final_예측_100만개_사본.ipynb

파일 수정 보기 삽입 런타임 도구 도움말 모든 변경사항이 저장됨

+ 코드 + 텍스트

```
        valid_length= valid_length
11
12      label = label.long().to(device)
13      out = model(token_ids, valid_length, segment_ids)
14      loss = loss_fn(out, label)
15      loss.backward()
16      torch.nn.utils.clip_grad_norm_(model.parameters(), max_grad_norm)
17      optimizer.step()
18      scheduler.step()  # Update learning rate schedule
19      train_acc += calc_accuracy(out, label)
20      if batch_id % log_interval == 0:
21          print("epoch {} batch id {} loss {} train acc {}".format(e+1, batch_id+1, loss.data.cpu().numpy(), train_acc / (batch_id+1)))
22  print("epoch {} train acc {}".format(e+1, train_acc / (batch_id+1)))
23
24
25  model.eval()
26  for batch_id, (token_ids, valid_length, segment_ids, label) in enumerate(tqdm_notebook(test_dataloader_3)): # 여기 꼭 수정!!!
27      # 휴일 데이터가 fold 0 이면 test_dataloader_0 로 입력하기
28
29      token_ids = token_ids.long().to(device)
30      segment_ids = segment_ids.long().to(device)
31      valid_length= valid_length
32      label = label.long().to(device)
33      out = model(token_ids, valid_length, segment_ids)
34      test_acc += calc_accuracy(out, label)
35
36  print("epoch {} test acc {}".format(e+1, test_acc / (batch_id+1)))
37
38  model_save_name = F'final_fulllabel_fold3_epoch{e+1}.bert' # final_nodup_fold#_epoch 로 입력하기
39  path = F"/content/MyDrive/MyDrive/test/{model_save_name}" # epoch 마다 저장
40  torch.save(model.state_dict(), path)
41  print("모델저장")
```

```
100%                                    12502/12502 [1:19:42<00:00, 3.15it/s]
epoch 1 batch id 1 loss 5.494931697845459 train acc 0.0
epoch 1 batch id 201 loss 5.342093037200928 train acc 0.026041666666666668
epoch 1 batch id 401 loss 4.8951096534729 train acc 0.07422849127182045
epoch 1 batch id 601 loss 4.682123184204102 train acc 0.10968698003327787
epoch 1 batch id 801 loss 3.9371495246887207 train acc 0.13746488764044945
epoch 1 batch id 1001 loss 3.465524673461914 train acc 0.16833166833166832
epoch 1 batch id 1201 loss 2.5346829891204834 train acc 0.21033253538717736
epoch 1 batch id 1401 loss 2.7899091243743896 train acc 0.2605616523911492
epoch 1 batch id 1601 loss 2.346713066101074 train acc 0.30740552779512803
```

Python 3 Google Compute Engine 백엔드 (GPU)

오전 10:36 이후 리소스 표시 중

시스템 RAM   GPU RAM   디스크

세션 관리   런타임 유형 변경

7시간 46분 30초   오전 6:22에 완료됨

100%

12502/12502 [1:19:42<00:00, 3.15it/s]

