

Output_logistic_test.txt

CROSS VALIDATION 20

```
iteration: 0 Logisticloss: 8.200616507974308
iteration: 1 Logisticloss: 0.07708478552604484
iteration: 2 Logisticloss: 0.06346567361285432
iteration: 3 Logisticloss: 0.06253723874074218
iteration: 4 Logisticloss: 0.061773596630768014
iteration: 5 Logisticloss: 0.061109427368052784
iteration: 6 Logisticloss: 0.06051142068799626
iteration: 7 Logisticloss: 0.05996039277224549
iteration: 8 Logisticloss: 0.059444360818225565
iteration: 9 Logisticloss: 0.058955386879034594
iteration: 10 Logisticloss: 0.058487971129818024
iteration: 11 Logisticloss: 0.05803816490418638
iteration: 12 Logisticloss: 0.05760304961228133
iteration: 13 Logisticloss: 0.057180415050249296
iteration: 14 Logisticloss: 0.05676855258470924
iteration: 15 Logisticloss: 0.056366117609237154
iteration: 16 Logisticloss: 0.055972035399755954
iteration: 17 Logisticloss: 0.05558543505784185
iteration: 18 Logisticloss: 0.05520560214979932
iteration: 19 Logisticloss: 0.054831944098361764
iteration: 20 Logisticloss: 0.05446396446283765
iteration: 21 Logisticloss: 0.05410124353433004
iteration: 22 Logisticloss: 0.053743423495362284
iteration: 23 Logisticloss: 0.0533901969299628
iteration: 24 Logisticloss: 0.05304129782781224
iteration: 25 Logisticloss: 0.05269649446878292
iteration: 26 Logisticloss: 0.05235558374182929
iteration: 27 Logisticloss: 0.05201838656977287
iteration: 28 Logisticloss: 0.0516847441951984
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iteration: 30 Logisticloss: 0.051027572719208145
iteration: 31 Logisticloss: 0.05070380293801461
iteration: 32 Logisticloss: 0.050383102793580006
iteration: 33 Logisticloss: 0.050065378810931954
iteration: 34 Logisticloss: 0.04975054582456704
iteration: 35 Logisticloss: 0.04943852594379301
iteration: 36 Logisticloss: 0.049129247672130054
iteration: 37 Logisticloss: 0.04882264515448284
iteration: 38 Logisticloss: 0.048518657530813594
iteration: 39 Logisticloss: 0.04821722837900927
iteration: 40 Logisticloss: 0.047918305232782635
iteration: 41 Logisticloss: 0.04762183916296455
iteration: 42 Logisticloss: 0.04732778441256503
iteration: 43 Logisticloss: 0.047036098077617446
iteration: 44 Logisticloss: 0.04674673982714571
iteration: 45 Logisticloss: 0.04645967165668035
iteration: 46 Logisticloss: 0.04617485767063746
iteration: 47 Logisticloss: 0.04589226388960736
iteration: 48 Logisticloss: 0.045611858079206716
iteration: 49 Logisticloss: 0.04533360959765067
iteration: 50 Logisticloss: 0.045057489259622184
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Output_logistic_test.txt

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iteration: 51 Logisticloss: 0.04478346921436862
iteration: 52 Logisticloss: 0.04451152283624902
iteration: 53 Logisticloss: 0.04424162462620732
iteration: 54 Logisticloss: 0.04397375012285623
iteration: 55 Logisticloss: 0.043707875822035544
iteration: 56 Logisticloss: 0.04344397910386224
iteration: 57 Logisticloss: 0.043182038166418184
iteration: 58 Logisticloss: 0.04292203196533393
iteration: 59 Logisticloss: 0.04266394015862244
iteration: 60 Logisticloss: 0.04240774305619805
iteration: 61 Logisticloss: 0.04215342157358835
iteration: 62 Logisticloss: 0.04190095718940667
iteration: 63 Logisticloss: 0.04165033190620698
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iteration: 65 Logisticloss: 0.04115452905885862
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iteration: 68 Logisticloss: 0.040424194444810095
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iteration: 70 Logisticloss: 0.039946032511267555
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iteration: 72 Logisticloss: 0.0394747115461118
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iteration: 74 Logisticloss: 0.039010115581150695
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iteration: 76 Logisticloss: 0.03855213257148611
iteration: 77 Logisticloss: 0.038325586860773364
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iteration: 89 Logisticloss: 0.035729188975010075
iteration: 90 Logisticloss: 0.03552262707730573
iteration: 91 Logisticloss: 0.035317517921674355
iteration: 92 Logisticloss: 0.03511384994306611
iteration: 93 Logisticloss: 0.03491161166123048
iteration: 94 Logisticloss: 0.03471079167851347
iteration: 95 Logisticloss: 0.0345113786780953
iteration: 96 Logisticloss: 0.03431336142264548
iteration: 97 Logisticloss: 0.03411672875337176
iteration: 98 Logisticloss: 0.03392146958943998
iteration: 99 Logisticloss: 0.03372757292774026
[-0.00072899 0.00045795 -0.00028002 ... 0.00021244 -0.00017152
 0.00029528]

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CROSS VALIDATION 21

Output_logistic_test.txt

iteration: 0 Logisticloss: 7.900722491497107
iteration: 1 Logisticloss: 0.07701483808254225
iteration: 2 Logisticloss: 0.06368697794049794
iteration: 3 Logisticloss: 0.06262031197864859
iteration: 4 Logisticloss: 0.06178434721090973
iteration: 5 Logisticloss: 0.06107886484142011
iteration: 6 Logisticloss: 0.06045604741964244
iteration: 7 Logisticloss: 0.059889735361411164
iteration: 8 Logisticloss: 0.05936424314300016
iteration: 9 Logisticloss: 0.05886952049165549
iteration: 10 Logisticloss: 0.05839879437107004
iteration: 11 Logisticloss: 0.057947314713974775
iteration: 12 Logisticloss: 0.05751164062967828
iteration: 13 Logisticloss: 0.05708921170689123
iteration: 14 Logisticloss: 0.05667807894322096
iteration: 15 Logisticloss: 0.05627672953894564
iteration: 16 Logisticloss: 0.055883969197547685
iteration: 17 Logisticloss: 0.0554988409102457
iteration: 18 Logisticloss: 0.05512056759434582
iteration: 19 Logisticloss: 0.054748510742128095
iteration: 20 Logisticloss: 0.05438214006679301
iteration: 21 Logisticloss: 0.05402101085810755
iteration: 22 Logisticloss: 0.053664746842840935
iteration: 23 Logisticloss: 0.05331302704082349
iteration: 24 Logisticloss: 0.0529655755646429
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iteration: 26 Logisticloss: 0.05228255315258264
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iteration: 33 Logisticloss: 0.04999938099480873
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iteration: 48 Logisticloss: 0.045549738169937876
iteration: 49 Logisticloss: 0.045271332327561926
iteration: 50 Logisticloss: 0.044995015479714885
iteration: 51 Logisticloss: 0.044720761974217225

Output_logistic_test.txt

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iteration: 52 Logisticloss: 0.044448547355532095
iteration: 53 Logisticloss: 0.044178348264384104
iteration: 54 Logisticloss: 0.04391014234725814
iteration: 55 Logisticloss: 0.04364390817460095
iteration: 56 Logisticloss: 0.04337962516671067
iteration: 57 Logisticloss: 0.043117273526434276
iteration: 58 Logisticloss: 0.042856834177910565
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iteration: 68 Logisticloss: 0.0403538367773982
iteration: 69 Logisticloss: 0.04011333228405181
iteration: 70 Logisticloss: 0.03987455105593471
iteration: 71 Logisticloss: 0.03963747965713986
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iteration: 73 Logisticloss: 0.03916841379431995
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iteration: 85 Logisticloss: 0.036490965810284104
iteration: 86 Logisticloss: 0.03627805790940809
iteration: 87 Logisticloss: 0.036066668064412714
iteration: 88 Logisticloss: 0.03585678520476482
iteration: 89 Logisticloss: 0.03564839832674943
iteration: 90 Logisticloss: 0.03544149648962958
iteration: 91 Logisticloss: 0.035236068812314614
iteration: 92 Logisticloss: 0.03503210447051304
iteration: 93 Logisticloss: 0.03482959269434488
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iteration: 95 Logisticloss: 0.03442888402015326
iteration: 96 Logisticloss: 0.03423066583891033
iteration: 97 Logisticloss: 0.03403385765493312
iteration: 98 Logisticloss: 0.033838448949050394
iteration: 99 Logisticloss: 0.033644429250533923
[-0.00071235 0.00046947 -0.00028092 ... 0.00019747 -0.00013878
 0.00030012]
CROSS VALIDATION 22
iteration: 0 Logisticloss: 7.8894651322456655

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Output_logistic_test.txt

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iteration: 1 Logisticloss: 0.07693041049194616
iteration: 2 Logisticloss: 0.06361344157660999
iteration: 3 Logisticloss: 0.06255937224027258
iteration: 4 Logisticloss: 0.061730225764432003
iteration: 5 Logisticloss: 0.061028970632461
iteration: 6 Logisticloss: 0.060409024098988864
iteration: 7 Logisticloss: 0.05984479555330961
iteration: 8 Logisticloss: 0.05932089443872411
iteration: 9 Logisticloss: 0.05882743711360068
iteration: 10 Logisticloss: 0.058357751060571963
iteration: 11 Logisticloss: 0.057907150078285716
iteration: 12 Logisticloss: 0.05747223559625129
iteration: 13 Logisticloss: 0.057050476237800046
iteration: 14 Logisticloss: 0.05663994351012448
iteration: 15 Logisticloss: 0.0562391394653618
iteration: 16 Logisticloss: 0.05584688079409114
iteration: 17 Logisticloss: 0.05546221876779858
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iteration: 19 Logisticloss: 0.054712738850443775
iteration: 20 Logisticloss: 0.054346760971974474
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iteration: 23 Logisticloss: 0.05327873276724795
iteration: 24 Logisticloss: 0.052931618526586635
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iteration: 49 Logisticloss: 0.04524412241718529
iteration: 50 Logisticloss: 0.044968037870333426
iteration: 51 Logisticloss: 0.044694014651600056
iteration: 52 Logisticloss: 0.0444220283402115

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Output_logistic_test.txt

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iteration: 53 Logisticloss: 0.04415205560797814
iteration: 54 Logisticloss: 0.04388407412913392
iteration: 55 Logisticloss: 0.04361806249883473
iteration: 56 Logisticloss: 0.04335400015930651
iteration: 57 Logisticloss: 0.043091867332769325
iteration: 58 Logisticloss: 0.04283164496037908
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iteration: 71 Logisticloss: 0.039614948260244066
iteration: 72 Logisticloss: 0.03937976554302315
iteration: 73 Logisticloss: 0.039146264713438746
iteration: 74 Logisticloss: 0.03891443300304108
iteration: 75 Logisticloss: 0.03868425783393854
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iteration: 88 Logisticloss: 0.035837272853716615
iteration: 89 Logisticloss: 0.03562904696957891
iteration: 90 Logisticloss: 0.0354223042454283
iteration: 91 Logisticloss: 0.035217033796914717
iteration: 92 Logisticloss: 0.03501322479736673
iteration: 93 Logisticloss: 0.034810866475485217
iteration: 94 Logisticloss: 0.034609948113470075
iteration: 95 Logisticloss: 0.03441045904555599
iteration: 96 Logisticloss: 0.03421238865693417
iteration: 97 Logisticloss: 0.03401572638303634
iteration: 98 Logisticloss: 0.03382046170915806
iteration: 99 Logisticloss: 0.03362658417039817
[-0.00071459 0.00047045 -0.00028323 ... 0.00019759 -0.00013998
 0.00030038]
CROSS VALIDATION 23
iteration: 0 Logisticloss: 9.28994918789695
iteration: 1 Logisticloss: 0.07612977135339552

```

Output_logistic_test.txt

iteration: 2 Logisticloss: 0.06507179551452809
iteration: 3 Logisticloss: 0.06332744843348037
iteration: 4 Logisticloss: 0.062146244568544
iteration: 5 Logisticloss: 0.061231611203493845
iteration: 6 Logisticloss: 0.060469132321384775
iteration: 7 Logisticloss: 0.05980350799185543
iteration: 8 Logisticloss: 0.05920421959280774
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iteration: 46 Logisticloss: 0.045646718346013
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iteration: 49 Logisticloss: 0.04480960349416799
iteration: 50 Logisticloss: 0.044534870848493474
iteration: 51 Logisticloss: 0.04426223660978415
iteration: 52 Logisticloss: 0.04399167044105435
iteration: 53 Logisticloss: 0.043723143364661286

Output_logistic_test.txt

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iteration: 54 Logisticloss: 0.043456627652023246
iteration: 55 Logisticloss: 0.04319209672528516
iteration: 56 Logisticloss: 0.04292952506948645
iteration: 57 Logisticloss: 0.04266888815397643
iteration: 58 Logisticloss: 0.042410162361986053
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iteration: 96 Logisticloss: 0.03382074407905906
iteration: 97 Logisticloss: 0.0336238741561761
iteration: 98 Logisticloss: 0.033428357364013464
iteration: 99 Logisticloss: 0.03323418497926288
[-0.00133881 0.00038247 -0.00055771 ... 0.00035517 -0.0002839
 0.00036687]
CROSS VALIDATION 24
iteration: 0 Logisticloss: 7.8869105747970325
iteration: 1 Logisticloss: 0.07685147461249009
iteration: 2 Logisticloss: 0.06368407739452724

```


Output_logistic_test.txt

iteration: 3 Logisticloss: 0.06261088810783237
iteration: 4 Logisticloss: 0.061771712098212
iteration: 5 Logisticloss: 0.061064407773563444
iteration: 6 Logisticloss: 0.060440466854463415
iteration: 7 Logisticloss: 0.059873425453241515
iteration: 8 Logisticloss: 0.05934744498739004
iteration: 9 Logisticloss: 0.0588523905985361
iteration: 10 Logisticloss: 0.05838143908849417
iteration: 11 Logisticloss: 0.05792980896338844
iteration: 12 Logisticloss: 0.05749403875896134
iteration: 13 Logisticloss: 0.05707155410227517
iteration: 14 Logisticloss: 0.056660396228452925
iteration: 15 Logisticloss: 0.056259045336859416
iteration: 16 Logisticloss: 0.05586630200096346
iteration: 17 Logisticloss: 0.05548120538229537
iteration: 18 Logisticloss: 0.05510297549255237
iteration: 19 Logisticloss: 0.05473097158802802
iteration: 20 Logisticloss: 0.054364661639586004
iteration: 21 Logisticloss: 0.05400359956417573
iteration: 22 Logisticloss: 0.053647407996141386
iteration: 23 Logisticloss: 0.05329576507825928
iteration: 24 Logisticloss: 0.05294839421331031
iteration: 25 Logisticloss: 0.052605056025805966
iteration: 26 Logisticloss: 0.05226554199419226
iteration: 27 Logisticloss: 0.051929669360010436
iteration: 28 Logisticloss: 0.05159727702341929
iteration: 29 Logisticloss: 0.05126822220797463
iteration: 30 Logisticloss: 0.05094237773071275
iteration: 31 Logisticloss: 0.05061962975248291
iteration: 32 Logisticloss: 0.050299875912254086
iteration: 33 Logisticloss: 0.0499830237706347
iteration: 34 Logisticloss: 0.04966898950408005
iteration: 35 Logisticloss: 0.049357696803623105
iteration: 36 Logisticloss: 0.04904907594145683
iteration: 37 Logisticloss: 0.048743062976040356
iteration: 38 Logisticloss: 0.048439599072127866
iteration: 39 Logisticloss: 0.04813862991661422
iteration: 40 Logisticloss: 0.047840105214643346
iteration: 41 Logisticloss: 0.04754397825325053
iteration: 42 Logisticloss: 0.04725020552206862
iteration: 43 Logisticloss: 0.046958746382445626
iteration: 44 Logisticloss: 0.046669562777791024
iteration: 45 Logisticloss: 0.04638261897916191
iteration: 46 Logisticloss: 0.0460978813610764
iteration: 47 Logisticloss: 0.04581531820334153
iteration: 48 Logisticloss: 0.04553489951534246
iteration: 49 Logisticloss: 0.04525659687978549
iteration: 50 Logisticloss: 0.0449803833133415
iteration: 51 Logisticloss: 0.04470623314201361
iteration: 52 Logisticloss: 0.04443412188937037
iteration: 53 Logisticloss: 0.0441640261760508
iteration: 54 Logisticloss: 0.04389592362917335

Output_logistic_test.txt

