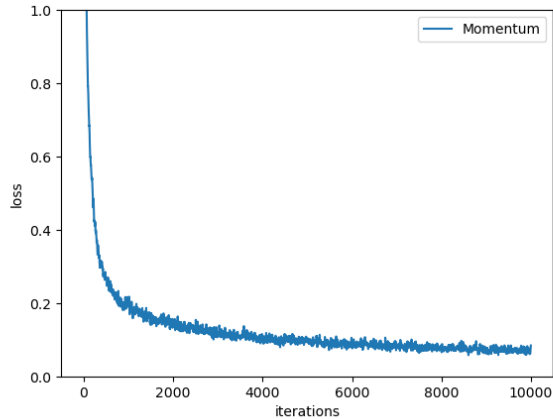반복횟수와 손실함수값 추이 (Momentum) ▽

```
In [250_    # 손실 함수 값
            x = np.arange(len(train_loss_list))
            plt.plot(x, smooth_curve(train_loss_list), label='Momentum')
            plt.xlabel("iterations")
            plt.ylabel("loss")
            plt.ylim(0, 1)
            plt.legend()
            plt.show()
```


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

최종 학습률 : train_acc : 98.18%, test_acc : 95.47