epoch 1 batch id 1 loss 5.494931697845459 train acc 0.0

epoch 1 batch id 201 loss 5.342092037200928 train acc 0.026041666666666668

epoch 1 batch id 401 loss 4.8951096534729 train acc 0.07422849127182045

epoch 1 batch id 601 loss 4.682123184204102 train acc 0.10968698003327787

epoch 1 batch id 801 loss 3.9371495246887207 train acc 0.13746488764044945

epoch 1 batch id 1001 loss 3.465524673461914 train acc 0.16833166833166832

epoch 1 batch id 1201 loss 2.5346829891204834 train acc 0.21033253538717736

epoch 1 batch id 1401 loss 2.7899091243743896 train acc 0.2605616523911492

epoch 1 batch id 1601 loss 2.346713066101074 train acc 0.30740552779512803

epoch 1 batch id 1801 loss 2.045183181762953 train acc 0.3469600222098834

epoch 1 batch id 2001 loss 1.6762933731079102 train acc 0.382238568215892

epoch 1 batch id 2201 loss 1.238063931465149 train acc 0.4132263573375738

epoch 1 batch id 2401 loss 1.1797740459442139 train acc 0.4412679612661391

epoch 1 batch id 2601 loss 1.4982941150665283 train acc 0.46629901960784315

epoch 1 batch id 2801 loss 0.8838955163955688 train acc 0.4892616476258479

epoch 1 batch id 3001 loss 0.9646575450897217 train acc 0.5096009663445518

epoch 1 batch id 3201 loss 1.112831106185913 train acc 0.528116213683224

epoch 1 batch id 3401 loss 1.313480138786865 train acc 0.5447938106439283

epoch 1 batch id 3601 loss 0.9397534728050232 train acc 0.5601048319911136

epoch 1 batch id 3801 loss 0.8689681887626648 train acc 0.5744006511444357

epoch 1 batch id 4001 loss 0.9038950204849243 train acc 0.5874507935516121

epoch 1 batch id 4201 loss 0.5101684927940369 train acc 0.5996340157105451

epoch 1 batch id 4401 loss 0.4757214784621924 train acc 0.6109477959554647

epoch 1 batch id 4601 loss 0.8103581666946411 train acc 0.6211523310149968

epoch 1 batch id 4801 loss 0.5565654635429382 train acc 0.6309720631118517

epoch 1 batch id 5001 loss 0.5190417170524597 train acc 0.6399563837232554

epoch 1 batch id 5201 loss 0.5700773596763611 train acc 0.6483759132859066

epoch 1 batch id 5401 loss 0.6303935050964355 train acc 0.656333896500648

epoch 1 batch id 5601 loss 0.6228092312812805 train acc 0.663483641314051

epoch 1 batch id 5801 loss 0.6259174942970276 train acc 0.6703316238579555

```
epoch 1 batch id 6001 loss 0.5193609595298767 train acc 0.6771111064822529
epoch 1 batch id 6201 loss 0.45781320333480835 train acc 0.6832466537655217
epoch 1 batch id 6401 loss 0.42756837606430054 train acc 0.6891330456178723
epoch 1 batch id 6601 loss 0.5520379543304443 train acc 0.6947905620360552
epoch 1 batch id 6801 loss 0.5151985287666321 train acc 0.7001520916041759
epoch 1 batch id 7001 loss 0.5762659311294556 train acc 0.7050823096700471
epoch 1 batch id 7201 loss 0.9006703495979309 train acc 0.7098580058325232
epoch 1 batch id 7401 loss 0.6221035718917847 train acc 0.7144748175922173
epoch 1 batch id 7601 loss 0.5259360074996948 train acc 0.7188157808183134
epoch 1 batch id 7801 loss 0.5446884036064148 train acc 0.7230142770157673
epoch 1 batch id 8001 loss 0.3025799095630646 train acc 0.7269696756655418
epoch 1 batch id 8201 loss 0.28734806180000305 train acc 0.7309436349225704
epoch 1 batch id 8401 loss 0.20966795086860657 train acc 0.7346037674086419
epoch 1 batch id 8601 loss 0.48462817072868347 train acc 0.7381790634809906
epoch 1 batch id 8801 loss 0.3632485568523407 train acc 0.7414675889103511
epoch 1 batch id 9001 loss 0.33804646134376526 train acc 0.7446134457282524
epoch 1 batch id 9201 loss 0.33143380284309387 train acc 0.7476972611672644