```

iteration: 55 Logisticloss: 0.04362979280046791
iteration: 56 Logisticloss: 0.043365613092113516
iteration: 57 Logisticloss: 0.043103364689399105
iteration: 58 Logisticloss: 0.04284302849944248
iteration: 59 Logisticloss: 0.04258458609530161
iteration: 60 Logisticloss: 0.0423280196648993
iteration: 61 Logisticloss: 0.04207331196425425
iteration: 62 Logisticloss: 0.04182044627457591
iteration: 63 Logisticloss: 0.04156940636283545
iteration: 64 Logisticloss: 0.04132017644547201
iteration: 65 Logisticloss: 0.04107274115493434
iteration: 66 Logisticloss: 0.0408270855087952
iteration: 67 Logisticloss: 0.0405831948812044
iteration: 68 Logisticloss: 0.04034105497647601
iteration: 69 Logisticloss: 0.04010065180462752
iteration: 70 Logisticloss: 0.03986197165870932
iteration: 71 Logisticloss: 0.03962500109378218
iteration: 72 Logisticloss: 0.03938972690741463
iteration: 73 Logisticloss: 0.0391561361215875
iteration: 74 Logisticloss: 0.03892421596590424
iteration: 75 Logisticloss: 0.03869395386201658
iteration: 76 Logisticloss: 0.03846533740918438
iteration: 77 Logisticloss: 0.03823835437089715
iteration: 78 Logisticloss: 0.0380129926624912
iteration: 79 Logisticloss: 0.037789240339703656
iteration: 80 Logisticloss: 0.0375670855881092
iteration: 81 Logisticloss: 0.03734651671339103
iteration: 82 Logisticloss: 0.037127522132401045
iteration: 83 Logisticloss: 0.03691009036496844
iteration: 84 Logisticloss: 0.036694210026419
iteration: 85 Logisticloss: 0.03647986982076977
iteration: 86 Logisticloss: 0.036267058534566604
iteration: 87 Logisticloss: 0.03605576503133384
iteration: 88 Logisticloss: 0.03584597824660691
iteration: 89 Logisticloss: 0.0356376871835207
iteration: 90 Logisticloss: 0.03543088090892686
iteration: 91 Logisticloss: 0.035225548550015064
iteration: 92 Logisticloss: 0.0350216792914133
iteration: 93 Logisticloss: 0.03481926237274346
iteration: 94 Logisticloss: 0.03461828708660855
iteration: 95 Logisticloss: 0.03441874277698882
iteration: 96 Logisticloss: 0.03422061883802358
iteration: 97 Logisticloss: 0.034023904713156326
iteration: 98 Logisticloss: 0.03382858989462089
iteration: 99 Logisticloss: 0.03363466392324592
[-0.00071179 0.00047003 -0.00028078 ... 0.00019684 -0.000138
0.00030016]

```

CROSS VALIDATION 25

```

iteration: 0 Logisticloss: 7.91581410674355
iteration: 1 Logisticloss: 0.076555562428053
iteration: 2 Logisticloss: 0.06348351195185874
iteration: 3 Logisticloss: 0.062409740744729776

```

Output_logistic_test.txt

iteration: 4 Logisticloss: 0.06157369514130272
iteration: 5 Logisticloss: 0.06087033655929453
iteration: 6 Logisticloss: 0.06025031303416972
iteration: 7 Logisticloss: 0.05968690182808344
iteration: 8 Logisticloss: 0.05916419925307123
iteration: 9 Logisticloss: 0.0586720736130622
iteration: 10 Logisticloss: 0.05820372817061504
iteration: 11 Logisticloss: 0.05775441408867565
iteration: 12 Logisticloss: 0.05732070218685543
iteration: 13 Logisticloss: 0.05690004764032371
iteration: 14 Logisticloss: 0.05649051785445348
iteration: 15 Logisticloss: 0.05609061587275652
iteration: 16 Logisticloss: 0.05569916209545628
iteration: 17 Logisticloss: 0.05531521287215952
iteration: 18 Logisticloss: 0.05493800313494198
iteration: 19 Logisticloss: 0.054566905126729154
iteration: 20 Logisticloss: 0.05420139816026622
iteration: 21 Logisticloss: 0.053841046094819385
iteration: 22 Logisticloss: 0.05348548031345985
iteration: 23 Logisticloss: 0.05313438668638843
iteration: 24 Logisticloss: 0.05278749546646343
iteration: 25 Logisticloss: 0.052444573371322335
iteration: 26 Logisticloss: 0.052105417316497475
iteration: 27 Logisticloss: 0.051769849409412004
iteration: 28 Logisticloss: 0.05143771291647289
iteration: 29 Logisticloss: 0.0511088689884629
iteration: 30 Logisticloss: 0.050783193982165825
iteration: 31 Logisticloss: 0.050460577254712424
iteration: 32 Logisticloss: 0.050140919335633714
iteration: 33 Logisticloss: 0.049824130402895773
iteration: 34 Logisticloss: 0.049510129005239586
iteration: 35 Logisticloss: 0.049198840985361834
iteration: 36 Logisticloss: 0.048890198567843796
iteration: 37 Logisticloss: 0.048584139582978775
iteration: 38 Logisticloss: 0.04828060680329626
iteration: 39 Logisticloss: 0.0479795473740084
iteration: 40 Logisticloss: 0.04768091232210268
iteration: 41 Logisticloss: 0.047384656131584504
iteration: 42 Logisticloss: 0.04709073637459586
iteration: 43 Logisticloss: 0.04679911338992152
iteration: 44 Logisticloss: 0.0465097500018402
iteration: 45 Logisticloss: 0.046222611273449336
iteration: 46 Logisticloss: 0.04593766428955049
iteration: 47 Logisticloss: 0.04565487796496787
iteration: 48 Logisticloss: 0.045374222874818695
iteration: 49 Logisticloss: 0.045095671103789675
iteration: 50 Logisticloss: 0.044819196111918015
iteration: 51 Logisticloss: 0.04454477261474619
iteration: 52 Logisticloss: 0.04427237647602938
iteration: 53 Logisticloss: 0.04400198461143518
iteration: 54 Logisticloss: 0.04373357490189462
iteration: 55 Logisticloss: 0.04346712611544878

Output_logistic_test.txt

```

iteration: 56 Logisticloss: 0.04320261783659289
iteration: 57 Logisticloss: 0.042940030402253665
iteration: 58 Logisticloss: 0.04267934484364921
iteration: 59 Logisticloss: 0.0424205428333796
iteration: 60 Logisticloss: 0.04216360663717876
iteration: 61 Logisticloss: 0.041908519069830945
iteration: 62 Logisticloss: 0.04165526345481743
iteration: 63 Logisticloss: 0.04140382358731184
iteration: 64 Logisticloss: 0.041154183700189695
iteration: 65 Logisticloss: 0.04090632843275743
iteration: 66 Logisticloss: 0.0406602428019419
iteration: 67 Logisticloss: 0.04041591217571074
iteration: 68 Logisticloss: 0.04017332224852182
iteration: 69 Logisticloss: 0.03993245901862171
iteration: 70 Logisticloss: 0.03969330876703522
iteration: 71 Logisticloss: 0.0394558580381039
iteration: 72 Logisticloss: 0.03922009362144852
iteration: 73 Logisticloss: 0.03898600253524328
iteration: 74 Logisticloss: 0.038753572010701974
iteration: 75 Logisticloss: 0.038522789477686614
iteration: 76 Logisticloss: 0.038293642551358344
iteration: 77 Logisticloss: 0.038066119019798846
iteration: 78 Logisticloss: 0.03784020683253724
iteration: 79 Logisticloss: 0.037615894089924
iteration: 80 Logisticloss: 0.03739316903329885
iteration: 81 Logisticloss: 0.037172020035904474
iteration: 82 Logisticloss: 0.03695243559450224
iteration: 83 Logisticloss: 0.03673440432164956
iteration: 84 Logisticloss: 0.03651791493860219
iteration: 85 Logisticloss: 0.03630295626880701
iteration: 86 Logisticloss: 0.03608951723195432
iteration: 87 Logisticloss: 0.035877586838559294
iteration: 88 Logisticloss: 0.035667154185046006
iteration: 89 Logisticloss: 0.03545820844930713
iteration: 90 Logisticloss: 0.03525073888671542
iteration: 91 Logisticloss: 0.035044734826563104
iteration: 92 Logisticloss: 0.03484018566890705
iteration: 93 Logisticloss: 0.034637080881798246
iteration: 94 Logisticloss: 0.03443540999887451
iteration: 95 Logisticloss: 0.03423516261729672
iteration: 96 Logisticloss: 0.03403632839600862
iteration: 97 Logisticloss: 0.03383889705430119
iteration: 98 Logisticloss: 0.03364285837066296
iteration: 99 Logisticloss: 0.033448202181897514
[-0.00070945 0.00046862 -0.00027892 ... 0.00019686 -0.00013133
 0.00029901]
CROSS VALIDATION 26
iteration: 0 Logisticloss: 7.887819389145312
iteration: 1 Logisticloss: 0.07686148577152561
iteration: 2 Logisticloss: 0.06368438669241042
iteration: 3 Logisticloss: 0.06261171462483896
iteration: 4 Logisticloss: 0.061772808324220746

```

Output_logistic_test.txt

iteration: 5 Logisticloss: 0.06106566088193802
iteration: 6 Logisticloss: 0.06044181497569839
iteration: 7 Logisticloss: 0.05987483048332037
iteration: 8 Logisticloss: 0.05934888149096677
iteration: 9 Logisticloss: 0.05885384054776578
iteration: 10 Logisticloss: 0.058382889088019405
iteration: 11 Logisticloss: 0.05793124866520412
iteration: 12 Logisticloss: 0.05749545989923784
iteration: 13 Logisticloss: 0.057072949886534795
iteration: 14 Logisticloss: 0.0566617609229941
iteration: 15 Logisticloss: 0.05626037398798252
iteration: 16 Logisticloss: 0.05586759023645247
iteration: 17 Logisticloss: 0.05548244926756985
iteration: 18 Logisticloss: 0.055104171424167694
iteration: 19 Logisticloss: 0.05473211621330441
iteration: 20 Logisticloss: 0.054365751794901045
iteration: 21 Logisticloss: 0.05400463222683419
iteration: 22 Logisticloss: 0.05364838024628347
iteration: 23 Logisticloss: 0.05329667406829965
iteration: 24 Logisticloss: 0.052949237143099785
iteration: 25 Logisticloss: 0.05260583012219444
iteration: 26 Logisticloss: 0.052266244494011654
iteration: 27 Logisticloss: 0.05193029749574209
iteration: 28 Logisticloss: 0.051597828010986835
iteration: 29 Logisticloss: 0.05126869323623397
iteration: 30 Logisticloss: 0.05094276595230737
iteration: 31 Logisticloss: 0.050619932275805635
iteration: 32 Logisticloss: 0.05030008979431144
iteration: 33 Logisticloss: 0.04998314601065267
iteration: 34 Logisticloss: 0.0496690170377225
iteration: 35 Logisticloss: 0.0493576264977197
iteration: 36 Logisticloss: 0.049048904589157505
iteration: 37 Logisticloss: 0.04874278729232876
iteration: 38 Logisticloss: 0.0484392156896397
iteration: 39 Logisticloss: 0.048138135381715415
iteration: 40 Logisticloss: 0.04783949598373264
iteration: 41 Logisticloss: 0.047543250689256286
iteration: 42 Logisticloss: 0.04724935589111604
iteration: 43 Logisticloss: 0.04695777085067466
iteration: 44 Logisticloss: 0.04666845740830923
iteration: 45 Logisticloss: 0.046381379729119376
iteration: 46 Logisticloss: 0.046096504078852636
iteration: 47 Logisticloss: 0.045813798625836046
iteration: 48 Logisticloss: 0.04553323326536338
iteration: 49 Logisticloss: 0.045254779463531056
iteration: 50 Logisticloss: 0.044978410117971594
iteration: 51 Logisticloss: 0.044704099433309226
iteration: 52 Logisticloss: 0.044431822809479854
iteration: 53 Logisticloss: 0.04416155674132309
iteration: 54 Logisticloss: 0.043893278728078286
iteration: 55 Logisticloss: 0.04362696719160565
iteration: 56 Logisticloss: 0.04336260140231474

Output_logistic_test.txt

```

iteration: 57 Logisticloss: 0.04310016141191845
iteration: 58 Logisticloss: 0.04283962799224858
iteration: 59 Logisticloss: 0.04258098257946742
iteration: 60 Logisticloss: 0.042324207223096336
iteration: 61 Logisticloss: 0.04206928453935538
iteration: 62 Logisticloss: 0.041816197668371705
iteration: 63 Logisticloss: 0.04156493023486902
iteration: 64 Logisticloss: 0.04131546631199784
iteration: 65 Logisticloss: 0.04106779038800736
iteration: 66 Logisticloss: 0.04082188733549558
iteration: 67 Logisticloss: 0.040577742383005065
iteration: 68 Logisticloss: 0.04033534108875945
iteration: 69 Logisticloss: 0.04009466931635859
iteration: 70 Logisticloss: 0.03985571321227167
iteration: 71 Logisticloss: 0.039618459184985265
iteration: 72 Logisticloss: 0.03938289388567945
iteration: 73 Logisticloss: 0.0391490041903186
iteration: 74 Logisticloss: 0.038916777183055994
iteration: 75 Logisticloss: 0.03868620014086206
iteration: 76 Logisticloss: 0.03845726051929525
iteration: 77 Logisticloss: 0.03822994593934263
iteration: 78 Logisticloss: 0.038004244175265094
iteration: 79 Logisticloss: 0.03778014314338789
iteration: 80 Logisticloss: 0.037557630891782545
iteration: 81 Logisticloss: 0.03733669559079165
iteration: 82 Logisticloss: 0.03711732552435171
iteration: 83 Logisticloss: 0.03689950908207294
iteration: 84 Logisticloss: 0.036683234752038565
iteration: 85 Logisticloss: 0.036468491114287585
iteration: 86 Logisticloss: 0.03625526683494927
iteration: 87 Logisticloss: 0.036043550660997375
iteration: 88 Logisticloss: 0.03583333141559584
iteration: 89 Logisticloss: 0.03562459799400741
iteration: 90 Logisticloss: 0.035417339360038866
iteration: 91 Logisticloss: 0.035211544542997006
iteration: 92 Logisticloss: 0.03500720263513033
iteration: 93 Logisticloss: 0.03480430278953223
iteration: 94 Logisticloss: 0.03460283421848127
iteration: 95 Logisticloss: 0.034402786192195424
iteration: 96 Logisticloss: 0.03420414803797653
iteration: 97 Logisticloss: 0.03400690913972168
iteration: 98 Logisticloss: 0.0338110589377785
iteration: 99 Logisticloss: 0.033616586929121235
[-0.00071175 0.00046971 -0.00028081 ... 0.00019681 -0.00013779
 0.00030022]

```

CROSS VALIDATION 27

```

iteration: 0 Logisticloss: 7.870515119007413
iteration: 1 Logisticloss: 0.07673195570546211
iteration: 2 Logisticloss: 0.06367888485760552
iteration: 3 Logisticloss: 0.06260587346062607
iteration: 4 Logisticloss: 0.06176657520941204
iteration: 5 Logisticloss: 0.06105904195731752

```

Output_logistic_test.txt

```

iteration: 6 Logisticloss: 0.060434852867236384
iteration: 7 Logisticloss: 0.05986757883047844
iteration: 8 Logisticloss: 0.05934139347984423
iteration: 9 Logisticloss: 0.05884616464594438
iteration: 10 Logisticloss: 0.058375067902036226
iteration: 11 Logisticloss: 0.05792331906283109
iteration: 12 Logisticloss: 0.057487453590136024
iteration: 13 Logisticloss: 0.05706489411894888
iteration: 14 Logisticloss: 0.0566536791574531
iteration: 15 Logisticloss: 0.0562522864979036
iteration: 16 Logisticloss: 0.05585951462385238
iteration: 17 Logisticloss: 0.055474400897785575
iteration: 18 Logisticloss: 0.05509616378909389
iteration: 19 Logisticloss: 0.05472416123385087
iteration: 20 Logisticloss: 0.05435786007274916
iteration: 21 Logisticloss: 0.05399681325430932
iteration: 22 Logisticloss: 0.053640642581778045
iteration: 23 Logisticloss: 0.05328902548339609
iteration: 24 Logisticloss: 0.05294168474642743
iteration: 25 Logisticloss: 0.052598380464120076
iteration: 26 Logisticloss: 0.052258903655496736
iteration: 27 Logisticloss: 0.05192307116407662
iteration: 28 Logisticloss: 0.05159072154460576
iteration: 29 Logisticloss: 0.05126171172041642
iteration: 30 Logisticloss: 0.050935914247231553
iteration: 31 Logisticloss: 0.050613215058168334
iteration: 32 Logisticloss: 0.05029351159350762
iteration: 33 Logisticloss: 0.04997671124033776
iteration: 34 Logisticloss: 0.049662730023439294
iteration: 35 Logisticloss: 0.049351491501157786
iteration: 36 Logisticloss: 0.04904292582951856
iteration: 37 Logisticloss: 0.048736968965195714
iteration: 38 Logisticloss: 0.048433561983682843
iteration: 39 Logisticloss: 0.0481326504935181
iteration: 40 Logisticloss: 0.04783418413097432
iteration: 41 Logisticloss: 0.04753811612245646
iteration: 42 Logisticloss: 0.04724440290411116
iteration: 43 Logisticloss: 0.04695300378997654
iteration: 44 Logisticloss: 0.0466638806814714
iteration: 45 Logisticloss: 0.04637699781222073
iteration: 46 Logisticloss: 0.04609232152319309
iteration: 47 Logisticloss: 0.045809820063926025
iteration: 48 Logisticloss: 0.045529463416277866
iteration: 49 Logisticloss: 0.04525122313769151
iteration: 50 Logisticloss: 0.044975072221409264
iteration: 51 Logisticloss: 0.044700984971458024
iteration: 52 Logisticloss: 0.04442893689054108
iteration: 53 Logisticloss: 0.044158904579238975
iteration: 54 Logisticloss: 0.04389086564514735
iteration: 55 Logisticloss: 0.04362479862076917
iteration: 56 Logisticloss: 0.04336068288913989
iteration: 57 Logisticloss: 0.04309849861630155

```

Output_logistic_test.txt

