```
The Traning:
                                                                   5k DATA
Regularization Constant is 1
EPS is 0.0001
MAXITER is 50
LOSS is hinge
KERNEL is <function linear at 0x10d3124d0>
KERNEL PARAM (spread) is 40
The final accuracy: 0.7161382462153671
The weight vector is: [-1.49677545 -0.14506421 -0.17359202 -0.15427059 0.071835 -
0.13396453
0.04713246 -0.16380108 0.03028234 -0.11435312 -0.21804644 -0.14983353
0.49361067 -0.12971097 0.14001769 -0.17727451 0.37016052 -0.11844847
0.30819044 -0.09337215 0.5098577 0.02160093 -0.03981425 -0.5023535
-0.08226302 -0.32276495]
The bias vector is: [-386.7588421088512, -414.853694030905, -344.09784037922975, -
386.5166500724379, -412.1170613757807, -368.6373207676428, -402.916955226653, -
407.37943825039696, -386.67249075062136, -377.89441928676797, -380.9873869925719, -
392.24924106931735, -407.00866815610806, -396.4210668813401, -402.40873320710324, -
376.47218798819887, ..., -395.4239461265553, -411.284541355415, -403.33889670282645, -
399.0166615129764]
The bias avergae is: -394.6967642156531
The number of support vectors for HINGE is 3365
The Testing:
Regularization Constant is 1
EPS is 0.001
MAXITER is 50
LOSS is hinge
KERNEL is <function linear at 0x10d3124d0>
KERNEL PARAM (spread) is 40
Successfully congerve in given iteration
The final accuracy: 0.69366244162775186
The weight vector is: [-1.08677618e-02 -9.56922606e-04 1.17218343e-04 -1.01407023e-03
1.27430750e-03 -7.17140772e-04 5.00997377e-04 -9.56846711e-04
 1.18082988e-03 -7.04582421e-04 -2.23933510e-03 -4.52998701e-04
 3.00282748e-03 -5.26343811e-04 1.71805069e-03 -1.42819193e-03
 2.65495595e-03 -5.03967595e-04 2.37572308e-03 -7.25280108e-06
7.41765989e-03 -2.04247107e-04 9.06844681e-05 -3.25650476e-03
-7.15623897e-05 4.25354932e-04]
The bias vector is: [-4.86071993687944, -6.283116191709669, -4.966117216425283, -
4.90551309585372, -6.724820843212226, -5.025749392823139, -4.9146517614794485, ..., -
6.7078848548013825, -4.928110634953846, -6.623607240482339, -4.984221240451054, -
6.702297171850939, -4.792401626911304]
The bias avergae is: -5.855912772153473
The number of support vectors for HINGE is 1056
```

The Traning:

Regularization Constant is 1

EPS is 0.0001

MAXITER is 50

LOSS is quadratic

KERNEL is <function linear at 0x10c0a40e0>

KERNEL PARAM (spread) is 40

The final accuracy: 0.7109968580405598

The weight vector is: [-1.21491608 -0.09076398 -0.04532335 -0.10232995 0.08633146 -

0.07476394

0.00895257 -0.12181481 0.11356753 -0.06471984 -0.10735441 -0.08149923

0.27987379 -0.04839638 0.16033875 -0.11296138 0.27122299 -0.03669577

 $0.21479837 - 0.03070052 \ 0.61098687 \ 0.16498441 - 0.11804347 \ 0.75357273$

-0.00401715 0.54872765]

The bias vector is: [-536.5344060280313, -582.6518462163376, -594.2990265774123, -

568.5314615660852, -598.7208612236979, -548.2990273840803, -592.1595505659374, -

567.3927081882438,...,-519.6466597035185, -551.4096602600841, -550.9062109729699, -

535.0045925493915, -519.4541840347929

The bias avergae is: -553.5818277081058

The number of support vectors for QUADRATIC is 3442

The Testing:

Regularization Constant is 1

EPS is 0.001

MAXITER is 50

LOSS is quadratic

KERNEL is <function linear at 0x10c0a40e0>

KERNEL PARAM (spread) is 40

Successfully congerve in given iteration

The final accuracy: 0.7076584389593062

The weight vector is: [-1.08186056e-02 -1.01151213e-03 -6.58721821e-05 -1.03654012e-03

1.11196430e-03 -8.61258539e-04 2.71732812e-04 -1.02816446e-03

1.03055492e-03 -7.77142753e-04 -1.59347080e-03 -1.80989457e-04

2.07862647e-03 -6.82975325e-04 1.68171207e-03 -1.43981138e-03

2.69639887e-03 -4.92728931e-04 2.28314966e-03 6.14431443e-05

6.19474216e-03 7.91647929e-04 1.47472440e-04 -2.26753990e-03

1.82014327e-04 2.60177247e-03]

The bias vector is: [-4.033435175973429, -5.695158842160767, -6.005812935979109, -

3.688887904135022, -3.9678430257212396, -5.881681778203926, ..., -4.226587308757287, -

3.9861308841078644]

The bias avergae is: -5.030390121069775

The number of support vectors for QUADRATIC is 1032

The Traning:

Regularization Constant is 1

EPS is 0.0001

MAXITER is 50

LOSS is hinge

KERNEL is <function gaussian at 0x10c0a4830>

KERNEL PARAM (spread) is 40

The final accuracy: 0.8700371322479291

The number of support vectors for HINGE is 1264

The Testing:

Regularization Constant is 1

EPS is 0.001

MAXITER is 50

LOSS is hinge

KERNEL is <function gaussian at 0x10c0a4830>

KERNEL_PARAM (spread) is 40

The final accuracy: 0.923949299533022

The number of support vectors for HINGE is 650

The Traning:

Regularization Constant is 1

EPS is 0.0001

MAXITER is 50

LOSS is quadratic

KERNEL is <function gaussian at 0x10c0a44d0>

KERNEL_PARAM (spread) is 40

The final accuracy: 0.9777206512425022

The number of support vectors for QUADRATIC is 3283

The Testing:

Regularization Constant is 1

EPS is 0.001

MAXITER is 50

LOSS is quadratic

KERNEL is <function gaussian at 0x10c0a44d0>

KERNEL PARAM (spread) is 40

The final accuracy: 0.9599733155436958

The number of support vectors for QUADRATIC is 1425