epoch 1 batch id 9401 loss 0.3589836061000824 train acc 0.7506731331773215
epoch 1 batch id 9601 loss 0.22342681884765625 train acc 0.7535640818664723
epoch 1 batch id 9801 loss 0.6572713851928711 train acc 0.7563195082134476
epoch 1 batch id 10001 loss 0.6185892820358276 train acc 0.7589819143085691
epoch 1 batch id 10201 loss 0.48793524503707886 train acc 0.7615506445446525
epoch 1 batch id 10401 loss 0.7527152299880981 train acc 0.7640055643688107
epoch 1 batch id 10601 loss 0.5011845827102661 train acc 0.7664341807376662
epoch 1 batch id 10801 loss 0.23979470133781433 train acc 0.7688075756874363
epoch 1 batch id 11001 loss 0.7145789265632629 train acc 0.77095548131988
epoch 1 batch id 11201 loss 0.47382593154907227 train acc 0.7731884987947505
epoch 1 batch id 11401 loss 0.43247371912002563 train acc 0.7753322077010788
epoch 1 batch id 11601 loss 0.5079612135887146 train acc 0.7774114300491337
epoch 1 batch id 11801 loss 0.41737112402915955 train acc 0.7795274235234302
epoch 1 batch id 12001 loss 0.39325061440467834 train acc 0.7814492021498208
epoch 1 batch id 12201 loss 0.5268212556838989 train acc 0.7833771309728711
epoch 1 batch id 12401 loss 0.4169631004333496 train acc 0.7851937343762599
epoch 1 train acc 0.7861375332120775

100%
3126/3126 [06:45<00:00, 7.77it/s]
epoch 1 test acc 0.9010511874295464
모델저장

100%
12502/12502 [1:19:40<00:00, 3.15it/s]
epoch 2 batch id 1 loss 0.23720072209835052 train acc 0.953125
epoch 2 batch id 201 loss 0.27974191308021545 train acc 0.8962220149253731
epoch 2 batch id 401 loss 0.688218832159912 train acc 0.8979114713216958
epoch 2 batch id 601 loss 0.9598828554153442 train acc 0.8986584858569051
epoch 2 batch id 801 loss 0.39407050609588623 train acc 0.897979088639201
epoch 2 batch id 1001 loss 0.4702474772930145 train acc 0.8978365384615384
epoch 2 batch id 1201 loss 0.34230631589889526 train acc 0.8989123646960866
epoch 2 batch id 1401 loss 0.698562502861023 train acc 0.8991456995003569
epoch 2 batch id 1601 loss 0.42811524868011475 train acc 0.8995452061211743
epoch 2 batch id 1801 loss 0.2601921856403351 train acc 0.8997258467518046
```

```
epoch 2 batch id 2001 loss 0.3758564591407776 train acc 0.9002686156921539
epoch 2 batch id 2201 loss 0.454094797372818 train acc 0.9000454338936847
epoch 2 batch id 2401 loss 0.3511868417263031 train acc 0.9000546647230321
epoch 2 batch id 2601 loss 0.31956058740615845 train acc 0.9004108996539792
epoch 2 batch id 2801 loss 0.17928950488567352 train acc 0.900772045697965
epoch 2 batch id 3001 loss 0.27142655849456787 train acc 0.9011215011662779
epoch 2 batch id 3201 loss 0.5805705785751343 train acc 0.901256443298969
epoch 2 batch id 3401 loss 0.5714731216430664 train acc 0.9015638782710967
epoch 2 batch id 3601 loss 0.3649979829788208 train acc 0.9019065884476535
epoch 2 batch id 3801 loss 0.2873939275741577 train acc 0.902406439094975
epoch 2 batch id 4001 loss 0.48539862036705017 train acc 0.9025634216445888
epoch 2 batch id 4201 loss 0.2630419433116913 train acc 0.9030364794096644
epoch 2 batch id 4401 loss 0.31193026900291443 train acc 0.9033635821404227
epoch 2 batch id 4601 loss 0.5319463610649109 train acc 0.9035535753097153
epoch 2 batch id 4801 loss 0.3681252598762512 train acc 0.9038839564674026
epoch 2 batch id 5001 loss 0.3851088881492615 train acc 0.9038942211557689
epoch 2 batch id 5201 loss 0.34622713923454285 train acc 0.9039788021534321
epoch 2 batch id 5401 loss 0.3514399528503418 train acc 0.904175731346047