```

iteration: 58 Logisticloss: 0.04283822668985828
iteration: 59 Logisticloss: 0.04257984866294634
iteration: 60 Logisticloss: 0.04232334670303665
iteration: 61 Logisticloss: 0.042068703545062605
iteration: 62 Logisticloss: 0.041815902448428956
iteration: 63 Logisticloss: 0.04156492715751204
iteration: 64 Logisticloss: 0.04131576186531013
iteration: 65 Logisticloss: 0.041068391179942786
iteration: 66 Logisticloss: 0.04082280009373479
iteration: 67 Logisticloss: 0.040578973954650883
iteration: 68 Logisticloss: 0.04033689843987437
iteration: 69 Logisticloss: 0.04009655953134753
iteration: 70 Logisticloss: 0.03985794349311092
iteration: 71 Logisticloss: 0.03962103685029814
iteration: 72 Logisticloss: 0.03938582636965779
iteration: 73 Logisticloss: 0.03915229904148829
iteration: 74 Logisticloss: 0.03892044206288391
iteration: 75 Logisticloss: 0.038690242822200654
iteration: 76 Logisticloss: 0.03846168888466024
iteration: 77 Logisticloss: 0.0382347679790184
iteration: 78 Logisticloss: 0.038009467985231964
iteration: 79 Logisticloss: 0.037785776923063646
iteration: 80 Logisticloss: 0.037563682941571676
iteration: 81 Logisticloss: 0.037343174309433236
iteration: 82 Logisticloss: 0.03712423940605784
iteration: 83 Logisticloss: 0.03690686671344847
iteration: 84 Logisticloss: 0.03669104480877213
iteration: 85 Logisticloss: 0.03647676235760477
iteration: 86 Logisticloss: 0.036264008107817124
iteration: 87 Logisticloss: 0.03605277088407031
iteration: 88 Logisticloss: 0.03584303958289245
iteration: 89 Logisticloss: 0.0356348031683078
iteration: 90 Logisticloss: 0.03542805066799205
iteration: 91 Logisticloss: 0.035222771169928516
iteration: 92 Logisticloss: 0.035018953819539844
iteration: 93 Logisticloss: 0.034816587817271885
iteration: 94 Logisticloss: 0.034615662416605554
iteration: 95 Logisticloss: 0.034416166922473936
iteration: 96 Logisticloss: 0.034218090690061854
iteration: 97 Logisticloss: 0.03402142312396498
iteration: 98 Logisticloss: 0.03382615367768656
iteration: 99 Logisticloss: 0.03363227185344905
[-0.00071074 0.00047156 -0.00027932 ... 0.00019651 -0.00013874
 0.00030004]

```

CROSS VALIDATION 28

```

iteration: 0 Logisticloss: 0.46210277364825925
iteration: 1 Logisticloss: 0.0648161137639917
iteration: 2 Logisticloss: 0.06023092686682775
iteration: 3 Logisticloss: 0.05784291013593247
iteration: 4 Logisticloss: 0.05622193483882568
iteration: 5 Logisticloss: 0.05499476848075018
iteration: 6 Logisticloss: 0.05400385180224368

```


Output_logistic_test.txt

```

iteration: 7 Logisticloss: 0.05316830384635592
iteration: 8 Logisticloss: 0.052441516019131634
iteration: 9 Logisticloss: 0.05179443817368751
iteration: 10 Logisticloss: 0.051207893515150496
iteration: 11 Logisticloss: 0.05066865060920568
iteration: 12 Logisticloss: 0.050167252438757054
iteration: 13 Logisticloss: 0.049696741587808915
iteration: 14 Logisticloss: 0.04925187436891935
iteration: 15 Logisticloss: 0.048828616608000065
iteration: 16 Logisticloss: 0.048423809107335944
iteration: 17 Logisticloss: 0.04803493924945524
iteration: 18 Logisticloss: 0.04765998116692655
iteration: 19 Logisticloss: 0.04729728145538582
iteration: 20 Logisticloss: 0.0469454758833529
iteration: 21 Logisticloss: 0.04660342765715289
iteration: 22 Logisticloss: 0.046270180964954395
iteration: 23 Logisticloss: 0.0459449255387343
iteration: 24 Logisticloss: 0.0456269692853293
iteration: 25 Logisticloss: 0.04531571691051243
iteration: 26 Logisticloss: 0.04501065305149371
iteration: 27 Logisticloss: 0.0447113288409706
iteration: 28 Logisticloss: 0.044417351111343026
iteration: 29 Logisticloss: 0.04412837365048861
iteration: 30 Logisticloss: 0.043844090066433326
iteration: 31 Logisticloss: 0.043564227924575344
iteration: 32 Logisticloss: 0.0432885438994537
iteration: 33 Logisticloss: 0.04301681974137701
iteration: 34 Logisticloss: 0.0427488589020786
iteration: 35 Logisticloss: 0.042484483696835676
iteration: 36 Logisticloss: 0.042223532905952585
iteration: 37 Logisticloss: 0.04196585973814984
iteration: 38 Logisticloss: 0.04171133009366915
iteration: 39 Logisticloss: 0.04145982107685645
iteration: 40 Logisticloss: 0.04121121971740546
iteration: 41 Logisticloss: 0.040965421866915555
iteration: 42 Logisticloss: 0.040722331243380656
iteration: 43 Logisticloss: 0.04048185860101004
iteration: 44 Logisticloss: 0.04024392100664378
iteration: 45 Logisticloss: 0.04000844120715733
iteration: 46 Logisticloss: 0.03977534707480283
iteration: 47 Logisticloss: 0.03954457111952573
iteration: 48 Logisticloss: 0.039316050059015874
iteration: 49 Logisticloss: 0.03908972443867361
iteration: 50 Logisticloss: 0.03886553829485119
iteration: 51 Logisticloss: 0.03864343885571213
iteration: 52 Logisticloss: 0.03842337627487334
iteration: 53 Logisticloss: 0.03820530339368414
iteration: 54 Logisticloss: 0.037989175528577265
iteration: 55 Logisticloss: 0.03777495028041862
iteration: 56 Logisticloss: 0.03756258736319808
iteration: 57 Logisticloss: 0.03735204844975807
iteration: 58 Logisticloss: 0.03714329703255957

```

Output_logistic_test.txt

```

iteration: 59 Logisticloss: 0.03693629829774286
iteration: 60 Logisticloss: 0.03673101901096258
iteration: 61 Logisticloss: 0.03652742741366858
iteration: 62 Logisticloss: 0.036325493128667063
iteration: 63 Logisticloss: 0.03612518707394091
iteration: 64 Logisticloss: 0.035926481383830575
iteration: 65 Logisticloss: 0.03572934933678443
iteration: 66 Logisticloss: 0.035533765288981646
iteration: 67 Logisticloss: 0.03533970461321167
iteration: 68 Logisticloss: 0.03514714364246582
iteration: 69 Logisticloss: 0.03495605961775996
iteration: 70 Logisticloss: 0.034766430639760634
iteration: 71 Logisticloss: 0.0345782356238368
iteration: 72 Logisticloss: 0.0343914542582011
iteration: 73 Logisticloss: 0.034206066964841776
iteration: 74 Logisticloss: 0.03402205486298072
iteration: 75 Logisticloss: 0.033839399734820724
iteration: 76 Logisticloss: 0.0336580839933724
iteration: 77 Logisticloss: 0.03347809065217332
iteration: 78 Logisticloss: 0.03329940329673268
iteration: 79 Logisticloss: 0.0331220060575527
iteration: 80 Logisticloss: 0.03294588358459398
iteration: 81 Logisticloss: 0.03277102102306646
iteration: 82 Logisticloss: 0.03259740399044028
iteration: 83 Logisticloss: 0.03242501855458178
iteration: 84 Logisticloss: 0.03225385121293033
iteration: 85 Logisticloss: 0.03208388887264043
iteration: 86 Logisticloss: 0.031915118831621236
iteration: 87 Logisticloss: 0.03174752876041307
iteration: 88 Logisticloss: 0.03158110668484629
iteration: 89 Logisticloss: 0.031415840969434325
iteration: 90 Logisticloss: 0.03125172030145603
iteration: 91 Logisticloss: 0.031088733675689165
iteration: 92 Logisticloss: 0.03092687037975837
iteration: 93 Logisticloss: 0.030766119980066235
iteration: 94 Logisticloss: 0.030606472308278468
iteration: 95 Logisticloss: 0.030447917448336397
iteration: 96 Logisticloss: 0.030290445723974033
iteration: 97 Logisticloss: 0.030134047686716924
iteration: 98 Logisticloss: 0.02997871410434417
iteration: 99 Logisticloss: 0.029824435949794857
[-5.05641782e-04 4.21928697e-04 2.87833238e-04 ... 1.33061660e-04
-3.30740244e-05 2.89001601e-04]

```

CROSS VALIDATION 29

```

iteration: 0 Logisticloss: 7.845743368160616
iteration: 1 Logisticloss: 0.07647763426201093
iteration: 2 Logisticloss: 0.06361720412009263
iteration: 3 Logisticloss: 0.06255842588323966
iteration: 4 Logisticloss: 0.061726093712702684
iteration: 5 Logisticloss: 0.06102232272473755
iteration: 6 Logisticloss: 0.06040032084067929
iteration: 7 Logisticloss: 0.059834398949895874

```

Output_logistic_test.txt

```

iteration: 8 Logisticloss: 0.059309098847879084
iteration: 9 Logisticloss: 0.05881448430341926
iteration: 10 Logisticloss: 0.05834384064562458
iteration: 11 Logisticloss: 0.05789244763845147
iteration: 12 Logisticloss: 0.05745687914876589
iteration: 13 Logisticloss: 0.05703458140805215
iteration: 14 Logisticloss: 0.056623607660025534
iteration: 15 Logisticloss: 0.0562224449914655
iteration: 16 Logisticloss: 0.05582989776856658
iteration: 17 Logisticloss: 0.05544500706093155
iteration: 18 Logisticloss: 0.05506699364009848
iteration: 19 Logisticloss: 0.05469521682889465
iteration: 20 Logisticloss: 0.05432914425552731
iteration: 21 Logisticloss: 0.053968329263744515
iteration: 22 Logisticloss: 0.05361239379670314
iteration: 23 Logisticloss: 0.05326101525866472
iteration: 24 Logisticloss: 0.052913916310415
iteration: 25 Logisticloss: 0.052570856857572734
iteration: 26 Logisticloss: 0.05223162769822131
iteration: 27 Logisticloss: 0.051896045440293165
iteration: 28 Logisticloss: 0.05156394840068418
iteration: 29 Logisticloss: 0.05123519327067983
iteration: 30 Logisticloss: 0.050909652384849326
iteration: 31 Logisticloss: 0.050587211469082655
iteration: 32 Logisticloss: 0.05026776777197519
iteration: 33 Logisticloss: 0.0499512285051134
iteration: 34 Logisticloss: 0.04963750953393849
iteration: 35 Logisticloss: 0.04932653427315312
iteration: 36 Logisticloss: 0.04901823275007913
iteration: 37 Logisticloss: 0.048712540806685245
iteration: 38 Logisticloss: 0.04840939941670965
iteration: 39 Logisticloss: 0.048108754098781834
iteration: 40 Logisticloss: 0.04781055440999248
iteration: 41 Logisticloss: 0.04751475350717891
iteration: 42 Logisticloss: 0.04722130776544885
iteration: 43 Logisticloss: 0.046930176445282135
iteration: 44 Logisticloss: 0.04664132140101732
iteration: 45 Logisticloss: 0.046354706824725436
iteration: 46 Logisticloss: 0.046070299020448326
iteration: 47 Logisticloss: 0.04578806620458026
iteration: 48 Logisticloss: 0.04550797832883066
iteration: 49 Logisticloss: 0.04523000692275371
iteration: 50 Logisticloss: 0.044954124953283124
iteration: 51 Logisticloss: 0.04468030669909037
iteration: 52 Logisticloss: 0.04440852763790081
iteration: 53 Logisticloss: 0.04413876434516992
iteration: 54 Logisticloss: 0.04387099440274485
iteration: 55 Logisticloss: 0.043605196316327935
iteration: 56 Logisticloss: 0.04334134944071863
iteration: 57 Logisticloss: 0.04307943391194882
iteration: 58 Logisticloss: 0.04281943058554184
iteration: 59 Logisticloss: 0.04256132098022673

```

Output_logistic_test.txt

```
iteration: 60 Logisticloss: 0.0423050872265245
iteration: 61 Logisticloss: 0.04205071201969693
iteration: 62 Logisticloss: 0.04179817857661223
iteration: 63 Logisticloss: 0.04154747059613614
iteration: 64 Logisticloss: 0.04129857222270549
iteration: 65 Logisticloss: 0.041051468012781374
iteration: 66 Logisticloss: 0.04080614290391571
iteration: 67 Logisticloss: 0.040562582186195226
iteration: 68 Logisticloss: 0.04032077147585546
iteration: 69 Logisticloss: 0.04008069669087879
iteration: 70 Logisticloss: 0.0398423440284141
iteration: 71 Logisticloss: 0.03960569994387102
iteration: 72 Logisticloss: 0.03937075113155966
iteration: 73 Logisticloss: 0.039137484506759544
iteration: 74 Logisticloss: 0.038905887189114245
iteration: 75 Logisticloss: 0.038675946487258674
iteration: 76 Logisticloss: 0.03844764988459558
iteration: 77 Logisticloss: 0.03822098502614605
iteration: 78 Logisticloss: 0.03799593970640641
iteration: 79 Logisticloss: 0.03777250185814956
iteration: 80 Logisticloss: 0.037550659542115575
iteration: 81 Logisticloss: 0.03733040093754013
iteration: 82 Logisticloss: 0.0371117143334745
iteration: 83 Logisticloss: 0.03689458812085435
iteration: 84 Logisticloss: 0.03667901078527764
iteration: 85 Logisticloss: 0.03646497090045511
iteration: 86 Logisticloss: 0.036252457122299415
iteration: 87 Logisticloss: 0.03604145818362043
iteration: 88 Logisticloss: 0.035831962889396635
iteration: 89 Logisticloss: 0.03562396011259457
iteration: 90 Logisticloss: 0.035417438790507814
iteration: 91 Logisticloss: 0.03521238792159029
iteration: 92 Logisticloss: 0.03500879656275819
iteration: 93 Logisticloss: 0.034806653827135596
iteration: 94 Logisticloss: 0.0346059488822205
iteration: 95 Logisticloss: 0.03440667094844695
iteration: 96 Logisticloss: 0.03420880929812094
iteration: 97 Logisticloss: 0.034012353254706355
iteration: 98 Logisticloss: 0.033817292192439265
iteration: 99 Logisticloss: 0.03362361553624725
[-0.00070975 0.00047385 -0.00027644 ... 0.00019609 -0.0001414
0.00029949]
```

CROSS VALIDATION 30

```
iteration: 0 Logisticloss: 11.728925653785774
iteration: 1 Logisticloss: 0.07605981756369123
iteration: 2 Logisticloss: 0.06187721930784961
iteration: 3 Logisticloss: 0.060697133846089435
iteration: 4 Logisticloss: 0.059858204088165334
iteration: 5 Logisticloss: 0.059180750525273225
iteration: 6 Logisticloss: 0.058595195307256265
iteration: 7 Logisticloss: 0.05806802456165884
iteration: 8 Logisticloss: 0.05758085529911758
```

Output_logistic_test.txt

```

iteration: 9 Logisticloss: 0.057122672538833866
iteration: 10 Logisticloss: 0.056686434820328487
iteration: 11 Logisticloss: 0.05626741101687396
iteration: 12 Logisticloss: 0.05586229369300855
iteration: 13 Logisticloss: 0.05546869442840465
iteration: 14 Logisticloss: 0.05508484104567584
iteration: 15 Logisticloss: 0.054709387936268734
iteration: 16 Logisticloss: 0.05434129284681632
iteration: 17 Logisticloss: 0.053979734325824785
iteration: 18 Logisticloss: 0.053624054917554426
iteration: 19 Logisticloss: 0.05327372115265929
iteration: 20 Logisticloss: 0.0529282947857614
iteration: 21 Logisticloss: 0.0525874117389762
iteration: 22 Logisticloss: 0.052250766434311355
iteration: 23 Logisticloss: 0.0519180999642176
iteration: 24 Logisticloss: 0.05158919104128765
iteration: 25 Logisticloss: 0.051263848990598715
iteration: 26 Logisticloss: 0.050941908263942494
iteration: 27 Logisticloss: 0.05062322410214483
iteration: 28 Logisticloss: 0.05030766907343402
iteration: 29 Logisticloss: 0.049995130287347485
iteration: 30 Logisticloss: 0.04968550713464985
iteration: 31 Logisticloss: 0.04937870944054076
iteration: 32 Logisticloss: 0.049074655945320615
iteration: 33 Logisticloss: 0.048773273046539785
iteration: 34 Logisticloss: 0.04847449375147988
iteration: 35 Logisticloss: 0.04817825679997893
iteration: 36 Logisticloss: 0.04788450592610131
iteration: 37 Logisticloss: 0.04759318923365941
iteration: 38 Logisticloss: 0.04730425866562292
iteration: 39 Logisticloss: 0.04701766955136263
iteration: 40 Logisticloss: 0.0467333802187477
iteration: 41 Logisticloss: 0.0464513516605329
iteration: 42 Logisticloss: 0.04617154724639725
iteration: 43 Logisticloss: 0.04589393247353105
iteration: 44 Logisticloss: 0.0456184747499021
iteration: 45 Logisticloss: 0.04534514320532899
iteration: 46 Logisticloss: 0.045073908526299375
iteration: 47 Logisticloss: 0.04480474281113029
iteration: 48 Logisticloss: 0.04453761944261053
iteration: 49 Logisticloss: 0.04427251297570974
iteration: 50 Logisticloss: 0.044009399038308535
iteration: 51 Logisticloss: 0.04374825424321
iteration: 52 Logisticloss: 0.043489056109948285
iteration: 53 Logisticloss: 0.04323178299512369
iteration: 54 Logisticloss: 0.04297641403017401
iteration: 55 Logisticloss: 0.04272292906564282
iteration: 56 Logisticloss: 0.042471308621133866
iteration: 57 Logisticloss: 0.04222153384024967
iteration: 58 Logisticloss: 0.0419735864499052
iteration: 59 Logisticloss: 0.041727448723487194
iteration: 60 Logisticloss: 0.041483103447397016

```

Output_logistic_test.txt

