

```
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', Ten
sorShape([Dimension(400), Dimension(200)]), 80000)
(u'bidirectional_rnn/fw/multi_rnn_cell/cell_0/gru_cell/gates/bias:0', Tenso
rShape([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', T
ensorShape([Dimension(100)]), 100)
(u'bidirectional_rnn/fw/multi_rnn_cell/cell_1/gru_cell/gates/kernel:0', Ten
sorShape([Dimension(200), Dimension(200)]), 40000)
(u'bidirectional_rnn/fw/multi_rnn_cell/cell_1/gru_cell/gates/bias:0', Tenso
rShape([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', T
ensorShape([Dimension(100)]), 100)
(u'bidirectional_rnn/bw/multi_rnn_cell/cell_0/gru_cell/gates/kernel:0', Ten
sorShape([Dimension(400), Dimension(200)]), 80000)
(u'bidirectional_rnn/bw/multi_rnn_cell/cell_0/gru_cell/gates/bias:0', Tenso
rShape([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', T
ensorShape([Dimension(100)]), 100)
(u'bidirectional_rnn/bw/multi_rnn_cell/cell_1/gru_cell/gates/kernel:0', Ten
sorShape([Dimension(200), Dimension(200)]), 40000)
(u'bidirectional_rnn/bw/multi_rnn_cell/cell_1/gru_cell/gates/bias:0', Tenso
rShape([Dimension(200)]), 200)
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(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', T
ensorShape([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
#####
#####
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

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

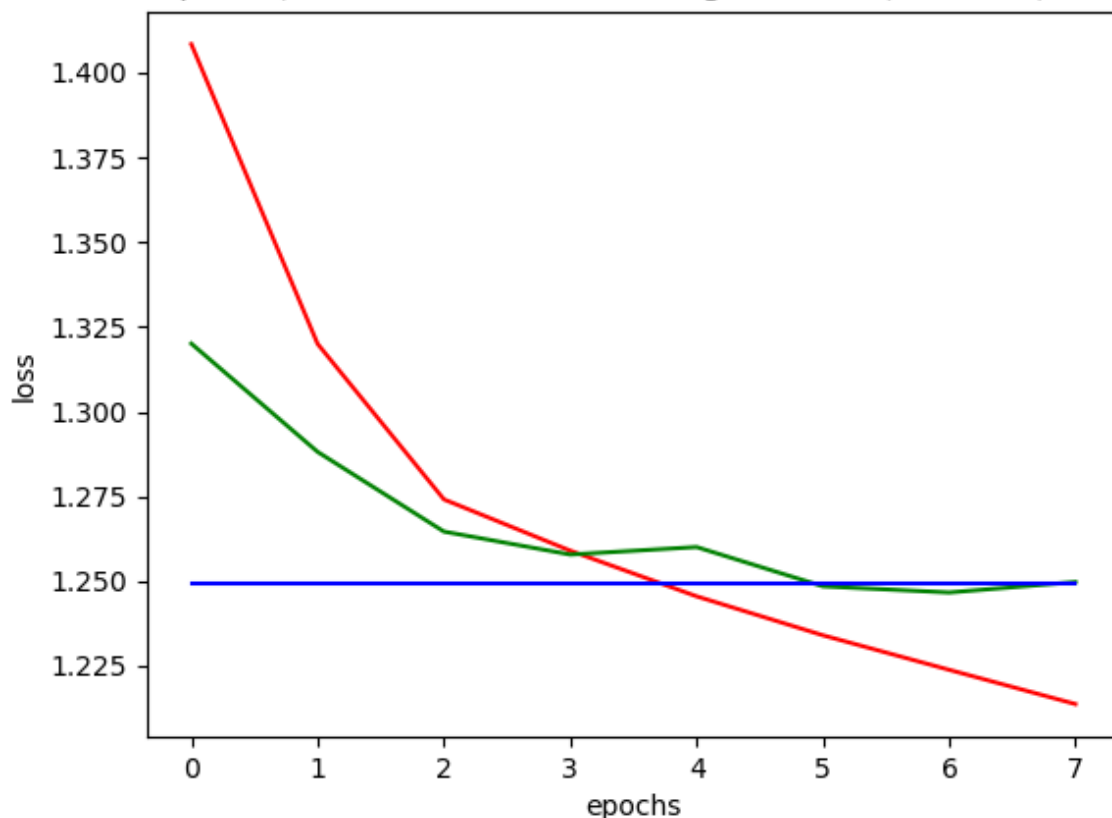
Class france : (4658/9923) -> accuracy: 46.9414%

[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]

loss/epochs(train in red, validation in green, test(constant) in blue)

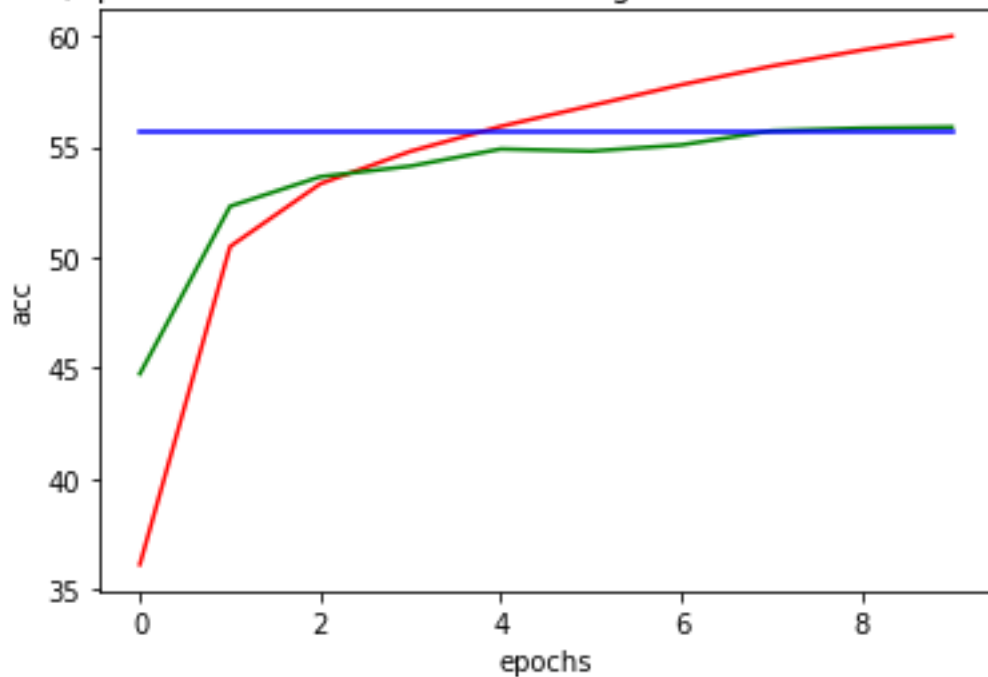


[36.105237144373156, 50.48690688586518, 53.32534583248639, 54.794713489622936, 55.92218385089056, 56.857707466297, 57.80212436857902, 58.64624497683152, 59.368577081224196, 60.00123526974629]

[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]

acc/epochs(train in red, validation in green, test(constant) in blue)



End s

ummary -----

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:


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best training acc at epoch=7 is 55.9754
testing acc 55.7160
Time(HH:MM:SS): 02:55:09
Leaving function __main__
```