epoch 2 batch id 5601 loss 0.16634565591812134 train acc 0.9043530173183361
epoch 2 batch id 5801 loss 0.3858106732368469 train acc 0.9043834037234959
epoch 2 batch id 6001 loss 0.2561275064945221 train acc 0.9047190051658057
epoch 2 batch id 6201 loss 0.30317714810371 train acc 0.9048893323657474
epoch 2 batch id 6401 loss 0.2383526861667633 train acc 0.9050612209029839
epoch 2 batch id 6601 loss 0.4139958918094635 train acc 0.9051942887441297
epoch 2 batch id 6801 loss 0.3477776348590851 train acc 0.905379264078812
epoch 2 batch id 7001 loss 0.3156578838825226 train acc 0.9053952113983716
epoch 2 batch id 7201 loss 0.6173644661903381 train acc 0.9055014060547146
epoch 2 batch id 7401 loss 0.4822993576526642 train acc 0.9056757532765842
epoch 2 batch id 7601 loss 0.45089849829673767 train acc 0.9058039238258124
epoch 2 batch id 7801 loss 0.46375516057014465 train acc 0.9059695872324061
epoch 2 batch id 8001 loss 0.2817458510398865 train acc 0.906214848143982
epoch 2 batch id 8201 loss 0.13008330762386322 train acc 0.9064710096329716
epoch 2 batch id 8401 loss 0.17363743484020233 train acc 0.9067000952267588
epoch 2 batch id 8601 loss 0.281683087348938 train acc 0.9069221602139286
epoch 2 batch id 8801 loss 0.26370805501937866 train acc 0.9070861975911828
epoch 2 batch id 9001 loss 0.21877889335155487 train acc 0.907215170536607
epoch 2 batch id 9201 loss 0.26317596435546875 train acc 0.9073283474622323
epoch 2 batch id 9401 loss 0.33176732063293457 train acc 0.9075729975534518
epoch 2 batch id 9601 loss 0.12267749756574631 train acc 0.9077016717008645
epoch 2 batch id 9801 loss 0.3772616982460022 train acc 0.9078649500051015
epoch 2 batch id 10001 loss 0.5384697914123535 train acc 0.9080201354864513
epoch 2 batch id 10201 loss 0.2997841238975525 train acc 0.9081232844819135
epoch 2 batch id 10401 loss 0.37900248169898987 train acc 0.9082194620709547
epoch 2 batch id 10601 loss 0.4366147816181183 train acc 0.9084122370531083
epoch 2 batch id 10801 loss 0.1637580841779709 train acc 0.9085891931302658
epoch 2 batch id 11001 loss 0.5643157362937927 train acc 0.90863756703936
epoch 2 batch id 11201 loss 0.3424374759197235 train acc 0.9087972056066422
epoch 2 batch id 11401 loss 0.27789464592933655 train acc 0.9089252039294798
epoch 2 batch id 11601 loss 0.3586274981498718 train acc 0.9090851542970434
epoch 2 batch id 11801 loss 0.30598804354667664 train acc 0.9093111812558258
epoch 2 batch id 12001 loss 0.26771363615989685 train acc 0.9094359324222981
epoch 2 batch id 12201 loss 0.4544285237789154 train acc 0.9095207360052455
```

```
epoch 2 batch id 12401 loss 0.28023049235343933 train acc 0.9096141440206434
epoch 2 train acc 0.909712489479944

100%
3126/3126 [06:46<00:00, 7.88it/s]
epoch 2 test acc 0.9155617821344788
모델저장

100%
12502/12502 [1:19:46<00:00, 3.14it/s]
epoch 3 batch id 1 loss 0.2114987075328827 train acc 0.953125
epoch 3 batch id 201 loss 0.27998459339141846 train acc 0.9160447761194029
epoch 3 batch id 401 loss 0.715927004814148 train acc 0.9182902119700748
epoch 3 batch id 601 loss 0.6792928576469421 train acc 0.9189371880199667
epoch 3 batch id 801 loss 0.36856144666671753 train acc 0.9181686953807741
epoch 3 batch id 1001 loss 0.3919636607170105 train acc 0.9179414335664335
epoch 3 batch id 1201 loss 0.22198183834552765 train acc 0.9184924021648626
epoch 3 batch id 1401 loss 0.5686742067337036 train acc 0.9187522305496074
epoch 3 batch id 1601 loss 0.36287596821784973 train acc 0.9189373828856965
epoch 3 batch id 1801 loss 0.17447000741958618 train acc 0.9194891726818434