```

iteration: 61 Logisticloss: 0.04124053389057426
iteration: 62 Logisticloss: 0.04099972377664817
iteration: 63 Logisticloss: 0.04076065725840809
iteration: 64 Logisticloss: 0.040523318894321717
iteration: 65 Logisticloss: 0.04028769362686331
iteration: 66 Logisticloss: 0.040053766762442176
iteration: 67 Logisticloss: 0.03982152395274776
iteration: 68 Logisticloss: 0.039590951177348815
iteration: 69 Logisticloss: 0.03936203472740438
iteration: 70 Logisticloss: 0.039134761190360745
iteration: 71 Logisticloss: 0.0389091174355242
iteration: 72 Logisticloss: 0.03868509060041219
iteration: 73 Logisticloss: 0.03846266807779809
iteration: 74 Logisticloss: 0.03824183750337454
iteration: 75 Logisticloss: 0.03802258674397056
iteration: 76 Logisticloss: 0.03780490388626515
iteration: 77 Logisticloss: 0.03758877722594844
iteration: 78 Logisticloss: 0.03737419525728744
iteration: 79 Logisticloss: 0.03716114666306009
iteration: 80 Logisticloss: 0.036949620304826236
iteration: 81 Logisticloss: 0.03673960521350924
iteration: 82 Logisticloss: 0.036531090580266226
iteration: 83 Logisticloss: 0.036324065747629
iteration: 84 Logisticloss: 0.03611852020090089
iteration: 85 Logisticloss: 0.035914443559798066
iteration: 86 Logisticloss: 0.03571182557032717
iteration: 87 Logisticloss: 0.035510656096892176
iteration: 88 Logisticloss: 0.03531092511462759
iteration: 89 Logisticloss: 0.03511262270195531
iteration: 90 Logisticloss: 0.03491573903336497
iteration: 91 Logisticloss: 0.034720264372419304
iteration: 92 Logisticloss: 0.034526189064986335
iteration: 93 Logisticloss: 0.034333503532702495
iteration: 94 Logisticloss: 0.03414219826667052
iteration: 95 Logisticloss: 0.03395226382139735
iteration: 96 Logisticloss: 0.03376369080897757
iteration: 97 Logisticloss: 0.033576469893527944
iteration: 98 Logisticloss: 0.03339059178587944
iteration: 99 Logisticloss: 0.0332060472385324
[-0.00059266 -0.00033741 -0.0007278 ... 0.00010219 -0.00031244
0.00024974]

```

CROSS VALIDATION 31

```

iteration: 0 Logisticloss: 7.818698863426525
iteration: 1 Logisticloss: 0.07574777582142235
iteration: 2 Logisticloss: 0.06347983437561962
iteration: 3 Logisticloss: 0.0624105760932799
iteration: 4 Logisticloss: 0.06158579539969162
iteration: 5 Logisticloss: 0.060893973675613194
iteration: 6 Logisticloss: 0.060284365022640424
iteration: 7 Logisticloss: 0.059730042262188664
iteration: 8 Logisticloss: 0.05921520530045579
iteration: 9 Logisticloss: 0.05872989326196594

```

Output_logistic_test.txt

iteration: 10 Logisticloss: 0.058267477289763434
iteration: 11 Logisticloss: 0.05782335473040444
iteration: 12 Logisticloss: 0.05739421839232867
iteration: 13 Logisticloss: 0.05697762366395922
iteration: 14 Logisticloss: 0.056571719914775935
iteration: 15 Logisticloss: 0.05617507728504523
iteration: 16 Logisticloss: 0.05578657128967167
iteration: 17 Logisticloss: 0.05540530376160053
iteration: 18 Logisticloss: 0.05503054736301157
iteration: 19 Logisticloss: 0.05466170580305744
iteration: 20 Logisticloss: 0.05429828477633348
iteration: 21 Logisticloss: 0.053939870375499306
iteration: 22 Logisticloss: 0.05358611281398053
iteration: 23 Logisticloss: 0.05323671398577566
iteration: 24 Logisticloss: 0.052891417840770595
iteration: 25 Logisticloss: 0.05255000285486554
iteration: 26 Logisticloss: 0.052212276078580415
iteration: 27 Logisticloss: 0.05187806838895492
iteration: 28 Logisticloss: 0.05154723066857604
iteration: 29 Logisticloss: 0.051219630706011446
iteration: 30 Logisticloss: 0.05089515066271131
iteration: 31 Logisticloss: 0.0505736849884897
iteration: 32 Logisticloss: 0.05025513869503553
iteration: 33 Logisticloss: 0.049939425917284064
iteration: 34 Logisticloss: 0.049626468707823015
iteration: 35 Logisticloss: 0.04931619602116553
iteration: 36 Logisticloss: 0.04900854285365233
iteration: 37 Logisticloss: 0.04870344951164453
iteration: 38 Logisticloss: 0.04840086098603585
iteration: 39 Logisticloss: 0.048100726415321086
iteration: 40 Logisticloss: 0.047802998622775435
iteration: 41 Logisticloss: 0.0475076337159368
iteration: 42 Logisticloss: 0.047214590738686696
iteration: 43 Logisticloss: 0.04692383136791731
iteration: 44 Logisticloss: 0.046635319648139065
iteration: 45 Logisticloss: 0.04634902175849167
iteration: 46 Logisticloss: 0.046064905807525286
iteration: 47 Logisticloss: 0.045782941651863494
iteration: 48 Logisticloss: 0.04550310073546686
iteration: 49 Logisticloss: 0.045225355946724555
iteration: 50 Logisticloss: 0.044949681491018086
iteration: 51 Logisticloss: 0.04467605277675291
iteration: 52 Logisticloss: 0.04440444631314529
iteration: 53 Logisticloss: 0.044134839618298
iteration: 54 Logisticloss: 0.043867211136305484
iteration: 55 Logisticloss: 0.043601540162303616
iteration: 56 Logisticloss: 0.04333780677452909
iteration: 57 Logisticloss: 0.043075991772578245
iteration: 58 Logisticloss: 0.04281607662116435
iteration: 59 Logisticloss: 0.04255804339876365
iteration: 60 Logisticloss: 0.04230187475062006
iteration: 61 Logisticloss: 0.04204755384564706

Output_logistic_test.txt

```

iteration: 62 Logisticloss: 0.041795064336822306
iteration: 63 Logisticloss: 0.041544390324724005
iteration: 64 Logisticloss: 0.041295516323898655
iteration: 65 Logisticloss: 0.04104842723179111
iteration: 66 Logisticloss: 0.04080310829999872
iteration: 67 Logisticloss: 0.0405595451076415
iteration: 68 Logisticloss: 0.040317723536664886
iteration: 69 Logisticloss: 0.04007762974891335
iteration: 70 Logisticloss: 0.03983925016483343
iteration: 71 Logisticloss: 0.03960257144368019
iteration: 72 Logisticloss: 0.03936758046511652
iteration: 73 Logisticloss: 0.039134264312107765
iteration: 74 Logisticloss: 0.038902610255024575
iteration: 75 Logisticloss: 0.038672605736877703
iteration: 76 Logisticloss: 0.03844423835961607
iteration: 77 Logisticloss: 0.03821749587142763
iteration: 78 Logisticloss: 0.037992366154988806
iteration: 79 Logisticloss: 0.03776883721661348
iteration: 80 Logisticloss: 0.03754689717625814
iteration: 81 Logisticloss: 0.03732653425834342
iteration: 82 Logisticloss: 0.03710773678335558
iteration: 83 Logisticloss: 0.03689049316019511
iteration: 84 Logisticloss: 0.036674791879241726
iteration: 85 Logisticloss: 0.03646062150610687
iteration: 86 Logisticloss: 0.036247970676046855
iteration: 87 Logisticloss: 0.03603682808901113
iteration: 88 Logisticloss: 0.0358271825053005
iteration: 89 Logisticloss: 0.035619022741811474
iteration: 90 Logisticloss: 0.03541233766884337
iteration: 91 Logisticloss: 0.03520711620744436
iteration: 92 Logisticloss: 0.03500334732727355
iteration: 93 Logisticloss: 0.03480102004495576
iteration: 94 Logisticloss: 0.03460012342290514
iteration: 95 Logisticloss: 0.03440064656859412
iteration: 96 Logisticloss: 0.03420257863424335
iteration: 97 Logisticloss: 0.034005908816907814
iteration: 98 Logisticloss: 0.033810626358934344
iteration: 99 Logisticloss: 0.033616720548764745
[-0.00070765 0.00047103 -0.00028293 ... 0.00018105 -0.00014009
 0.00029631]

```

CROSS VALIDATION 32

```

iteration: 0 Logisticloss: 0.29607106150822143
iteration: 1 Logisticloss: 0.06659730285317027
iteration: 2 Logisticloss: 0.06463188867387108
iteration: 3 Logisticloss: 0.06320910066286493
iteration: 4 Logisticloss: 0.06208500129011898
iteration: 5 Logisticloss: 0.06114754785042079
iteration: 6 Logisticloss: 0.0603361944754543
iteration: 7 Logisticloss: 0.05961482218953478
iteration: 8 Logisticloss: 0.058960355814433194
iteration: 9 Logisticloss: 0.058357281409137284
iteration: 10 Logisticloss: 0.057794744690610814

```


Output_logistic_test.txt

iteration: 11 Logisticloss: 0.05726490347641362
iteration: 12 Logisticloss: 0.05676193924031839
iteration: 13 Logisticloss: 0.05628143711160455
iteration: 14 Logisticloss: 0.05581998237256103
iteration: 15 Logisticloss: 0.055374889550022656
iteration: 16 Logisticloss: 0.05494401560881409
iteration: 17 Logisticloss: 0.0545256281181875
iteration: 18 Logisticloss: 0.05411831030311483
iteration: 19 Logisticloss: 0.05372089141894451
iteration: 20 Logisticloss: 0.0533323948693704
iteration: 21 Logisticloss: 0.05295199898464934
iteration: 22 Logisticloss: 0.05257900698202335
iteration: 23 Logisticloss: 0.05221282368494383
iteration: 24 Logisticloss: 0.05185293728457494
iteration: 25 Logisticloss: 0.05149890490943816
iteration: 26 Logisticloss: 0.05115034110367406
iteration: 27 Logisticloss: 0.05080690855001611
iteration: 28 Logisticloss: 0.050468310541774634
iteration: 29 Logisticloss: 0.050134284829742574
iteration: 30 Logisticloss: 0.04980459855890079
iteration: 31 Logisticloss: 0.049479044075594066
iteration: 32 Logisticloss: 0.049157435435004296
iteration: 33 Logisticloss: 0.04883960547582028
iteration: 34 Logisticloss: 0.04852540335721003
iteration: 35 Logisticloss: 0.04821469247484656
iteration: 36 Logisticloss: 0.04790734868947189
iteration: 37 Logisticloss: 0.04760325881452063
iteration: 38 Logisticloss: 0.04730231931955066
iteration: 39 Logisticloss: 0.047004435214299964
iteration: 40 Logisticloss: 0.0467095190846039
iteration: 41 Logisticloss: 0.046417490256531246
iteration: 42 Logisticloss: 0.04612827406921772
iteration: 43 Logisticloss: 0.04584180124020101
iteration: 44 Logisticloss: 0.045558007309765364
iteration: 45 Logisticloss: 0.04527683215300649
iteration: 46 Logisticloss: 0.044998219550136206
iteration: 47 Logisticloss: 0.04472211680703189
iteration: 48 Logisticloss: 0.04444847441926784
iteration: 49 Logisticloss: 0.044177245773885404
iteration: 50 Logisticloss: 0.043908386884010185
iteration: 51 Logisticloss: 0.043641856152135665
iteration: 52 Logisticloss: 0.0433776141584917
iteration: 53 Logisticloss: 0.04311562347141761
iteration: 54 Logisticloss: 0.04285584847708673
iteration: 55 Logisticloss: 0.04259825522628866
iteration: 56 Logisticloss: 0.042342811296283256
iteration: 57 Logisticloss: 0.04208948566600122
iteration: 58 Logisticloss: 0.041838248603090475
iteration: 59 Logisticloss: 0.041589071561499144
iteration: 60 Logisticloss: 0.04134192708845147
iteration: 61 Logisticloss: 0.04109678873981498
iteration: 62 Logisticloss: 0.04085363100298019

Output_logistic_test.txt

```

iteration: 63 Logisticloss: 0.04061242922648094
iteration: 64 Logisticloss: 0.040373159555676344
iteration: 65 Logisticloss: 0.04013579887389392
iteration: 66 Logisticloss: 0.039900324748506945
iteration: 67 Logisticloss: 0.03966671538147626
iteration: 68 Logisticloss: 0.03943494956394367
iteration: 69 Logisticloss: 0.039205006634509265
iteration: 70 Logisticloss: 0.03897686644086609
iteration: 71 Logisticloss: 0.03875050930450231
iteration: 72 Logisticloss: 0.03852591598821249
iteration: 73 Logisticloss: 0.03830306766618731
iteration: 74 Logisticloss: 0.038081945896475775
iteration: 75 Logisticloss: 0.037862532595635684
iteration: 76 Logisticloss: 0.037644810015406795
iteration: 77 Logisticloss: 0.037428760721258385
iteration: 78 Logisticloss: 0.037214367572677216
iteration: 79 Logisticloss: 0.0370016137050751
iteration: 80 Logisticloss: 0.036790482513206865
iteration: 81 Logisticloss: 0.036580957635998966
iteration: 82 Logisticloss: 0.03637302294269853
iteration: 83 Logisticloss: 0.036166662520259546
iteration: 84 Logisticloss: 0.03596186066189053
iteration: 85 Logisticloss: 0.03575860185669271
iteration: 86 Logisticloss: 0.03555687078032423
iteration: 87 Logisticloss: 0.03535665228662897
iteration: 88 Logisticloss: 0.03515793140017351
iteration: 89 Logisticloss: 0.03496069330963821
iteration: 90 Logisticloss: 0.034764923362012055
iteration: 91 Logisticloss: 0.03457060705754249
iteration: 92 Logisticloss: 0.03437773004539409
iteration: 93 Logisticloss: 0.03418627811997199
iteration: 94 Logisticloss: 0.03399623721786652
iteration: 95 Logisticloss: 0.033807593415378014
iteration: 96 Logisticloss: 0.033620332926580815
iteration: 97 Logisticloss: 0.03343444210188766
iteration: 98 Logisticloss: 0.033249907427075114
iteration: 99 Logisticloss: 0.03306671552273304
[-3.77667218e-04  7.17231537e-04  6.20477589e-06 ...  1.95364930e-04
-1.35670128e-04  3.03517549e-04]

```

CROSS VALIDATION 33

```

iteration: 0 Logisticloss: 7.887299136131007
iteration: 1 Logisticloss: 0.07686167801129663
iteration: 2 Logisticloss: 0.06368307684026767
iteration: 3 Logisticloss: 0.06261069386267393
iteration: 4 Logisticloss: 0.06177191515211541
iteration: 5 Logisticloss: 0.061064834638401275
iteration: 6 Logisticloss: 0.06044103011526028
iteration: 7 Logisticloss: 0.059874075846740094
iteration: 8 Logisticloss: 0.05934815244648012
iteration: 9 Logisticloss: 0.05885313563035242
iteration: 10 Logisticloss: 0.05838220843609594
iteration: 11 Logisticloss: 0.05793059324824969

```

Output_logistic_test.txt

```

iteration: 12 Logisticloss: 0.05749483111952959
iteration: 13 Logisticloss: 0.05707234936792016
iteration: 14 Logisticloss: 0.056661190397267795
iteration: 15 Logisticloss: 0.05625983523389858
iteration: 16 Logisticloss: 0.05586708504781716
iteration: 17 Logisticloss: 0.055481979437661845
iteration: 18 Logisticloss: 0.05510373873939616
iteration: 19 Logisticloss: 0.054731722452080536
iteration: 20 Logisticloss: 0.05436539872940367
iteration: 21 Logisticloss: 0.05400432162632007
iteration: 22 Logisticloss: 0.053648113881155035
iteration: 23 Logisticloss: 0.05329645371447137
iteration: 24 Logisticloss: 0.052949064586402216
iteration: 25 Logisticloss: 0.0526057071626697
iteration: 26 Logisticloss: 0.05226617295002553
iteration: 27 Logisticloss: 0.05193027920787841
iteration: 28 Logisticloss: 0.05159786484571448
iteration: 29 Logisticloss: 0.05126878708934978
iteration: 30 Logisticloss: 0.050942918752166715
iteration: 31 Logisticloss: 0.05062014598635483
iteration: 32 Logisticloss: 0.050300366417938024
iteration: 33 Logisticloss: 0.04998348759086849
iteration: 34 Logisticloss: 0.04966942566169494
iteration: 35 Logisticloss: 0.049358104298663635
iteration: 36 Logisticloss: 0.04904945374859976
iteration: 37 Logisticloss: 0.04874341004225572
iteration: 38 Logisticloss: 0.04843991431453601
iteration: 39 Logisticloss: 0.04813891222050191
iteration: 40 Logisticloss: 0.04784035343160871
iteration: 41 Logisticloss: 0.04754419119945214
iteration: 42 Logisticloss: 0.04725038197655823
iteration: 43 Logisticloss: 0.04695888508556814
iteration: 44 Logisticloss: 0.04666966242963753
iteration: 45 Logisticloss: 0.046382678238064357
iteration: 46 Logisticloss: 0.046097898842134506
iteration: 47 Logisticloss: 0.04581529247697327
iteration: 48 Logisticloss: 0.0455348291058519
iteration: 49 Logisticloss: 0.045256480263942224
iteration: 50 Logisticloss: 0.044980218918966704
iteration: 51 Logisticloss: 0.044706019346568954
iteration: 52 Logisticloss: 0.04443385701854624
iteration: 53 Logisticloss: 0.04416370850235142
iteration: 54 Logisticloss: 0.04389555137049594
iteration: 55 Logisticloss: 0.04362936411867453
iteration: 56 Logisticloss: 0.043365126091593834
iteration: 57 Logisticloss: 0.043102817415622746
iteration: 58 Logisticloss: 0.042842418937500286
iteration: 59 Logisticloss: 0.04258391216843508
iteration: 60 Logisticloss: 0.042327279233017684
iteration: 61 Logisticloss: 0.04207250282243891
iteration: 62 Logisticloss: 0.041819566151572375
iteration: 63 Logisticloss: 0.04156845291953276

```

Output_logistic_test.txt

