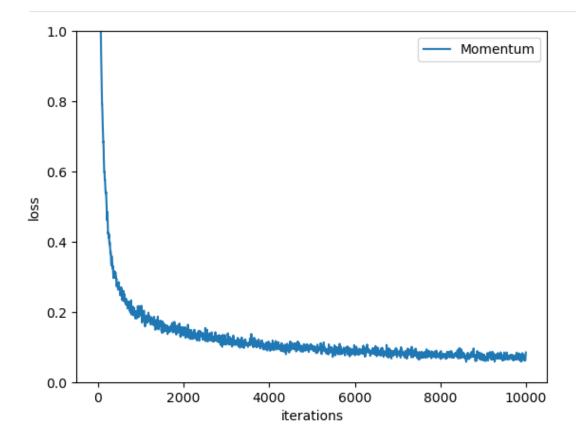
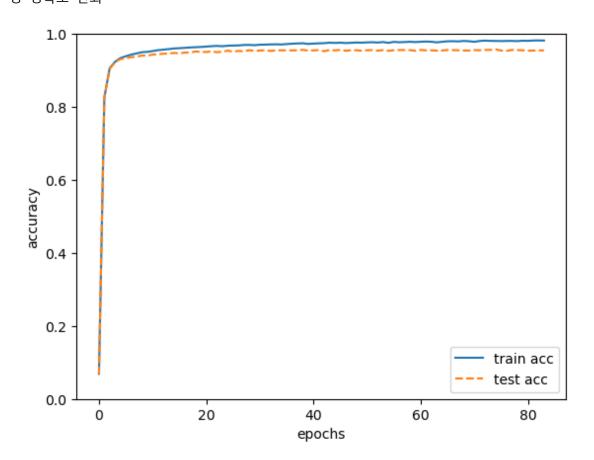
## 반복횟수와 손실함수값 추이 (Momentum)