epoch 3 batch id 2001 loss 0.37980303168296814 train acc 0.9198213393303348
epoch 3 batch id 2201 loss 0.40085768699645996 train acc 0.9198872671512949
epoch 3 batch id 2401 loss 0.34399884939193726 train acc 0.9198576114119117
epoch 3 batch id 2601 loss 0.20552821457386017 train acc 0.9200547866205305
epoch 3 batch id 2801 loss 0.13308978080749512 train acc 0.9201122367011781
epoch 3 batch id 3001 loss 0.17688962817192078 train acc 0.9205264911696102
epoch 3 batch id 3201 loss 0.5177726745605469 train acc 0.9206644407997501
epoch 3 batch id 3401 loss 0.5055012702941895 train acc 0.9209056159952955
epoch 3 batch id 3601 loss 0.25269538164138794 train acc 0.9210766106637045
epoch 3 batch id 3801 loss 0.28974586725234985 train acc 0.9213858195211786
epoch 3 batch id 4001 loss 0.31105732917785645 train acc 0.921457135716071
epoch 3 batch id 4201 loss 0.24215365946292877 train acc 0.9218154903594382
epoch 3 batch id 4401 loss 0.2546021044254303 train acc 0.9220205635082935
epoch 3 batch id 4601 loss 0.40359923243522644 train acc 0.9219938600304282
epoch 3 batch id 4801 loss 0.3130491375923157 train acc 0.9222232347427619
epoch 3 batch id 5001 loss 0.3923184871673584 train acc 0.9221093281343731
epoch 3 batch id 5201 loss 0.33514514565467834 train acc 0.9221664103057104
epoch 3 batch id 5401 loss 0.2743801176548004 train acc 0.9222048000370302
epoch 3 batch id 5601 loss 0.12784473598003387 train acc 0.922296241742546
epoch 3 batch id 5801 loss 0.23656843602657318 train acc 0.9222305421479056
epoch 3 batch id 6001 loss 0.20747162401676178 train acc 0.9224295950674888
epoch 3 batch id 6201 loss 0.2205542027950287 train acc 0.9225704523463958
epoch 3 batch id 6401 loss 0.1696304976940155 train acc 0.9226097484768006
epoch 3 batch id 6601 loss 0.29602813720703125 train acc 0.9226655999091047
epoch 3 batch id 6801 loss 0.24034011363983154 train acc 0.9228031723275989
epoch 3 batch id 7001 loss 0.18443354964256287 train acc 0.9226806884730753
epoch 3 batch id 7201 loss 0.561286985874176 train acc 0.9227277461463685
epoch 3 batch id 7401 loss 0.47708040475845337 train acc 0.9228039285231725
epoch 3 batch id 7601 loss 0.24592678248882294 train acc 0.9228370444678332
epoch 3 batch id 7801 loss 0.4343627393245697 train acc 0.9229345596718369
epoch 3 batch id 8001 loss 0.17283201217651367 train acc 0.9230799275090613
epoch 3 batch id 8201 loss 0.13492630422115326 train acc 0.9232410681624192
```

```
epoch 3 batch id 8401 loss 0.1711474508047104 train acc 0.9233889566718247
epoch 3 batch id 8601 loss 0.2291867882013321 train acc 0.9235426839902336
epoch 3 batch id 8801 loss 0.18623222410678864 train acc 0.9236343881377116
epoch 3 batch id 9001 loss 0.11393172293901443 train acc 0.9236612598600156
epoch 3 batch id 9201 loss 0.20349085330963135 train acc 0.9237294179980436
epoch 3 batch id 9401 loss 0.3021625280380249 train acc 0.923882765131369
epoch 3 batch id 9601 loss 0.059278905391693115 train acc 0.9239434694302677
epoch 3 batch id 9801 loss 0.37280452251434326 train acc 0.9240096673808795
epoch 3 batch id 10001 loss 0.4348798394203186 train acc 0.9241185256474352
epoch 3 batch id 10201 loss 0.379436731338501 train acc 0.9241771640035291
epoch 3 batch id 10401 loss 0.3848872482776642 train acc 0.9242530766272474
epoch 3 batch id 10601 loss 0.3085430860519409 train acc 0.9244057164418451
epoch 3 batch id 10801 loss 0.1440676599740982 train acc 0.9245613832052588
epoch 3 batch id 11001 loss 0.3912403881549835 train acc 0.9246275906735751
