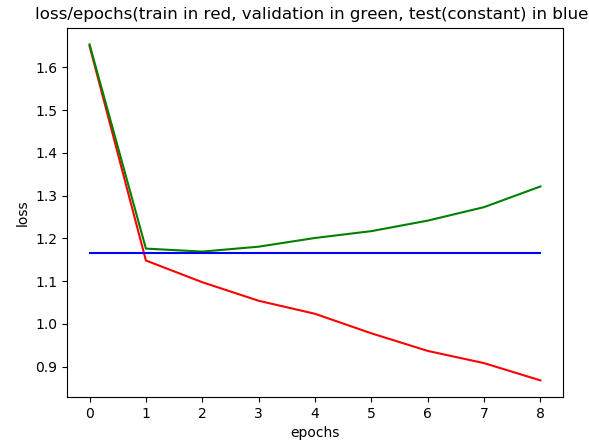
Class us : (4741/9959) -> accuracy: 47.6052%

Class france : (5004/10021) -> accuracy: 49.9351%

[3.4634156754281786, 1.1482763037858186, 1.097524800889286, 1.0541399912775298, 1.0236733400674514, 0.9780322897287063, 0.9368535498042165, 0.9082751628204628, 0.8679082565543093]

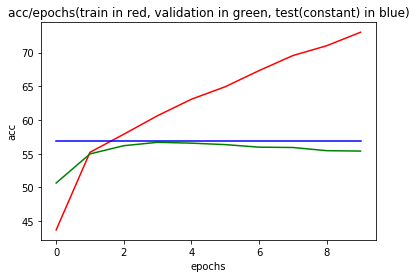
[1.653672414355808, 1.1761430263519288, 1.1691170700391134, 1.1806478842099508, 1.200988958146837, 1.2169725720087687, 1.2415521007113988, 1.2731423574023777, 1.3215072202682494]

[1.165000849723816, 1.165000849723816, 1.165000849723816, 1.165000849723816, 1.165000849723816, 1.165000849723816, 1.165000849723816, 1.165000849723816, 1.165000849723816]

 [43.676790049782504, 55.20320985935352, 57.88716043366327, 60.64370373590493, 63.085185161343325, 64.94098767675, 67.33506169142547, 69.56839509363527, 71.02666671776477, 73.0303704149929]

[50.64222211307949, 54.96444443861643, 56.18444446722667, 56.68666678004794, 56.559999929534065, 56.34444452656639, 55.96444439888001, 55.91555546389686, 55.44444451067183, 55.3844443294737]

[56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152, 56.88800010681152]

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

GRU\_HIDDEN\_UNITS 300

CELL\_TYPE GRU

optimizer is adamOptimizer - learn rate: 0.001

model:

USE\_TMP\_FOLDER False

mdl\_path ../model\_1535374548/model.ckpt

results:

best training acc at epoch=4 is 56.6867

testing acc 56.8880

Time(HH:MM:SS): 07:29:43

Leaving function \_\_main\_\_