```

iteration: 64 Logisticloss: 0.04131914727336991
iteration: 65 Logisticloss: 0.04107163377459908
iteration: 66 Logisticloss: 0.040825897368303554
iteration: 67 Logisticloss: 0.040581923354577915
iteration: 68 Logisticloss: 0.040339697362105645
iteration: 69 Logisticloss: 0.04009920532368946
iteration: 70 Logisticloss: 0.03986043345357404
iteration: 71 Logisticloss: 0.039623368226417134
iteration: 72 Logisticloss: 0.03938799635778256
iteration: 73 Logisticloss: 0.039154304786041816
iteration: 74 Logisticloss: 0.038922280655583084
iteration: 75 Logisticloss: 0.038691911301237426
iteration: 76 Logisticloss: 0.038463184233841444
iteration: 77 Logisticloss: 0.03823608712686328
iteration: 78 Logisticloss: 0.038010607804027007
iteration: 79 Logisticloss: 0.03778673422787605
iteration: 80 Logisticloss: 0.03756445448922186
iteration: 81 Logisticloss: 0.03734375679742979
iteration: 82 Logisticloss: 0.03712462947149678
iteration: 83 Logisticloss: 0.03690706093188085
iteration: 84 Logisticloss: 0.036691039693044165
iteration: 85 Logisticloss: 0.03647655435667505
iteration: 86 Logisticloss: 0.036263593605556296
iteration: 87 Logisticloss: 0.03605214619804934
iteration: 88 Logisticloss: 0.03584220096316524
iteration: 89 Logisticloss: 0.035633746796195374
iteration: 90 Logisticloss: 0.03542677265487527
iteration: 91 Logisticloss: 0.035221267556056784
iteration: 92 Logisticloss: 0.035017220572863696
iteration: 93 Logisticloss: 0.03481462083230742
iteration: 94 Logisticloss: 0.03461345751333902
iteration: 95 Logisticloss: 0.03441371984531515
iteration: 96 Logisticloss: 0.034215397106854825
iteration: 97 Logisticloss: 0.034018478625064824
iteration: 98 Logisticloss: 0.03382295377511142
iteration: 99 Logisticloss: 0.03362881198011595
[-0.00071176 0.00047006 -0.00028087 ... 0.00019684 -0.00013799
 0.00030017]

```

CROSS VALIDATION 34

```

iteration: 0 Logisticloss: 12.102513708567455
iteration: 1 Logisticloss: 0.06312045284928772
iteration: 2 Logisticloss: 0.0614287687002276
iteration: 3 Logisticloss: 0.060365709084255065
iteration: 4 Logisticloss: 0.05955297451730059
iteration: 5 Logisticloss: 0.05887308948960343
iteration: 6 Logisticloss: 0.058274627363370586
iteration: 7 Logisticloss: 0.05773079662720459
iteration: 8 Logisticloss: 0.057226020923164665
iteration: 9 Logisticloss: 0.05675052217479167
iteration: 10 Logisticloss: 0.056297801664264215
iteration: 11 Logisticloss: 0.05586334457253252
iteration: 12 Logisticloss: 0.05544390108305185

```

Output_logistic_test.txt

iteration: 13 Logisticloss: 0.05503706286161927
iteration: 14 Logisticloss: 0.05464100118088791
iteration: 15 Logisticloss: 0.054254298380445466
iteration: 16 Logisticloss: 0.05387583567692842
iteration: 17 Logisticloss: 0.053504716301396214
iteration: 18 Logisticloss: 0.053140211511661574
iteration: 19 Logisticloss: 0.05278172183761581
iteration: 20 Logisticloss: 0.05242874872280848
iteration: 21 Logisticloss: 0.05208087341695858
iteration: 22 Logisticloss: 0.0517377410243271
iteration: 23 Logisticloss: 0.05139904828224749
iteration: 24 Logisticloss: 0.05106453408078572
iteration: 25 Logisticloss: 0.050733972025414034
iteration: 26 Logisticloss: 0.050407164542100945
iteration: 27 Logisticloss: 0.05008393816065916
iteration: 28 Logisticloss: 0.04976413970793996
iteration: 29 Logisticloss: 0.049447633210626174
iteration: 30 Logisticloss: 0.04913429735655736
iteration: 31 Logisticloss: 0.04882402339943908
iteration: 32 Logisticloss: 0.048516713418324135
iteration: 33 Logisticloss: 0.048212278863064055
iteration: 34 Logisticloss: 0.04791063933186405
iteration: 35 Logisticloss: 0.04761172153844067
iteration: 36 Logisticloss: 0.04731545843500275
iteration: 37 Logisticloss: 0.04702178846402524
iteration: 38 Logisticloss: 0.04673065491704491
iteration: 39 Logisticloss: 0.046442005382838866
iteration: 40 Logisticloss: 0.046155791270609925
iteration: 41 Logisticloss: 0.04587196739640127
iteration: 42 Logisticloss: 0.04559049162304061
iteration: 43 Logisticloss: 0.04531132454558675
iteration: 44 Logisticloss: 0.045034429215605486
iteration: 45 Logisticloss: 0.04475977089870265
iteration: 46 Logisticloss: 0.044487316860642
iteration: 47 Logisticloss: 0.04421703617811474
iteration: 48 Logisticloss: 0.043948899570837474
iteration: 49 Logisticloss: 0.043682879252159995
iteration: 50 Logisticloss: 0.04341894879578444
iteration: 51 Logisticloss: 0.0431570830165481
iteration: 52 Logisticloss: 0.042897257863516655
iteration: 53 Logisticloss: 0.04263945032388086
iteration: 54 Logisticloss: 0.042383638336359664
iteration: 55 Logisticloss: 0.042129800712987824
iteration: 56 Logisticloss: 0.04187791706831858
iteration: 57 Logisticloss: 0.04162796775519709
iteration: 58 Logisticloss: 0.041379933806372046
iteration: 59 Logisticloss: 0.04113379688130523
iteration: 60 Logisticloss: 0.04088953921761965
iteration: 61 Logisticloss: 0.040647143586696285
iteration: 62 Logisticloss: 0.04040659325298938
iteration: 63 Logisticloss: 0.04016787193668224
iteration: 64 Logisticloss: 0.03993096377934962

Output_logistic_test.txt

```

iteration: 65 Logisticloss: 0.03969585331233382
iteration: 66 Logisticloss: 0.039462525427573295
iteration: 67 Logisticloss: 0.03923096535065437
iteration: 68 Logisticloss: 0.0390011586158818
iteration: 69 Logisticloss: 0.03877309104318646
iteration: 70 Logisticloss: 0.038546748716709545
iteration: 71 Logisticloss: 0.038322117964919175
iteration: 72 Logisticloss: 0.038099185342131324
iteration: 73 Logisticloss: 0.0378779376113209
iteration: 74 Logisticloss: 0.03765836172812022
iteration: 75 Logisticloss: 0.0374404448259134
iteration: 76 Logisticloss: 0.03722417420194415
iteration: 77 Logisticloss: 0.03700953730436325
iteration: 78 Logisticloss: 0.03679652172014871
iteration: 79 Logisticloss: 0.03658511516383921
iteration: 80 Logisticloss: 0.036375305467025616
iteration: 81 Logisticloss: 0.03616708056855263
iteration: 82 Logisticloss: 0.03596042850538475
iteration: 83 Logisticloss: 0.03575533740409712
iteration: 84 Logisticloss: 0.035551795472953625
iteration: 85 Logisticloss: 0.03534979099453876
iteration: 86 Logisticloss: 0.03514931231891211
iteration: 87 Logisticloss: 0.03495034785725722
iteration: 88 Logisticloss: 0.034752886075998635
iteration: 89 Logisticloss: 0.03455691549136232
iteration: 90 Logisticloss: 0.03436242466435777
iteration: 91 Logisticloss: 0.03416940219616001
iteration: 92 Logisticloss: 0.03397783672387249
iteration: 93 Logisticloss: 0.03378771691665221
iteration: 94 Logisticloss: 0.0335990314721799
iteration: 95 Logisticloss: 0.033411769113459215
iteration: 96 Logisticloss: 0.03322591858592914
iteration: 97 Logisticloss: 0.03304146865487577
iteration: 98 Logisticloss: 0.03285840810312921
iteration: 99 Logisticloss: 0.03267672572903278
[-4.47020474e-04  8.57312159e-05 -8.11123958e-04 ...  3.18117369e-04
 -2.53465917e-04  3.03922834e-04]

```

CROSS VALIDATION 35

```

iteration: 0 Logisticloss: 11.433443724420929
iteration: 1 Logisticloss: 0.07633496410007537
iteration: 2 Logisticloss: 0.06759500739199406
iteration: 3 Logisticloss: 0.06669593795278306
iteration: 4 Logisticloss: 0.06600283059461973
iteration: 5 Logisticloss: 0.06540593791398172
iteration: 6 Logisticloss: 0.06486389809497135
iteration: 7 Logisticloss: 0.06435714159679026
iteration: 8 Logisticloss: 0.06387504701166907
iteration: 9 Logisticloss: 0.06341128251796489
iteration: 10 Logisticloss: 0.06296180433688083
iteration: 11 Logisticloss: 0.06252388930121036
iteration: 12 Logisticloss: 0.062095624440375745
iteration: 13 Logisticloss: 0.06167561868812038

```

Output_logistic_test.txt

```

iteration: 14 Logisticloss: 0.06126283088085761
iteration: 15 Logisticloss: 0.06085646240379966
iteration: 16 Logisticloss: 0.06045588760264092
iteration: 17 Logisticloss: 0.06006060719745911
iteration: 18 Logisticloss: 0.059670216215837873
iteration: 19 Logisticloss: 0.05928438137820289
iteration: 20 Logisticloss: 0.05890282480523199
iteration: 21 Logisticloss: 0.058525312055820344
iteration: 22 Logisticloss: 0.05815164319503171
iteration: 23 Logisticloss: 0.05778164602271422
iteration: 24 Logisticloss: 0.05741517086946464
iteration: 25 Logisticloss: 0.05705208654730428
iteration: 26 Logisticloss: 0.05669227716314257
iteration: 27 Logisticloss: 0.056335639585263914
iteration: 28 Logisticloss: 0.055982081409946455
iteration: 29 Logisticloss: 0.055631519315302816
iteration: 30 Logisticloss: 0.0552838777179498
iteration: 31 Logisticloss: 0.054939087668714706
iteration: 32 Logisticloss: 0.054597085938659244
iteration: 33 Logisticloss: 0.0542578142578498
iteration: 34 Logisticloss: 0.053921218677638945
iteration: 35 Logisticloss: 0.05358724903351688
iteration: 36 Logisticloss: 0.05325585849038579
iteration: 37 Logisticloss: 0.052927003155799075
iteration: 38 Logisticloss: 0.05260064174956026
iteration: 39 Logisticloss: 0.052276735320309776
iteration: 40 Logisticloss: 0.05195524700148067
iteration: 41 Logisticloss: 0.05163614180039351
iteration: 42 Logisticloss: 0.051319386415368116
iteration: 43 Logisticloss: 0.051004949076618025
iteration: 44 Logisticloss: 0.05069279940740933
iteration: 45 Logisticloss: 0.050382908302547255
iteration: 46 Logisticloss: 0.050075247821726884
iteration: 47 Logisticloss: 0.04976979109567403
iteration: 48 Logisticloss: 0.04946651224332086
iteration: 49 Logisticloss: 0.04916538629852751
iteration: 50 Logisticloss: 0.04886638914507931
iteration: 51 Logisticloss: 0.0485694974588746
iteration: 52 Logisticloss: 0.04827468865637206
iteration: 53 Logisticloss: 0.047981940848495774
iteration: 54 Logisticloss: 0.047691232799307315
iteration: 55 Logisticloss: 0.04740254388884637
iteration: 56 Logisticloss: 0.047115854079621516
iteration: 57 Logisticloss: 0.04683114388630069
iteration: 58 Logisticloss: 0.04654839434820906
iteration: 59 Logisticloss: 0.04626758700429248
iteration: 60 Logisticloss: 0.045988703870248185
iteration: 61 Logisticloss: 0.045711727417561264
iteration: 62 Logisticloss: 0.045436640554219546
iteration: 63 Logisticloss: 0.04516342660690664
iteration: 64 Logisticloss: 0.044892069304498294
iteration: 65 Logisticloss: 0.04462255276270931

```

Output_logistic_test.txt

```

iteration: 66 Logisticloss: 0.04435486146975686
iteration: 67 Logisticloss: 0.04408898027292288
iteration: 68 Logisticloss: 0.043824894365913115
iteration: 69 Logisticloss: 0.04356258927692327
iteration: 70 Logisticloss: 0.043302050857334386
iteration: 71 Logisticloss: 0.043043265270968696
iteration: 72 Logisticloss: 0.04278621898384757
iteration: 73 Logisticloss: 0.04253089875439954
iteration: 74 Logisticloss: 0.04227729162407383
iteration: 75 Logisticloss: 0.042025384908321174
iteration: 76 Logisticloss: 0.04177516618790812
iteration: 77 Logisticloss: 0.04152662330053624
iteration: 78 Logisticloss: 0.04127974433274155
iteration: 79 Logisticloss: 0.04103451761205269
iteration: 80 Logisticloss: 0.04079093169938961
iteration: 81 Logisticloss: 0.04054897538168699
iteration: 82 Logisticloss: 0.04030863766472872
iteration: 83 Logisticloss: 0.040069907766181995
iteration: 84 Logisticloss: 0.03983277510882068
iteration: 85 Logisticloss: 0.03959722931392891
iteration: 86 Logisticloss: 0.03936326019487775
iteration: 87 Logisticloss: 0.03913085775086731
iteration: 88 Logisticloss: 0.03890001216082862
iteration: 89 Logisticloss: 0.03867071377747944
iteration: 90 Logisticloss: 0.03844295312152873
iteration: 91 Logisticloss: 0.038216720876024894
iteration: 92 Logisticloss: 0.03799200788084348
iteration: 93 Logisticloss: 0.037768805127309034
iteration: 94 Logisticloss: 0.03754710375294762
iteration: 95 Logisticloss: 0.03732689503636491
iteration: 96 Logisticloss: 0.03710817039224613
iteration: 97 Logisticloss: 0.03689092136647298
iteration: 98 Logisticloss: 0.0366751396313536
iteration: 99 Logisticloss: 0.03646081698096127
[-8.14647734e-04 -1.50502250e-04 -7.15403492e-04 ... 6.65819572e-05
-1.50732376e-04 2.93879444e-04]

```

CROSS VALIDATION 36

```

iteration: 0 Logisticloss: 7.8862814740564255
iteration: 1 Logisticloss: 0.07685273609898581
iteration: 2 Logisticloss: 0.0636840158760273
iteration: 3 Logisticloss: 0.06261136040992045
iteration: 4 Logisticloss: 0.06177244296136517
iteration: 5 Logisticloss: 0.06106528047780105
iteration: 6 Logisticloss: 0.06044142353664601
iteration: 7 Logisticloss: 0.059874434298893754
iteration: 8 Logisticloss: 0.059348487149531795
iteration: 9 Logisticloss: 0.05885345425957285
iteration: 10 Logisticloss: 0.05838251649682789
iteration: 11 Logisticloss: 0.05793089484301856
iteration: 12 Logisticloss: 0.05749512940513444
iteration: 13 Logisticloss: 0.05707264684237055
iteration: 14 Logisticloss: 0.05666148908768114

```


Output_logistic_test.txt