epoch 3 batch id 11201 loss 0.23314496874809265 train acc 0.924731887777877
epoch 3 batch id 11401 loss 0.24550549685955048 train acc 0.9248599355319709
epoch 3 batch id 11601 loss 0.2638154923915863 train acc 0.9249822213602276
epoch 3 batch id 11801 loss 0.3525872230529785 train acc 0.9251705363952207
epoch 3 batch id 12001 loss 0.2929629981517792 train acc 0.9253017977668527
epoch 3 batch id 12201 loss 0.31180936098098755 train acc 0.9253583210392591
epoch 3 batch id 12401 loss 0.26071441173553467 train acc 0.9254306608338038
epoch 3 train acc 0.9255164825801785

100%
3126/3126 [06:45<00:00, 7.83it/s]
epoch 3 test acc 0.920589697011242
모델저장

100%
12502/12502 [1:19:52<00:00, 3.15it/s]
epoch 4 batch id 1 loss 0.115450419485569 train acc 0.953125
epoch 4 batch id 201 loss 0.20285430550575256 train acc 0.9306592039800995
epoch 4 batch id 401 loss 0.5288875102996826 train acc 0.9325124688279302
epoch 4 batch id 601 loss 0.5514524579048157 train acc 0.9334702579034941
epoch 4 batch id 801 loss 0.24581606686115265 train acc 0.9325842696629213
epoch 4 batch id 1001 loss 0.3732545077800751 train acc 0.9319898851148851
epoch 4 batch id 1201 loss 0.21114793419837952 train acc 0.9325692131557036
epoch 4 batch id 1401 loss 0.5955616235733032 train acc 0.9325704853675946
epoch 4 batch id 1601 loss 0.3036454916000366 train acc 0.9327275921299188
epoch 4 batch id 1801 loss 0.13570114970207214 train acc 0.9329625902276513
epoch 4 batch id 2001 loss 0.3240165710449219 train acc 0.9332286981509246
epoch 4 batch id 2201 loss 0.3263603150844574 train acc 0.9332050772376193
epoch 4 batch id 2401 loss 0.28641659021377563 train acc 0.9331203144523116
epoch 4 batch id 2601 loss 0.20638419687747955 train acc 0.9333429450211457
epoch 4 batch id 2801 loss 0.03566909581422806 train acc 0.9334277936451267
epoch 4 batch id 3001 loss 0.10780699551105499 train acc 0.9337095968010664
epoch 4 batch id 3201 loss 0.3423212170600891 train acc 0.9337706966572946
epoch 4 batch id 3401 loss 0.3951684236526489 train acc 0.9339532490443987
epoch 4 batch id 3601 loss 0.2621217668056488 train acc 0.934050437378506
epoch 4 batch id 3801 loss 0.18556195497512817 train acc 0.9343388253091292
epoch 4 batch id 4001 loss 0.22663500905036926 train acc 0.9345007498125468
epoch 4 batch id 4201 loss 0.19792555272579193 train acc 0.9346993275410617
```

```
epoch 4 batch id 4401 loss 0.26689648628234863 train acc 0.9348727561917746
epoch 4 batch id 4601 loss 0.3751400113105774 train acc 0.9349665833514453
epoch 4 batch id 4801 loss 0.28677523136138916 train acc 0.9351827744219954
epoch 4 batch id 5001 loss 0.2808234989643097 train acc 0.9352379524095181
epoch 4 batch id 5201 loss 0.23247762024402618 train acc 0.9353039079023264
epoch 4 batch id 5401 loss 0.25378888845443726 train acc 0.9353534067765229
epoch 4 batch id 5601 loss 0.07129538804292679 train acc 0.9354551642563828
epoch 4 batch id 5801 loss 0.21256615221500397 train acc 0.9353909886226512
epoch 4 batch id 6001 loss 0.05944308638572693 train acc 0.9355029370104982
epoch 4 batch id 6201 loss 0.17620854079723358 train acc 0.9356630986937591
epoch 4 batch id 6401 loss 0.1111145168542862 train acc 0.9356838775191376
epoch 4 batch id 6601 loss 0.3046134412288666 train acc 0.9356820936221785
epoch 4 batch id 6801 loss 0.22744041681289673 train acc 0.935753933245111
epoch 4 batch id 7001 loss 0.10931897163391113 train acc 0.9357123089558634
epoch 4 batch id 7201 loss 0.3965698480606079 train acc 0.9357315824191085