에폭 당 정확도 변화



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신경망 학습 시작 - 신경망: 6층
1 번째 학습(에폭) --> train_acc : 6.88%, test_acc : 6.83%
2 번째 학습(에폭) --> train_acc : 82.59%, test_acc : 82.69%
3 번째 학습(에폭) --> train_acc : 90.62%, test_acc : 90.41%
4 번째 학습(에폭) --> train_acc : 92.36%, test_acc : 92.26%
                                                         47 번째 학습(에폭) --> train_acc : 97.50%, test_acc : 95.39%
5 번째 학습(에폭) --> train_acc : 93.39%, test_acc : 93.09%
                                                         48 번째
                                                                학습(에폭) --> train_acc : 97.56%, test_acc : 95.50%
       학습(메폭) --> train_acc : 93.88%, test_acc : 93.32%
6 번째
                                                                학습(에폭) --> train_acc : 97.64%, test_acc : 95.53%
                                                         49 번째
7 번째
       학습(에폭) --> train_acc : 94.32%, test_acc : 93.62%
                                                         50 번째
                                                                학습(에폭) --> train_acc : 97.60%, test_acc : 95.38%
       학습(에폭) --> train_acc : 94.64%, test_acc : 93.76%
8 번째
                                                         51 번째 학습(에폭) --> train_acc : 97.68%, test_acc : 95.52%
9 번째 학습(에폭) --> train_acc : 94.98%, test_acc : 94.06%
                                                         52 번째 학습(에폭) --> train_acc : 97.72%, test_acc : 95.55%
10 번째
       학습(에폭) --> train_acc : 95.08%, test_acc : 94.07%
                                                         53 번째 학습(메폭) --> train_acc : 97.64%, test_acc : 95.40%
11 번째 학습(에폭) --> train_acc : 95.30%, test_acc : 94.32%
                                                         54 번째 학습(에폭) --> train_acc : 97.76%, test_acc : 95.56%
12 번째
       학습(에폭) --> train_acc : 95.55%, test_acc : 94.45%
                                                         55 번째 학습(에폭) --> train_acc : 97.55%, test_acc : 95.37%
       학습(에폭) --> train_acc : 95.69%, test_acc : 94.57%
13 번째
                                                         56 번째 학습(에폭) --> train_acc : 97.82%, test_acc : 95.52%
       학습(에폭) --> train_acc : 95.84%, test_acc : 94.61%
14 번째
                                                         57 번째 학습(에폭) --> train_acc : 97.71%, test_acc : 95.58%
15 번째
       학습(에폭) --> train_acc : 96.00%, test_acc : 94.79%
                                                         58 번째 학습(에폭) --> train_acc : 97.77%, test_acc : 95.57%
       학습(에폭) --> train_acc : 96.09%, test_acc : 94.67%
16 번째
                                                         59 번째 학습(에폭) --> train_acc : 97.85%, test_acc : 95.57%
17 번째
       학습(에폭) --> train_acc : 96.18%, test_acc : 94.89%
                                                         60 번째 학습(에폭) --> train_acc : 97.76%, test_acc : 95.37%
18 번째
       학습(에폭) --> train_acc : 96.28%, test_acc : 94.90%
                                                         61 번째 학습(에폭) --> train_acc : 97.85%, test_acc : 95.60%
19 번째
       학습(에폭) --> train_acc : 96.36%, test_acc : 95.17%
                                                         62 번째 학습(에폭) --> train_acc : 97.91%, test_acc : 95.48%
20 번째
       학습(에폭) --> train_acc : 96.43%, test_acc : 95.10%
                                                         63 번째 학습(에폭) --> train_acc : 97.85%, test_acc : 95.50%
       학습(에폭) --> train_acc : 96.53%, test_acc : 95.03%
21 번째
                                                         64 번째 학습(에폭) --> train_acc : 97.68%, test_acc : 95.41%
       학습(에폭) --> train_acc : 96.64%, test_acc : 95.22%
22 번째
                                                         65 번째
                                                                학습(에폭) --> train_acc : 97.84%, test_acc : 95.44%
23 번째 학습(에폭) --> train_acc : 96.71%, test_acc : 94.98%
                                                         66 번째
                                                                학습(에폭) --> train_acc : 97.98%, test_acc : 95.61%
24 번째 학습(에폭) --> train_acc : 96.63%, test_acc : 95.12%
                                                                학습(에폭) --> train_acc : 98.00%, test_acc : 95.56%
                                                         67 번째
25 번째 학습(에폭) --> train_acc : 96.76%, test_acc : 95.41%
                                                         68 번째 학습(에폭) --> train_acc : 97.95%, test_acc : 95.51%
26 번째
       학습(에폭) --> train_acc : 96.81%, test_acc : 95.14%
                                                         69 번째 학습(에폭) --> train_acc : 98.07%, test_acc : 95.44%
27 번째
       학습(에폭) --> train_acc : 96.84%, test_acc : 95.34%
       학습(에폭) --> train_acc : 96.97%, test_acc : 95.23%
                                                         70 번째 학습(에폭) --> train_acc : 97.99%, test_acc : 95.43%
28 번째
                                                         71 번째 학습(에폭) --> train_acc : 97.84%, test_acc : 95.56%
29 번째
       학습(에폭) --> train_acc : 96.99%, test_acc : 95.53%
                                                         72 번째 학습(에폭) --> train_acc : 98.06%, test_acc : 95.51%
       학습(에폭) --> train_acc : 96.91%, test_acc : 95.35%
30 번째
                                                         73 번째 학습(에폭) --> train_acc : 98.16%, test_acc : 95.61%
       학습(에폭) --> train_acc : 97.04%, test_acc : 95.44%
31 번째
32 번째
       학습(에폭) --> train_acc : 97.07%, test_acc : 95.53%
                                                         74 번째 학습(에폭) --> train_acc : 98.09%, test_acc : 95.62%
33 번째
       학습(에폭) --> train_acc : 97.11%, test_acc : 95.34%
                                                         75 번째 학습(에폭) --> train_acc : 98.07%, test_acc : 95.74%
       학습(에폭) --> train_acc : 97.15%, test_acc : 95.48%
                                                         76 번째 학습(에폭) --> train_acc : 98.04%, test_acc : 95.44%
34 번째
       학습(에폭) --> train_acc : 97.10%, test_acc : 95.50%
35 번째
                                                         77 번째 학습(에폭) --> train_acc : 98.07%, test_acc : 95.36%
36 번째 학습(에폭) --> train_acc : 97.22%, test_acc : 95.49%
                                                         78 번째 학습(에폭) --> train_acc : 98.08%, test_acc : 95.60%
37 번째 학습(에폭) --> train_acc : 97.31%, test_acc : 95.49%
                                                         79 번째 학습(에폭) --> train_acc : 98.03%, test_acc : 95.58%
38 번째
       학습(에폭) --> train_acc : 97.38%, test_acc : 95.50%
                                                         80 번째 학습(에폭) --> train_acc : 98.13%, test_acc : 95.50%
39 번째
       학습(에폭) --> train_acc : 97.43%, test_acc : 95.65%
                                                         81 번째 학습(에폭) --> train_acc : 98.11%, test_acc : 95.40%
       학습(에폭) --> train_acc : 97.25%, test_acc : 95.42%
40 번째
                                                         82 번째 학습(에폭) --> train_acc : 98.19%, test_acc : 95.43%
       학습(에폭) --> train_acc : 97.35%, test_acc : 95.48%
41 번째
                                                         83 번째 학습(에폭) --> train_acc : 98.21%, test_acc : 95.49%
       학습(에폭) --> train_acc : 97.41%, test_acc : 95.57%
42 번째
                                                         84 번째 학습(에폭) --> train_acc : 98.18%, test_acc : 95.47%
      학습(에폭) --> train_acc : 97.47%, test_acc : 95.26%
43 번째
                                                         최종 학습률 --> train_acc : 98.18%, test_acc : 95.47%
44 번째 학습(에폭) --> train_acc : 97.59%, test_acc : 95.60%
45 번째 학습(에폭) --> train_acc : 97.53%, test_acc : 95.48%
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최종 학습률: train acc: 98.18%, test acc: 95.47%

46 번째 학습(에폭) --> train\_acc : 97.60%, test\_acc : 95.62%