```

iteration: 15 Logisticloss: 0.05626013682391652
iteration: 16 Logisticloss: 0.055867390966584926
iteration: 17 Logisticloss: 0.055482290923547145
iteration: 18 Logisticloss: 0.05510405688662445
iteration: 19 Logisticloss: 0.05473204824552916
iteration: 20 Logisticloss: 0.05436573307101022
iteration: 21 Logisticloss: 0.05400466535543995
iteration: 22 Logisticloss: 0.05364846779047946
iteration: 23 Logisticloss: 0.05329681856264022
iteration: 24 Logisticloss: 0.05294944110812289
iteration: 25 Logisticloss: 0.05260609607693245
iteration: 26 Logisticloss: 0.05226657496684958
iteration: 27 Logisticloss: 0.05193069503391374
iteration: 28 Logisticloss: 0.051598295188943585
iteration: 29 Logisticloss: 0.0512692326630771
iteration: 30 Logisticloss: 0.05094338027843907
iteration: 31 Logisticloss: 0.050620624198925046
iteration: 32 Logisticloss: 0.050300862064859016
iteration: 33 Logisticloss: 0.04998400143678807
iteration: 34 Logisticloss: 0.049669958489904895
iteration: 35 Logisticloss: 0.04935865691294867
iteration: 36 Logisticloss: 0.049050026974920974
iteration: 37 Logisticloss: 0.0487440047302976
iteration: 38 Logisticloss: 0.04844053133914088
iteration: 39 Logisticloss: 0.04813955248301053
iteration: 40 Logisticloss: 0.04784101786112302
iteration: 41 Logisticloss: 0.047544880754033604
iteration: 42 Logisticloss: 0.04725109764437241
iteration: 43 Logisticloss: 0.046959627885984664
iteration: 44 Logisticloss: 0.04667043341429299
iteration: 45 Logisticloss: 0.04638347849189488
iteration: 46 Logisticloss: 0.046098729484382796
iteration: 47 Logisticloss: 0.04581615466217549
iteration: 48 Logisticloss: 0.04553572402480752
iteration: 49 Logisticloss: 0.045257409144670524
iteration: 50 Logisticloss: 0.04498118302765261
iteration: 51 Logisticloss: 0.044707019988500414
iteration: 52 Logisticloss: 0.04443489553904538
iteration: 53 Logisticloss: 0.04416478628770099
iteration: 54 Logisticloss: 0.04389666984886225
iteration: 55 Logisticloss: 0.043630524761028404
iteration: 56 Logisticloss: 0.0433663304126302
iteration: 57 Logisticloss: 0.04310406697467968
iteration: 58 Logisticloss: 0.04284371533947803
iteration: 59 Logisticloss: 0.04258525706471551
iteration: 60 Logisticloss: 0.042328674322384185
iteration: 61 Logisticloss: 0.042073949851997194
iteration: 62 Logisticloss: 0.041821066917671575
iteration: 63 Logisticloss: 0.04157000926868734
iteration: 64 Logisticloss: 0.04132076110318133
iteration: 65 Logisticloss: 0.04107330703467724
iteration: 66 Logisticloss: 0.04082763206118743

```

Output_logistic_test.txt

```

iteration: 67 Logisticloss: 0.04058372153665451
iteration: 68 Logisticloss: 0.04034156114452635
iteration: 69 Logisticloss: 0.040101136873283434
iteration: 70 Logisticloss: 0.03986243499375679
iteration: 71 Logisticloss: 0.03962544203809362
iteration: 72 Logisticloss: 0.03939014478024345
iteration: 73 Logisticloss: 0.03915653021785118
iteration: 74 Logisticloss: 0.03892458555545616
iteration: 75 Logisticloss: 0.038694298188906746
iteration: 76 Logisticloss: 0.038465655690909296
iteration: 77 Logisticloss: 0.03823864579763869
iteration: 78 Logisticloss: 0.038013256396345035
iteration: 79 Logisticloss: 0.037789475513896956
iteration: 80 Logisticloss: 0.03756729130620809
iteration: 81 Logisticloss: 0.037346692048497734
iteration: 82 Logisticloss: 0.03712766612634111
iteration: 83 Logisticloss: 0.03691020202746803
iteration: 84 Logisticloss: 0.03669428833427244
iteration: 85 Logisticloss: 0.036479913716997804
iteration: 86 Logisticloss: 0.03626706692756507
iteration: 87 Logisticloss: 0.0360557367940135
iteration: 88 Logisticloss: 0.03584591221552435
iteration: 89 Logisticloss: 0.03563758215800066
iteration: 90 Logisticloss: 0.03543073565017629
iteration: 91 Logisticloss: 0.035225361780229045
iteration: 92 Logisticloss: 0.03502144969287324
iteration: 93 Logisticloss: 0.03481898858690801
iteration: 94 Logisticloss: 0.03461796771319742
iteration: 95 Logisticloss: 0.0344183763730599
iteration: 96 Logisticloss: 0.03422020391704386
iteration: 97 Logisticloss: 0.034023439744067095
iteration: 98 Logisticloss: 0.033828073300897515
iteration: 99 Logisticloss: 0.03363409408195294
[-0.00071183 0.00047009 -0.00028078 ... 0.00019683 -0.00013805
 0.00030016]

```

CROSS VALIDATION 37

```

iteration: 0 Logisticloss: 7.886624128190181
iteration: 1 Logisticloss: 0.0768583033172928
iteration: 2 Logisticloss: 0.06368326829422051
iteration: 3 Logisticloss: 0.0626109719584654
iteration: 4 Logisticloss: 0.06177223132316388
iteration: 5 Logisticloss: 0.06106516987569523
iteration: 6 Logisticloss: 0.06044137648415788
iteration: 7 Logisticloss: 0.059874430051174016
iteration: 8 Logisticloss: 0.05934851328412941
iteration: 9 Logisticloss: 0.05885350288867131
iteration: 10 Logisticloss: 0.05838258238076125
iteration: 11 Logisticloss: 0.05793097437517998
iteration: 12 Logisticloss: 0.05749522003138994
iteration: 13 Logisticloss: 0.05707274671212735
iteration: 14 Logisticloss: 0.05666159683539081
iteration: 15 Logisticloss: 0.056260251427437714

```

Output_logistic_test.txt

iteration: 16 Logisticloss: 0.05586751165261644
iteration: 17 Logisticloss: 0.05548241710285746
iteration: 18 Logisticloss: 0.05510418810869537
iteration: 19 Logisticloss: 0.054732184166172156
iteration: 20 Logisticloss: 0.054365873428848674
iteration: 21 Logisticloss: 0.05400480995457282
iteration: 22 Logisticloss: 0.05364861648753284
iteration: 23 Logisticloss: 0.05329697125698587
iteration: 24 Logisticloss: 0.05294959773441589
iteration: 25 Logisticloss: 0.05260625659937087
iteration: 26 Logisticloss: 0.05226673937472858
iteration: 27 Logisticloss: 0.05193086333816468
iteration: 28 Logisticloss: 0.05159846741943021
iteration: 29 Logisticloss: 0.05126940886647974
iteration: 30 Logisticloss: 0.05094356051659985
iteration: 31 Logisticloss: 0.050620808547557884
iteration: 32 Logisticloss: 0.050301050612550746
iteration: 33 Logisticloss: 0.04998419428423333
iteration: 34 Logisticloss: 0.04967015574933081
iteration: 35 Logisticloss: 0.04935885870769433
iteration: 36 Logisticloss: 0.049050233439144206
iteration: 37 Logisticloss: 0.048744216008787276
iteration: 38 Logisticloss: 0.04844074758721671
iteration: 39 Logisticloss: 0.04813977386649698
iteration: 40 Logisticloss: 0.0478412445563854
iteration: 41 Logisticloss: 0.04754511294806695
iteration: 42 Logisticloss: 0.047251335534935955
iteration: 43 Logisticloss: 0.04695987168177499
iteration: 44 Logisticloss: 0.04667068333515152
iteration: 45 Logisticloss: 0.0463837347690448
iteration: 46 Logisticloss: 0.04609899236069204
iteration: 47 Logisticloss: 0.0458164243924428
iteration: 48 Logisticloss: 0.04553600087606943
iteration: 49 Logisticloss: 0.04525769339652679
iteration: 50 Logisticloss: 0.044981474972608675
iteration: 51 Logisticloss: 0.04470731993232547
iteration: 52 Logisticloss: 0.044435203801144664
iteration: 53 Logisticloss: 0.044165103201501514
iteration: 54 Logisticloss: 0.043896995762211274
iteration: 55 Logisticloss: 0.04363086003660359
iteration: 56 Logisticloss: 0.04336667542836138
iteration: 57 Logisticloss: 0.04310442212418156
iteration: 58 Logisticloss: 0.04284408103249353
iteration: 59 Logisticloss: 0.042585633727569454
iteration: 60 Logisticloss: 0.04232906239844739
iteration: 61 Logisticloss: 0.04207434980216037
iteration: 62 Logisticloss: 0.041821479220829565
iteration: 63 Logisticloss: 0.0415704344223297
iteration: 64 Logisticloss: 0.04132119962350945
iteration: 65 Logisticloss: 0.04107375945769871
iteration: 66 Logisticloss: 0.04082809894285321
iteration: 67 Logisticloss: 0.040584203453489634

Output_logistic_test.txt

```
iteration: 68 Logisticloss: 0.040342058694174475
iteration: 69 Logisticloss: 0.04010165067506137
iteration: 70 Logisticloss: 0.0398629656892197
iteration: 71 Logisticloss: 0.03962599029161078
iteration: 72 Logisticloss: 0.03939071127958449
iteration: 73 Logisticloss: 0.03915711567478354
iteration: 74 Logisticloss: 0.03892519070635314
iteration: 75 Logisticloss: 0.03869492379536705
iteration: 76 Logisticloss: 0.0384663025403875
iteration: 77 Logisticloss: 0.038239314704087424
iteration: 78 Logisticloss: 0.03801394820086839
iteration: 79 Logisticloss: 0.037790191085415675
iteration: 80 Logisticloss: 0.037568031542136636
iteration: 81 Logisticloss: 0.03734745787543289
iteration: 82 Logisticloss: 0.037128458500762726
iteration: 83 Logisticloss: 0.03691102193645159
iteration: 84 Logisticloss: 0.03669513679621377
iteration: 85 Logisticloss: 0.03648079178234957
iteration: 86 Logisticloss: 0.03626797567958573
iteration: 87 Logisticloss: 0.03605667734952771
iteration: 88 Logisticloss: 0.035846885725695735
iteration: 89 Logisticloss: 0.03563858980911615
iteration: 90 Logisticloss: 0.03543177866444225
iteration: 91 Logisticloss: 0.03522644141657895
iteration: 92 Logisticloss: 0.035022567247786705
iteration: 93 Logisticloss: 0.034820145395240844
iteration: 94 Logisticloss: 0.0346191651490226
iteration: 95 Logisticloss: 0.03441961585051888
iteration: 96 Logisticloss: 0.03422148689120799
iteration: 97 Logisticloss: 0.03402476771180888
iteration: 98 Logisticloss: 0.03382944780177071
iteration: 99 Logisticloss: 0.033635516699081505
[-0.00071186 0.00047006 -0.0002808 ... 0.00019685 -0.00013807
 0.00030015]
```

CROSS VALIDATION 38

```
iteration: 0 Logisticloss: 11.721755335573334
iteration: 1 Logisticloss: 0.07392694990175597
iteration: 2 Logisticloss: 0.0654342323082828
iteration: 3 Logisticloss: 0.06409029868827783
iteration: 4 Logisticloss: 0.06312047219811065
iteration: 5 Logisticloss: 0.06233160559173436
iteration: 6 Logisticloss: 0.06164928603182764
iteration: 7 Logisticloss: 0.061036948406000414
iteration: 8 Logisticloss: 0.06047398630297457
iteration: 9 Logisticloss: 0.05994769680937454
iteration: 10 Logisticloss: 0.05944973215810045
iteration: 11 Logisticloss: 0.05897433587558376
iteration: 12 Logisticloss: 0.058517385613151424
iteration: 13 Logisticloss: 0.05807583777515127
iteration: 14 Logisticloss: 0.057647387756070465
iteration: 15 Logisticloss: 0.05723025293959398
iteration: 16 Logisticloss: 0.056823029060057324
```

Output_logistic_test.txt

```

iteration: 17 Logisticloss: 0.05642459220920667
iteration: 18 Logisticloss: 0.05603403023025976
iteration: 19 Logisticloss: 0.05565059359580658
iteration: 20 Logisticloss: 0.05527365953746301
iteration: 21 Logisticloss: 0.05490270539280864
iteration: 22 Logisticloss: 0.05453728849189875
iteration: 23 Logisticloss: 0.05417703076640646
iteration: 24 Logisticloss: 0.0538216068239271
iteration: 25 Logisticloss: 0.05347073460158075
iteration: 26 Logisticloss: 0.05312416796473412
iteration: 27 Logisticloss: 0.052781690790159194
iteration: 28 Logisticloss: 0.05244311219448679
iteration: 29 Logisticloss: 0.05210826265521318
iteration: 30 Logisticloss: 0.05177699083377304
iteration: 31 Logisticloss: 0.05144916095561053
iteration: 32 Logisticloss: 0.051124650635699015
iteration: 33 Logisticloss: 0.05080334906295849
iteration: 34 Logisticloss: 0.0504851554758548
iteration: 35 Logisticloss: 0.050169977875782854
iteration: 36 Logisticloss: 0.04985773193581738
iteration: 37 Logisticloss: 0.049548340070905465
iteration: 38 Logisticloss: 0.04924173064218891
iteration: 39 Logisticloss: 0.04893783727333403
iteration: 40 Logisticloss: 0.04863659826084675
iteration: 41 Logisticloss: 0.04833795606361005
iteration: 42 Logisticloss: 0.04804185685948677
iteration: 43 Logisticloss: 0.04774825015892894
iteration: 44 Logisticloss: 0.047457088467229964
iteration: 45 Logisticloss: 0.04716832698843481
iteration: 46 Logisticloss: 0.046881923365050225
iteration: 47 Logisticloss: 0.046597837448621324
iteration: 48 Logisticloss: 0.04631603109700306
iteration: 49 Logisticloss: 0.04603646799478717
iteration: 50 Logisticloss: 0.045759113493869394
iteration: 51 Logisticloss: 0.04548393447158064
iteration: 52 Logisticloss: 0.04521089920417275
iteration: 53 Logisticloss: 0.044939977253758694
iteration: 54 Logisticloss: 0.04467113936706814
iteration: 55 Logisticloss: 0.04440435738459966
iteration: 56 Logisticloss: 0.04413960415893968
iteration: 57 Logisticloss: 0.043876853481177855
iteration: 58 Logisticloss: 0.04361608001448573
iteration: 59 Logisticloss: 0.0433572592340439
iteration: 60 Logisticloss: 0.04310036737260343
iteration: 61 Logisticloss: 0.04284538137105574
iteration: 62 Logisticloss: 0.042592278833459854
iteration: 63 Logisticloss: 0.04234103798604351
iteration: 64 Logisticloss: 0.04209163763975029
iteration: 65 Logisticloss: 0.04184405715595666
iteration: 66 Logisticloss: 0.04159827641502547
iteration: 67 Logisticloss: 0.04135427578740235
iteration: 68 Logisticloss: 0.04111203610699439

```

Output_logistic_test.txt

```

iteration: 69 Logisticloss: 0.040871538646601493
iteration: 70 Logisticloss: 0.04063276509519607
iteration: 71 Logisticloss: 0.04039569753687176
iteration: 72 Logisticloss: 0.040160318431301634
iteration: 73 Logisticloss: 0.0399266105955654
iteration: 74 Logisticloss: 0.039694557187221036
iteration: 75 Logisticloss: 0.03946414168851227
iteration: 76 Logisticloss: 0.039235347891614154
iteration: 77 Logisticloss: 0.03900815988483331
iteration: 78 Logisticloss: 0.038782562039687316
iteration: 79 Logisticloss: 0.03855853899879812
iteration: 80 Logisticloss: 0.03833607566454231
iteration: 81 Logisticloss: 0.038115157188407967
iteration: 82 Logisticloss: 0.03789576896101398
iteration: 83 Logisticloss: 0.037677896602753475
iteration: 84 Logisticloss: 0.03746152595502763
iteration: 85 Logisticloss: 0.03724664307203992
iteration: 86 Logisticloss: 0.0370332342131248
iteration: 87 Logisticloss: 0.03682128583558699
iteration: 88 Logisticloss: 0.03661078458803092
iteration: 89 Logisticloss: 0.03640171730416056
iteration: 90 Logisticloss: 0.036194070997032535
iteration: 91 Logisticloss: 0.0359878328537458
iteration: 92 Logisticloss: 0.03578299023055205
iteration: 93 Logisticloss: 0.03557953064837179
iteration: 94 Logisticloss: 0.035377441788700816
iteration: 95 Logisticloss: 0.035176711489892355
iteration: 96 Logisticloss: 0.0349773277437994
iteration: 97 Logisticloss: 0.034779278692761637
iteration: 98 Logisticloss: 0.03458255262692147
iteration: 99 Logisticloss: 0.03438713798185152
[-5.61061301e-04 2.73040928e-04 4.36216044e-05 ... 3.83039708e-04
-2.50184213e-05 3.73558395e-04]

```

CROSS VALIDATION 39