epoch 4 batch id 7401 loss 0.22559942305088043 train acc 0.9358342622618565
epoch 4 batch id 7601 loss 0.3547527492046356 train acc 0.9358760360478884
epoch 4 batch id 7801 loss 0.336011585734558 train acc 0.9359577297782335
epoch 4 batch id 8001 loss 0.14742428064346313 train acc 0.9360763498312711
epoch 4 batch id 8201 loss 0.0834294781088829 train acc 0.9361949000121936
epoch 4 batch id 8401 loss 0.09999148547649384 train acc 0.9363115254136413
epoch 4 batch id 8601 loss 0.17780889570713043 train acc 0.9364536100453436
epoch 4 batch id 8801 loss 0.16509869694709778 train acc 0.9365377513918873
epoch 4 batch id 9001 loss 0.08281376212835312 train acc 0.9365782274191756
epoch 4 batch id 9201 loss 0.18606697022914886 train acc 0.9366373220302141
epoch 4 batch id 9401 loss 0.3314742147922516 train acc 0.9367786671630678
epoch 4 batch id 9601 loss 0.039439428597688675 train acc 0.9368229871888345
epoch 4 batch id 9801 loss 0.24590611457824707 train acc 0.9368750637690032
epoch 4 batch id 10001 loss 0.4909117817878723 train acc 0.9369781771822818
epoch 4 batch id 10201 loss 0.2783736288547516 train acc 0.9370067885501422
epoch 4 batch id 10401 loss 0.31079018115997314 train acc 0.9370718560715315
epoch 4 batch id 10601 loss 0.18844148516654968 train acc 0.937187529478351
epoch 4 batch id 10801 loss 0.07283200323581696 train acc 0.9372685399500046
epoch 4 batch id 11001 loss 0.4099891781806946 train acc 0.9373054154167803
epoch 4 batch id 11201 loss 0.21599692106246948 train acc 0.9373911927506473
epoch 4 batch id 11401 loss 0.19743436574935913 train acc 0.9374780720989387
epoch 4 batch id 11601 loss 0.13932546973228455 train acc 0.9375888931988622
epoch 4 batch id 11801 loss 0.23799876868724823 train acc 0.9377701042284552
epoch 4 batch id 12001 loss 0.2207852154970169 train acc 0.9378736667777685
epoch 4 batch id 12201 loss 0.19577603042125702 train acc 0.9378905929841816
epoch 4 batch id 12401 loss 0.16192688047885895 train acc 0.9380128114668171
epoch 4 train acc 0.938084471701919


100%
3126/3126 [06:46<00:00, 7.84it/s]
epoch 4 test acc 0.922699260046309
모델저장


100%
12502/12502 [1:19:55<00:00, 3.14it/s]
epoch 5 batch id 1 loss 0.11663409322500229 train acc 0.96875
epoch 5 batch id 201 loss 0.15174096822738647 train acc 0.9418532338308457
```

```
epoch 5 batch id 401 loss 0.31599724292755127 train acc 0.943968204488778
epoch 5 batch id 601 loss 0.5200095176696777 train acc 0.943505615640599
epoch 5 batch id 801 loss 0.1814669370651245 train acc 0.9434691011235955
epoch 5 batch id 1001 loss 0.18649518489837646 train acc 0.9433379120879121
epoch 5 batch id 1201 loss 0.31487229466438293 train acc 0.9440440258118235
epoch 5 batch id 1401 loss 0.49902549386024475 train acc 0.9440020521056388
epoch 5 batch id 1601 loss 0.211312398314476 train acc 0.944292629606496
epoch 5 batch id 1801 loss 0.06400786340236664 train acc 0.944553373126041
epoch 5 batch id 2001 loss 0.30664464831352234 train acc 0.9447932283858071
epoch 5 batch id 2201 loss 0.29316529631614685 train acc 0.9448617105860972
epoch 5 batch id 2401 loss 0.2260608673095703 train acc 0.9448276759683465
epoch 5 batch id 2601 loss 0.12989473342895508 train acc 0.9448829777008843
epoch 5 batch id 2801 loss 0.024776045233011246 train acc 0.9448132363441628
epoch 5 batch id 3001 loss 0.0634315013885498 train acc 0.9450287404198601
epoch 5 batch id 3201 loss 0.3546488881111145 train acc 0.9451489768822243
epoch 5 batch id 3401 loss 0.33896639943122864 train acc 0.945255072037636
epoch 5 batch id 3601 loss 0.180996835231781 train acc 0.9453710774784782
