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Initial function parameter W & b

```
107 weight1 = np.array([[ -2.0, 1.0], [ 2.0, -1.0]])
108 weight2 = np.array([[ 1.0, -2.0]])
109 weight = [weight1, weight2]
110 b1 = np.array([[ -5., 5. ]]).reshape(2,1)
111 b2 = np.array([[ 1. ]])
112 b = [b1, b2]
```

Estimated unknown function parameter W & b

```
(score_ratio_train, score_ratio_test) = [(100.0, 85.0), (99.0, 98.1), (99.95, 99.8), (62.94, 61.9), (71.43, 70.89999999999999), (99.6, 99.8)]
[9.4, 0.918, 0.999, 0.94, 0.919, 0.999]
weight : [array([[ -2.05360314,  0.5715883 ],
[ -2.29412125,  0.00633108]]), array([[ 17.82305234, -16.30756931]])] b : [array([[ -10.97647839],
[  8.0206846 ]]), array([[ 7.35443378]])]
weight : [array([[ -2.36145085, -0.02460357],
[  3.00621574, -0.02179552]]), array([[ -11.23131485, -10.87282089]])] b : [array([[ 10.97405824],
[ 14.74357425]])]
weight : [array([[ -2.53339354e+00,  1.43102584e-03],
[  2.91606295e+00,  5.61044649e-03]])] b : [array([[ 12.492976 ],
[ 14.44290881]])]
weight : [array([[ -1.93977877,  0.77000431],
[  1.71204541, -0.37983593]]), array([[  0.39812241, -1.58272415]])] b : [array([[ -5.06163699],
[  5.18866756]])]
weight : [array([[ -1.81716196,  0.57839404],
[  1.12256696, -0.00721596]])] b : [array([[ -5.13788789],
[  5.92670432]])]
weight : [array([[ -2.69432322,  0.03012136],
[  2.9468663 , -0.00465932]])] b : [array([[ 13.32993292],
[ 14.55514014]])]
```

Empirically determined (best) hyper parameter, alpha

```
70 lr = [9.4, 0.918, 0.999, 0.94, 0.919, 0.999]
```

Accuracy (fill in the blanks in the tables below and add them to the report)

| Table1 | m=10, n=10000, k=5000 | m=100, n=1000, k=5000 | m=10000, n=1000, k=5000 |
|---------------------------|-----------------------|-----------------------|-------------------------|
| Accuracy (with 'm' train) | 100.0 | 99.0 | 99.95 |
| Accuracy (with 'n' test) | 85.0 | 98.1 | 99.8 |

| Table2 | m=10000, n=1000, k=10 | m=10000, n=1000, k=100 | m=10000, n=1000, k=5000 |
|---------------------------|-----------------------|------------------------|-------------------------|
| Accuracy (with 'm' train) | 62.94 | 71.43 | 99.6 |
| Accuracy (with 'n' test) | 61.9 | 70.90 | 99.8 |