```

iteration: 0 Logisticloss: 7.8854212293155195
iteration: 1 Logisticloss: 0.07684102576278742
iteration: 2 Logisticloss: 0.06368673791790914
iteration: 3 Logisticloss: 0.06261319954582671
iteration: 4 Logisticloss: 0.06177385381221557
iteration: 5 Logisticloss: 0.06106644914856233
iteration: 6 Logisticloss: 0.06044244027596602
iteration: 7 Logisticloss: 0.059875347895297505
iteration: 8 Logisticloss: 0.05934932605716612
iteration: 9 Logisticloss: 0.05885423602147317
iteration: 10 Logisticloss: 0.058383252389186784
iteration: 11 Logisticloss: 0.05793159234442454
iteration: 12 Logisticloss: 0.057495793590339885
iteration: 13 Logisticloss: 0.057073281208121114
iteration: 14 Logisticloss: 0.056662096062097426
iteration: 15 Logisticloss: 0.05626071809149721
iteration: 16 Logisticloss: 0.05586794768163584
iteration: 17 Logisticloss: 0.05548282385385845

```

Output_logistic_test.txt

iteration: 18 Logisticloss: 0.055104566512289246
iteration: 19 Logisticloss: 0.05473253482818581
iteration: 20 Logisticloss: 0.054366196703149294
iteration: 21 Logisticloss: 0.05400510599600555
iteration: 22 Logisticloss: 0.0536488852908793
iteration: 23 Logisticloss: 0.053297212685934216
iteration: 24 Logisticloss: 0.05294981154328824
iteration: 25 Logisticloss: 0.05260644244952666
iteration: 26 Logisticloss: 0.05226689684700494
iteration: 27 Logisticloss: 0.05193099194233171
iteration: 28 Logisticloss: 0.05159856660137396
iteration: 29 Logisticloss: 0.051269478013637015
iteration: 30 Logisticloss: 0.05094359896203523
iteration: 31 Logisticloss: 0.05062081557297695
iteration: 32 Logisticloss: 0.050301025450471534
iteration: 33 Logisticloss: 0.049984136119487405
iteration: 34 Logisticloss: 0.04967006372002515
iteration: 35 Logisticloss: 0.04935873190573686
iteration: 36 Logisticloss: 0.04905007091041305
iteration: 37 Logisticloss: 0.04874401675300759
iteration: 38 Logisticloss: 0.04844051055759539
iteration: 39 Logisticloss: 0.0481394979691555
iteration: 40 Logisticloss: 0.04784092864962366
iteration: 41 Logisticloss: 0.047544755841484085
iteration: 42 Logisticloss: 0.04725093598842994
iteration: 43 Logisticloss: 0.04695942840443869
iteration: 44 Logisticloss: 0.046670194984079004
iteration: 45 Logisticloss: 0.04638319994806066
iteration: 46 Logisticloss: 0.04609840961901357
iteration: 47 Logisticloss: 0.0458157922232831
iteration: 48 Logisticloss: 0.04553531771518854
iteration: 49 Logisticloss: 0.04525695762073705
iteration: 50 Logisticloss: 0.04498068489823914
iteration: 51 Logisticloss: 0.04470647381364955
iteration: 52 Logisticloss: 0.0444342998287752
iteration: 53 Logisticloss: 0.04416413950075585
iteration: 54 Logisticloss: 0.04389597039144972
iteration: 55 Logisticloss: 0.04362977098554357
iteration: 56 Logisticloss: 0.04336552061636917
iteration: 57 Logisticloss: 0.04310319939854419
iteration: 58 Logisticloss: 0.0428427881666722
iteration: 59 Logisticloss: 0.04258426841943641
iteration: 60 Logisticloss: 0.042327622268507954
iteration: 61 Logisticloss: 0.04207283239176124
iteration: 62 Logisticloss: 0.0418198819903555
iteration: 63 Logisticloss: 0.04156875474929295
iteration: 64 Logisticloss: 0.041319434801113844
iteration: 65 Logisticloss: 0.04107190669242897
iteration: 66 Logisticloss: 0.040826155353025965
iteration: 67 Logisticloss: 0.04058216606731633
iteration: 68 Logisticloss: 0.04033992444791848
iteration: 69 Logisticloss: 0.0400994164111945

Output_logistic_test.txt

```

iteration: 70 Logisticloss: 0.039860628154579546
iteration: 71 Logisticloss: 0.03962354613556129
iteration: 72 Logisticloss: 0.03938815705218159
iteration: 73 Logisticloss: 0.03915444782494809
iteration: 74 Logisticloss: 0.03892240558005366
iteration: 75 Logisticloss: 0.038692017633814385
iteration: 76 Logisticloss: 0.038463271478244444
iteration: 77 Logisticloss: 0.03823615476769566
iteration: 78 Logisticloss: 0.038010655306496006
iteration: 79 Logisticloss: 0.0377867610375283
iteration: 80 Logisticloss: 0.03756446003169502
iteration: 81 Logisticloss: 0.037343740478221116
iteration: 82 Logisticloss: 0.03712459067574983
iteration: 83 Logisticloss: 0.03690699902419107
iteration: 84 Logisticloss: 0.036690954017284505
iteration: 85 Logisticloss: 0.0364764442358425
iteration: 86 Logisticloss: 0.03626345834164044
iteration: 87 Logisticloss: 0.03605198507192375
iteration: 88 Logisticloss: 0.035842013234503076
iteration: 89 Logisticloss: 0.035633531703409854
iteration: 90 Logisticloss: 0.03542652941508645
iteration: 91 Logisticloss: 0.03522099536508544
iteration: 92 Logisticloss: 0.03501691860525354
iteration: 93 Logisticloss: 0.03481428824137664
iteration: 94 Logisticloss: 0.03461309343126267
iteration: 95 Logisticloss: 0.034413323383238964
iteration: 96 Logisticloss: 0.034214967355041995
iteration: 97 Logisticloss: 0.03401801465307693
iteration: 98 Logisticloss: 0.033822454632024546
iteration: 99 Logisticloss: 0.03362827669477344
[-0.00071181 0.00047009 -0.00028079 ... 0.00019672 -0.00013802
 0.00030015]

```

CROSS VALIDATION 40

```

iteration: 0 Logisticloss: 7.883235484495629
iteration: 1 Logisticloss: 0.07629824395103364
iteration: 2 Logisticloss: 0.06318523483646638
iteration: 3 Logisticloss: 0.0621525142353607
iteration: 4 Logisticloss: 0.061346391628534905
iteration: 5 Logisticloss: 0.06066661717617445
iteration: 6 Logisticloss: 0.06006598683627425
iteration: 7 Logisticloss: 0.05951895479578289
iteration: 8 Logisticloss: 0.059010347377191304
iteration: 9 Logisticloss: 0.05853052400486799
iteration: 10 Logisticloss: 0.05807303732115009
iteration: 11 Logisticloss: 0.05763339721594226
iteration: 12 Logisticloss: 0.057208371952240794
iteration: 13 Logisticloss: 0.056795570939968135
iteration: 14 Logisticloss: 0.05639318434073371
iteration: 15 Logisticloss: 0.05599981441471437
iteration: 16 Logisticloss: 0.055614362797031754
iteration: 17 Logisticloss: 0.05523595309044631
iteration: 18 Logisticloss: 0.05486387644437442

```


Output_logistic_test.txt

```

iteration: 19 Logisticloss: 0.05449755249550692
iteration: 20 Logisticloss: 0.05413650081597009
iteration: 21 Logisticloss: 0.053780319698618344
iteration: 22 Logisticloss: 0.05342867016100061
iteration: 23 Logisticloss: 0.053081263723288946
iteration: 24 Logisticloss: 0.05273785295665839
iteration: 25 Logisticloss: 0.052398224093375176
iteration: 26 Logisticloss: 0.05206219119039088
iteration: 27 Logisticloss: 0.05172959147695598
iteration: 28 Logisticloss: 0.0514002816141805
iteration: 29 Logisticloss: 0.051074134663839
iteration: 30 Logisticloss: 0.05075103761375463
iteration: 31 Logisticloss: 0.050430889343620756
iteration: 32 Logisticloss: 0.050113598942076204
iteration: 33 Logisticloss: 0.04979908430595005
iteration: 34 Logisticloss: 0.049487270967723526
iteration: 35 Logisticloss: 0.04917809110875368
iteration: 36 Logisticloss: 0.048871482724607306
iteration: 37 Logisticloss: 0.04856738891565403
iteration: 38 Logisticloss: 0.04826575728135598
iteration: 39 Logisticloss: 0.04796653940083514
iteration: 40 Logisticloss: 0.04766969038556673
iteration: 41 Logisticloss: 0.04737516849264002
iteration: 42 Logisticloss: 0.047082934789097995
iteration: 43 Logisticloss: 0.04679295285952863
iteration: 44 Logisticloss: 0.04650518855042323
iteration: 45 Logisticloss: 0.046219609745903334
iteration: 46 Logisticloss: 0.04593618617030734
iteration: 47 Logisticloss: 0.04565488921385288
iteration: 48 Logisticloss: 0.045375691778189384
iteration: 49 Logisticloss: 0.04509856813914977
iteration: 50 Logisticloss: 0.044823493824418616
iteration: 51 Logisticloss: 0.04455044550417689
iteration: 52 Logisticloss: 0.04427940089306708
iteration: 53 Logisticloss: 0.04401033866206302
iteration: 54 Logisticloss: 0.0437432383590289
iteration: 55 Logisticloss: 0.043478080336923144
iteration: 56 Logisticloss: 0.0432148456887457
iteration: 57 Logisticloss: 0.04295351618845049
iteration: 58 Logisticloss: 0.04269407423714835
iteration: 59 Logisticloss: 0.042436502814015696
iteration: 60 Logisticloss: 0.04218078543139897
iteration: 61 Logisticloss: 0.04192690609367221
iteration: 62 Logisticloss: 0.04167484925945979
iteration: 63 Logisticloss: 0.041424599806886085
iteration: 64 Logisticloss: 0.041176143001555116
iteration: 65 Logisticloss: 0.04092946446700041
iteration: 66 Logisticloss: 0.04068455015737567
iteration: 67 Logisticloss: 0.04044138633218564
iteration: 68 Logisticloss: 0.04019995953287951
iteration: 69 Logisticloss: 0.03996025656115015
iteration: 70 Logisticloss: 0.039722264458801074

```

Output_logistic_test.txt

```

iteration: 71 Logisticloss: 0.03948597048905835
iteration: 72 Logisticloss: 0.039251362119219015
iteration: 73 Logisticloss: 0.03901842700453919
iteration: 74 Logisticloss: 0.03878715297327624
iteration: 75 Logisticloss: 0.0385575280128085
iteration: 76 Logisticloss: 0.038329540256763626
iteration: 77 Logisticloss: 0.03810317797309482
iteration: 78 Logisticloss: 0.03787842955304963
iteration: 79 Logisticloss: 0.03765528350098131
iteration: 80 Logisticloss: 0.037433728424958526
iteration: 81 Logisticloss: 0.03721375302813191
iteration: 82 Logisticloss: 0.036995346100820566
iteration: 83 Logisticloss: 0.03677849651328434
iteration: 84 Logisticloss: 0.03656319320914989
iteration: 85 Logisticloss: 0.03634942519946209
iteration: 86 Logisticloss: 0.036137181557332254
iteration: 87 Logisticloss: 0.035926451413158415
iteration: 88 Logisticloss: 0.03571722395039231
iteration: 89 Logisticloss: 0.035509488401830235
iteration: 90 Logisticloss: 0.0353032340464049
iteration: 91 Logisticloss: 0.03509845020645641
iteration: 92 Logisticloss: 0.03489512624546114
iteration: 93 Logisticloss: 0.034693251566197084
iteration: 94 Logisticloss: 0.03449281560932517
iteration: 95 Logisticloss: 0.03429380785236601
iteration: 96 Logisticloss: 0.03409621780905065
iteration: 97 Logisticloss: 0.03390003502902544
iteration: 98 Logisticloss: 0.03370524909788979
iteration: 99 Logisticloss: 0.033511849637545964
[-0.00069797 0.00047463 -0.00028072 ... 0.000195 -0.00013629
 0.00029867]

```

CROSS VALIDATION 41

```

iteration: 0 Logisticloss: 7.8854601991769915
iteration: 1 Logisticloss: 0.07684181855504753
iteration: 2 Logisticloss: 0.06368669977434702
iteration: 3 Logisticloss: 0.0626132074965974
iteration: 4 Logisticloss: 0.06177388378469418
iteration: 5 Logisticloss: 0.061066492646394376
iteration: 6 Logisticloss: 0.06044249397015593
iteration: 7 Logisticloss: 0.05987541048698637
iteration: 8 Logisticloss: 0.05934939713280819
iteration: 9 Logisticloss: 0.058854315581464325
iteration: 10 Logisticloss: 0.058383340637431
iteration: 11 Logisticloss: 0.05793168958914656
iteration: 12 Logisticloss: 0.05749590019574233
iteration: 13 Logisticloss: 0.05707339757050366
iteration: 14 Logisticloss: 0.056662222598192535
iteration: 15 Logisticloss: 0.05626085523306579
iteration: 16 Logisticloss: 0.055868095873316426
iteration: 17 Logisticloss: 0.055482983552711626
iteration: 18 Logisticloss: 0.055104738188214125
iteration: 19 Logisticloss: 0.054732718964768265

```

Output_logistic_test.txt

iteration: 20 Logisticloss: 0.05436639379870762
iteration: 21 Logisticloss: 0.05400531656470888
iteration: 22 Logisticloss: 0.053649109863875756
iteration: 23 Logisticloss: 0.05329745181245862
iteration: 24 Logisticloss: 0.05295006579173715
iteration: 25 Logisticloss: 0.0526067124084985
iteration: 26 Logisticloss: 0.05226718312630757
iteration: 27 Logisticloss: 0.05193129517396191
iteration: 28 Logisticloss: 0.051598887440474805
iteration: 29 Logisticloss: 0.051269817139438296
iteration: 30 Logisticloss: 0.05094395707878261
iteration: 31 Logisticloss: 0.050621193410853804
iteration: 32 Logisticloss: 0.050301423766518756
iteration: 33 Logisticloss: 0.04998455569852352
iteration: 34 Logisticloss: 0.04967050537557108
iteration: 35 Logisticloss: 0.049359196480946964
iteration: 36 Logisticloss: 0.049050559279015346
iteration: 37 Logisticloss: 0.048744529820254574
iteration: 38 Logisticloss: 0.04844104926122745
iteration: 39 Logisticloss: 0.04814006328037762
iteration: 40 Logisticloss: 0.047841521574097184
iteration: 41 Logisticloss: 0.04754537742033401
iteration: 42 Logisticloss: 0.047251587299268545
iteration: 43 Logisticloss: 0.046960110562405656
iteration: 44 Logisticloss: 0.04667090914289939
iteration: 45 Logisticloss: 0.046383947301120006
iteration: 46 Logisticloss: 0.04609919140045075
iteration: 47 Logisticloss: 0.045816609709101216
iteration: 48 Logisticloss: 0.0455361722243834
iteration: 49 Logisticloss: 0.04525785051644341
iteration: 50 Logisticloss: 0.04498161758889425
iteration: 51 Logisticloss: 0.0447074477541742
iteration: 52 Logisticloss: 0.04443531652177124
iteration: 53 Logisticloss: 0.044165200497720485
iteration: 54 Logisticloss: 0.04389707729400511
iteration: 55 Logisticloss: 0.04363092544668203
iteration: 56 Logisticloss: 0.04336672434171263
iteration: 57 Logisticloss: 0.04310445414761735
iteration: 58 Logisticloss: 0.042844095754188384
iteration: 59 Logisticloss: 0.04258563071659535
iteration: 60 Logisticloss: 0.04232904120430364
iteration: 61 Logisticloss: 0.042074309954300004
iteration: 62 Logisticloss: 0.04182142022818138
iteration: 63 Logisticloss: 0.04157035577272002
iteration: 64 Logisticloss: 0.04132110078356369
iteration: 65 Logisticloss: 0.04107363987177142
iteration: 66 Logisticloss: 0.040827958032921344
iteration: 67 Logisticloss: 0.04058404061855746
iteration: 68 Logisticloss: 0.04034187330977025
iteration: 69 Logisticloss: 0.04010144209272881
iteration: 70 Logisticloss: 0.03986273323600317
iteration: 71 Logisticloss: 0.039625733269534384

Output_logistic_test.txt

```

iteration: 72 Logisticloss: 0.03939042896512412
iteration: 73 Logisticloss: 0.03915680731833124
iteration: 74 Logisticloss: 0.03892485553167366
iteration: 75 Logisticloss: 0.03869456099904514
iteration: 76 Logisticloss: 0.03846591129126634
iteration: 77 Logisticloss: 0.03823889414269653
iteration: 78 Logisticloss: 0.03801349743884132
iteration: 79 Logisticloss: 0.0377897092048962
iteration: 80 Logisticloss: 0.03756751759517295
iteration: 81 Logisticloss: 0.03734691088335954
iteration: 82 Logisticloss: 0.03712787745356927
iteration: 83 Logisticloss: 0.03691040579213764
iteration: 84 Logisticloss: 0.03669448448012988
iteration: 85 Logisticloss: 0.0364801021865234
iteration: 86 Logisticloss: 0.0362672476620329
iteration: 87 Logisticloss: 0.03605590973354723
iteration: 88 Logisticloss: 0.03584607729914937
iteration: 89 Logisticloss: 0.03563773932369134
iteration: 90 Logisticloss: 0.035430884834898715
iteration: 91 Logisticloss: 0.035225502919978155
iteration: 92 Logisticloss: 0.03502158272270464
iteration: 93 Logisticloss: 0.0348191134409635
iteration: 94 Logisticloss: 0.03461808432472463
iteration: 95 Logisticloss: 0.034418484674425216
iteration: 96 Logisticloss: 0.03422030383973871
iteration: 97 Logisticloss: 0.03402353121870744
iteration: 98 Logisticloss: 0.03382815625721627
iteration: 99 Logisticloss: 0.03363416844878517
[-0.00071182 0.00047014 -0.00028079 ... 0.00019682 -0.00013799
 0.00030017]

```

CROSS VALIDATION 42

```

iteration: 0 Logisticloss: 12.28011788921211
iteration: 1 Logisticloss: 0.0660012610557501
iteration: 2 Logisticloss: 0.0558516132975779
iteration: 3 Logisticloss: 0.055113485123010876
iteration: 4 Logisticloss: 0.054524769317029924
iteration: 5 Logisticloss: 0.05401306326811876
iteration: 6 Logisticloss: 0.0535480330541063
iteration: 7 Logisticloss: 0.053114342014453156
iteration: 8 Logisticloss: 0.052703248944751965
iteration: 9 Logisticloss: 0.05230933482590108
iteration: 10 Logisticloss: 0.05192902348752867
iteration: 11 Logisticloss: 0.0515598379289948
iteration: 12 Logisticloss: 0.05119999501248663
iteration: 13 Logisticloss: 0.05084817004720631
iteration: 14 Logisticloss: 0.050503352810739734
iteration: 15 Logisticloss: 0.05016475565015984
iteration: 16 Logisticloss: 0.04983175267754622
iteration: 17 Logisticloss: 0.04950383828579554
iteration: 18 Logisticloss: 0.049180598086531885
iteration: 19 Logisticloss: 0.04886168807524409
iteration: 20 Logisticloss: 0.048546819388640784

```

Output_logistic_test.txt