epoch 5 batch id 3801 loss 0.14161698520183563 train acc 0.9455817548013681
epoch 5 batch id 4001 loss 0.1575956493616104 train acc 0.9458026118470383
epoch 5 batch id 4201 loss 0.18833665549755096 train acc 0.9460135979528683
epoch 5 batch id 4401 loss 0.1923653483390808 train acc 0.9462125085207908
epoch 5 batch id 4601 loss 0.2961757779121399 train acc 0.9462277222342969
epoch 5 batch id 4801 loss 0.2299700379371643 train acc 0.946430431160175
epoch 5 batch id 5001 loss 0.18385964632034302 train acc 0.9464419616076785
epoch 5 batch id 5201 loss 0.2154766321182251 train acc 0.9465367237069794
epoch 5 batch id 5401 loss 0.18062977492809296 train acc 0.9466071097944825
epoch 5 batch id 5601 loss 0.07041748613119125 train acc 0.9467673183360115
epoch 5 batch id 5801 loss 0.2074937820434 5703 train acc 0.9467467893466643
epoch 5 batch id 6001 loss 0.060833077877759933 train acc 0.9469515497417097
epoch 5 batch id 6201 loss 0.13604386150836945 train acc 0.9470801080470892
epoch 5 batch id 6401 loss 0.0915231928229332 train acc 0.9471420481174816
epoch 5 batch id 6601 loss 0.3277971446514 1296 train acc 0.9471836663537343
epoch 5 batch id 6801 loss 0.20902812480926514 train acc 0.9473147331274813
epoch 5 batch id 7001 loss 0.09308617562055588 train acc 0.9472575346379088
epoch 5 batch id 7201 loss 0.2863089442253113 train acc 0.9472729482016387
epoch 5 batch id 7401 loss 0.20100048184394836 train acc 0.9473888663694096
epoch 5 batch id 7601 loss 0.2877030372619629 train acc 0.9474575713721879
epoch 5 batch id 7801 loss 0.31062424182891846 train acc 0.9474887033713626
epoch 5 batch id 8001 loss 0.13815206289291382 train acc 0.9475885826771654
epoch 5 batch id 8201 loss 0.04401110112667084 train acc 0.9477083587367394
epoch 5 batch id 8401 loss 0.06193196028470993 train acc 0.9477963932865135
epoch 5 batch id 8601 loss 0.15792185068130493 train acc 0.9479202999651203
epoch 5 batch id 8801 loss 0.14028184115886688 train acc 0.947992415634587
epoch 5 batch id 9001 loss 0.09581313282251358 train acc 0.9479884179535607
epoch 5 batch id 9201 loss 0.12554313242435455 train acc 0.9480966742745354
epoch 5 batch id 9401 loss 0.2570638060569763 train acc 0.9482385517498139
epoch 5 batch id 9601 loss 0.03012113831937313 train acc 0.9483305775440058
epoch 5 batch id 9801 loss 0.1941414624452591 train acc 0.9483439189878584
epoch 5 batch id 10001 loss 0.4065660536289215 train acc 0.9484332816718328
epoch 5 batch id 10201 loss 0.27165064215660095 train acc 0.9485022914420155
epoch 5 batch id 10401 loss 0.2523307204246521 train acc 0.948546113354 4851
epoch 5 batch id 10601 loss 0.242817223072052 train acc 0.9486354471276295
```

```
epoch 5 batch id 10801 loss 0.05692296847701073 train acc 0.9487431719285251
epoch 5 batch id 11001 loss 0.27469921112060547 train acc 0.948750397691119
epoch 5 batch id 11201 loss 0.18518376350402832 train acc 0.9488117690384787
epoch 5 batch id 11401 loss 0.10068716108798981 train acc 0.9489312889220244
epoch 5 batch id 11601 loss 0.12086156010627747 train acc 0.9490426471855874
epoch 5 batch id 11801 loss 0.20543085038661957 train acc 0.9491992204050504
epoch 5 batch id 12001 loss 0.15673264861106873 train acc 0.9492724564619615
epoch 5 batch id 12201 loss 0.19961683452129364 train acc 0.9492997500204902
epoch 5 batch id 12401 loss 0.0862891674041748 train acc 0.9493664825417305
epoch 5 train acc 0.9494198862964534


100%
3126/3126 [06:46<00:00, 7.85it/s]
epoch 5 test acc 0.9257032987539225
모델저장
```