```

iteration: 21 Logisticloss: 0.04823574695122703
iteration: 22 Logisticloss: 0.04792826088235144
iteration: 23 Logisticloss: 0.04762417989857107
iteration: 24 Logisticloss: 0.04732334618208409
iteration: 25 Logisticloss: 0.04702562134242939
iteration: 26 Logisticloss: 0.04673088320448642
iteration: 27 Logisticloss: 0.04643902322870506
iteration: 28 Logisticloss: 0.04614994442053558
iteration: 29 Logisticloss: 0.04586355962231113
iteration: 30 Logisticloss: 0.0455797901069836
iteration: 31 Logisticloss: 0.04529856441220256
iteration: 32 Logisticloss: 0.04501981736732726
iteration: 33 Logisticloss: 0.04474348927649162
iteration: 34 Logisticloss: 0.044469525228787256
iteration: 35 Logisticloss: 0.044197874512680396
iteration: 36 Logisticloss: 0.04392849011642871
iteration: 37 Logisticloss: 0.04366132829986748
iteration: 38 Logisticloss: 0.04339634822574882
iteration: 39 Logisticloss: 0.04313351164103047
iteration: 40 Logisticloss: 0.042872782600265745
iteration: 41 Logisticloss: 0.0426141272246432
iteration: 42 Logisticloss: 0.042357513491346886
iteration: 43 Logisticloss: 0.04210291104881349
iteration: 44 Logisticloss: 0.04185029105419635
iteration: 45 Logisticloss: 0.04159962602994587
iteration: 46 Logisticloss: 0.04135088973690669
iteration: 47 Logisticloss: 0.04110405706173625
iteration: 48 Logisticloss: 0.04085910391678384
iteration: 49 Logisticloss: 0.040616007150846956
iteration: 50 Logisticloss: 0.04037474446945316
iteration: 51 Logisticloss: 0.04013529436351064
iteration: 52 Logisticloss: 0.03989763604533188
iteration: 53 Logisticloss: 0.03966174939117353
iteration: 54 Logisticloss: 0.03942761488955128
iteration: 55 Logisticloss: 0.03919521359468668
iteration: 56 Logisticloss: 0.038964527084526863
iteration: 57 Logisticloss: 0.03873553742284973
iteration: 58 Logisticloss: 0.03850822712502798
iteration: 59 Logisticloss: 0.0382825791270772
iteration: 60 Logisticloss: 0.03805857675765939
iteration: 61 Logisticloss: 0.03783620371275047
iteration: 62 Logisticloss: 0.03761544403271467
iteration: 63 Logisticloss: 0.037396282081556834
iteration: 64 Logisticloss: 0.037178702528149275
iteration: 65 Logisticloss: 0.03696269032925014
iteration: 66 Logisticloss: 0.03674823071415053
iteration: 67 Logisticloss: 0.036535309170802305
iteration: 68 Logisticloss: 0.03632391143329421
iteration: 69 Logisticloss: 0.03611402347055493
iteration: 70 Logisticloss: 0.035905631476173386
iteration: 71 Logisticloss: 0.035698721859236275
iteration: 72 Logisticloss: 0.035493281236089864

```

Output_logistic_test.txt

```

iteration: 73 Logisticloss: 0.035289296422942436
iteration: 74 Logisticloss: 0.03508675442922845
iteration: 75 Logisticloss: 0.0348856424516625
iteration: 76 Logisticloss: 0.03468594786891606
iteration: 77 Logisticloss: 0.03448765823685429
iteration: 78 Logisticloss: 0.03429076128427527
iteration: 79 Logisticloss: 0.03409524490909704
iteration: 80 Logisticloss: 0.03390109717494179
iteration: 81 Logisticloss: 0.03370830630807039
iteration: 82 Logisticloss: 0.03351686069462215
iteration: 83 Logisticloss: 0.03332674887811906
iteration: 84 Logisticloss: 0.03313795955719581
iteration: 85 Logisticloss: 0.03295048158351916
iteration: 86 Logisticloss: 0.03276430395986365
iteration: 87 Logisticloss: 0.03257941583831215
iteration: 88 Logisticloss: 0.032395806518552624
iteration: 89 Logisticloss: 0.0322134654462446
iteration: 90 Logisticloss: 0.03203238221143084
iteration: 91 Logisticloss: 0.03185254654697202
iteration: 92 Logisticloss: 0.031673948326984364
iteration: 93 Logisticloss: 0.03149657756526212
iteration: 94 Logisticloss: 0.03132042441366832
iteration: 95 Logisticloss: 0.031145479160480233
iteration: 96 Logisticloss: 0.03097173222867639
iteration: 97 Logisticloss: 0.030799174174155043
iteration: 98 Logisticloss: 0.030627795683875036
iteration: 99 Logisticloss: 0.030457587573911763
[-0.00092024 0.00060153 -0.00013802 ... -0.00018201 0.00017827
 0.00017642]

```

CROSS VALIDATION 43

```

iteration: 0 Logisticloss: 7.801319732810499
iteration: 1 Logisticloss: 0.07603774248205278
iteration: 2 Logisticloss: 0.06308020358087864
iteration: 3 Logisticloss: 0.062072992117723304
iteration: 4 Logisticloss: 0.06128727938588363
iteration: 5 Logisticloss: 0.06062321158426766
iteration: 6 Logisticloss: 0.060034649778955694
iteration: 7 Logisticloss: 0.05949695678481204
iteration: 8 Logisticloss: 0.05899563936597453
iteration: 9 Logisticloss: 0.05852155311527458
iteration: 10 Logisticloss: 0.058068612633311034
iteration: 11 Logisticloss: 0.05763259430739132
iteration: 12 Logisticloss: 0.05721046499222285
iteration: 13 Logisticloss: 0.056799983967933856
iteration: 14 Logisticloss: 0.05639945589866069
iteration: 15 Logisticloss: 0.056007571548747914
iteration: 16 Logisticloss: 0.055623301706307283
iteration: 17 Logisticloss: 0.055245824549722336
iteration: 18 Logisticloss: 0.054874474697558955
iteration: 19 Logisticloss: 0.05450870670317547
iteration: 20 Logisticloss: 0.05414806840380085
iteration: 21 Logisticloss: 0.05379218113604248

```

Output_logistic_test.txt

```

iteration: 22 Logisticloss: 0.053440724826916426
iteration: 23 Logisticloss: 0.053093426605940075
iteration: 24 Logisticloss: 0.05275005199936523
iteration: 25 Logisticloss: 0.052410398044532444
iteration: 26 Logisticloss: 0.05207428785029845
iteration: 27 Logisticloss: 0.0517415662592624
iteration: 28 Logisticloss: 0.051412096358501955
iteration: 29 Logisticloss: 0.051085756650235584
iteration: 30 Logisticloss: 0.05076243874044685
iteration: 31 Logisticloss: 0.050442045437504225
iteration: 32 Logisticloss: 0.050124489177882516
iteration: 33 Logisticloss: 0.04980969071477776
iteration: 34 Logisticloss: 0.049497578019467574
iteration: 35 Logisticloss: 0.04918808535594678
iteration: 36 Logisticloss: 0.048881152497546335
iteration: 37 Logisticloss: 0.04857672406055711
iteration: 38 Logisticloss: 0.048274748934791646
iteration: 39 Logisticloss: 0.047975179794865624
iteration: 40 Logisticloss: 0.04767797267901512
iteration: 41 Logisticloss: 0.04738308662467455
iteration: 42 Logisticloss: 0.04709048335196503
iteration: 43 Logisticloss: 0.046800126987786746
iteration: 44 Logisticloss: 0.0465119838244569
iteration: 45 Logisticloss: 0.04622602210784754
iteration: 46 Logisticloss: 0.04594221185080311
iteration: 47 Logisticloss: 0.04566052466829474
iteration: 48 Logisticloss: 0.0453809336313256
iteration: 49 Logisticloss: 0.0451034131370616
iteration: 50 Logisticloss: 0.04482793879304481
iteration: 51 Logisticloss: 0.0445544873136649
iteration: 52 Logisticloss: 0.0442830364273315
iteration: 53 Logisticloss: 0.04401356479301233
iteration: 54 Logisticloss: 0.04374605192499255
iteration: 55 Logisticloss: 0.04348047812486809
iteration: 56 Logisticloss: 0.04321682441992224
iteration: 57 Logisticloss: 0.042955072507148404
iteration: 58 Logisticloss: 0.042695204702280866
iteration: 59 Logisticloss: 0.042437203893278146
iteration: 60 Logisticloss: 0.042181053497776254
iteration: 61 Logisticloss: 0.04192673742409003
iteration: 62 Logisticloss: 0.041674240035394224
iteration: 63 Logisticloss: 0.04142354611676217
iteration: 64 Logisticloss: 0.04117464084477907
iteration: 65 Logisticloss: 0.040927509759481694
iteration: 66 Logisticloss: 0.040682138738405885
iteration: 67 Logisticloss: 0.04043851397254994
iteration: 68 Logisticloss: 0.04019662194408374
iteration: 69 Logisticloss: 0.039956449405654036
iteration: 70 Logisticloss: 0.03971798336115318
iteration: 71 Logisticloss: 0.03948121104783402
iteration: 72 Logisticloss: 0.03924611991966654
iteration: 73 Logisticloss: 0.03901269763184411

```

Output_logistic_test.txt

```

iteration: 74 Logisticloss: 0.03878093202635662
iteration: 75 Logisticloss: 0.038550811118557515
iteration: 76 Logisticloss: 0.03832232308465877
iteration: 77 Logisticloss: 0.03809545625009561
iteration: 78 Logisticloss: 0.03787019907870813
iteration: 79 Logisticloss: 0.037646540162692546
iteration: 80 Logisticloss: 0.0374244682132794
iteration: 81 Logisticloss: 0.037203972052100166
iteration: 82 Logisticloss: 0.03698504060320704
iteration: 83 Logisticloss: 0.03676766288571399
iteration: 84 Logisticloss: 0.036551828007029226
iteration: 85 Logisticloss: 0.03633752515665264
iteration: 86 Logisticloss: 0.03612474360051231
iteration: 87 Logisticloss: 0.03591347267581688
iteration: 88 Logisticloss: 0.03570370178640151
iteration: 89 Logisticloss: 0.03549542039854644
iteration: 90 Logisticloss: 0.03528861803724796
iteration: 91 Logisticloss: 0.03508328428292245
iteration: 92 Logisticloss: 0.03487940876852508
iteration: 93 Logisticloss: 0.034676981177064345
iteration: 94 Logisticloss: 0.034475991239494776
iteration: 95 Logisticloss: 0.03427642873297032
iteration: 96 Logisticloss: 0.03407828347944008
iteration: 97 Logisticloss: 0.03388154534456961
iteration: 98 Logisticloss: 0.03368620423696968
iteration: 99 Logisticloss: 0.0334922501077149
[-0.00070219 0.00047788 -0.00028043 ... 0.00019193 -0.00014035
 0.00029836]

```

CROSS VALIDATION 44

```

iteration: 0 Logisticloss: 0.2983793557947627
iteration: 1 Logisticloss: 0.06676875548155943
iteration: 2 Logisticloss: 0.06419602292293536
iteration: 3 Logisticloss: 0.06256792526367354
iteration: 4 Logisticloss: 0.061366782879909876
iteration: 5 Logisticloss: 0.06040355416045588
iteration: 6 Logisticloss: 0.05958931668148336
iteration: 7 Logisticloss: 0.05887580759474438
iteration: 8 Logisticloss: 0.05823424365992023
iteration: 9 Logisticloss: 0.057646260331338156
iteration: 10 Logisticloss: 0.05709952670908799
iteration: 11 Logisticloss: 0.05658542403652648
iteration: 12 Logisticloss: 0.056097729192363374
iteration: 13 Logisticloss: 0.05563182623656007
iteration: 14 Logisticloss: 0.055184212725019506
iteration: 15 Logisticloss: 0.05475217892751859
iteration: 16 Logisticloss: 0.05433359275195313
iteration: 17 Logisticloss: 0.0539267516053291
iteration: 18 Logisticloss: 0.05353027794349422
iteration: 19 Logisticloss: 0.05314304409718829
iteration: 20 Logisticloss: 0.052764117176226914
iteration: 21 Logisticloss: 0.05239271802929282
iteration: 22 Logisticloss: 0.052028190225450195

```


Output_logistic_test.txt

```

iteration: 23 Logisticloss: 0.051669976300009725
iteration: 24 Logisticloss: 0.051317599345130596
iteration: 25 Logisticloss: 0.05097064858645135
iteration: 26 Logisticloss: 0.05062876796945033
iteration: 27 Logisticloss: 0.05029164704428455
iteration: 28 Logisticloss: 0.049959013624357645
iteration: 29 Logisticloss: 0.04963062782693005
iteration: 30 Logisticloss: 0.04930627720024147
iteration: 31 Logisticloss: 0.0489857727119316
iteration: 32 Logisticloss: 0.04866894542552832
iteration: 33 Logisticloss: 0.0483556437306011
iteration: 34 Logisticloss: 0.04804573102145434
iteration: 35 Logisticloss: 0.0477390837415104
iteration: 36 Logisticloss: 0.04743558972762153
iteration: 37 Logisticloss: 0.047135146801762465
iteration: 38 Logisticloss: 0.046837661567849534
iteration: 39 Logisticloss: 0.04654304837950571
iteration: 40 Logisticloss: 0.046251228450966
iteration: 41 Logisticloss: 0.04596212908838355
iteration: 42 Logisticloss: 0.045675683022844235
iteration: 43 Logisticloss: 0.04539182782965229
iteration: 44 Logisticloss: 0.04511050542107757
iteration: 45 Logisticloss: 0.044831661601890685
iteration: 46 Logisticloss: 0.044555245678754574
iteration: 47 Logisticloss: 0.04428121011596903
iteration: 48 Logisticloss: 0.04400951023124056
iteration: 49 Logisticloss: 0.04374010392612355
iteration: 50 Logisticloss: 0.04347295144658398
iteration: 51 Logisticloss: 0.04320801516981155
iteration: 52 Logisticloss: 0.04294525941396751
iteration: 53 Logisticloss: 0.042684650268028174
iteration: 54 Logisticloss: 0.04242615543928123
iteration: 55 Logisticloss: 0.04216974411636949
iteration: 56 Logisticloss: 0.041915386846058805
iteration: 57 Logisticloss: 0.04166305542215153
iteration: 58 Logisticloss: 0.041412722785171836
iteration: 59 Logisticloss: 0.04116436293162539
iteration: 60 Logisticloss: 0.04091795083178785
iteration: 61 Logisticloss: 0.04067346235510595
iteration: 62 Logisticloss: 0.04043087420240687
iteration: 63 Logisticloss: 0.040190163844208315
iteration: 64 Logisticloss: 0.03995130946450547
iteration: 65 Logisticloss: 0.03971428990948338
iteration: 66 Logisticloss: 0.039479084640666615
iteration: 67 Logisticloss: 0.03924567369207291
iteration: 68 Logisticloss: 0.039014037630985994
iteration: 69 Logisticloss: 0.038784157522004904
iteration: 70 Logisticloss: 0.03855601489406334
iteration: 71 Logisticloss: 0.03832959171014683
iteration: 72 Logisticloss: 0.03810487033946265
iteration: 73 Logisticloss: 0.03788183353184368
iteration: 74 Logisticloss: 0.037660464394190345

```

Output_logistic_test.txt

iteration: 75 Logisticloss: 0.03744074636877359
iteration: 76 Logisticloss: 0.037222663213241414
iteration: 77 Logisticloss: 0.03700619898218587
iteration: 78 Logisticloss: 0.03679133801014279
iteration: 79 Logisticloss: 0.036578064895908924
iteration: 80 Logisticloss: 0.03636636448807237
iteration: 81 Logisticloss: 0.03615622187166323
iteration: 82 Logisticloss: 0.03594762235583961
iteration: 83 Logisticloss: 0.03574055146253381
iteration: 84 Logisticloss: 0.03553499491598928
iteration: 85 Logisticloss: 0.03533093863312744
iteration: 86 Logisticloss: 0.03512836871468796
iteration: 87 Logisticloss: 0.03492727143709252
iteration: 88 Logisticloss: 0.034727633244985893
iteration: 89 Logisticloss: 0.034529440744413456
iteration: 90 Logisticloss: 0.03433268069659712
iteration: 91 Logisticloss: 0.03413734001227529
iteration: 92 Logisticloss: 0.033943405746575346
iteration: 93 Logisticloss: 0.03375086509438941
iteration: 94 Logisticloss: 0.03355970538622642
iteration: 95 Logisticloss: 0.033369914084515284
iteration: 96 Logisticloss: 0.03318147878033512
iteration: 97 Logisticloss: 0.03299438719055013
iteration: 98 Logisticloss: 0.03280862715532729
iteration: 99 Logisticloss: 0.03262418663601619
[-0.00045362 0.00057265 -0.00037147 ... 0.00023895 -0.0002118
0.00028406]

CROSS VALIDATION 45

iteration: 0 Logisticloss: 7.887139718119211
iteration: 1 Logisticloss: 0.07680657988204334
iteration: 2 Logisticloss: 0.06364138449269972
iteration: 3 Logisticloss: 0.06256725171980276
iteration: 4 Logisticloss: 0.061727082574245265
iteration: 5 Logisticloss: 0.06101874638642606
iteration: 6 Logisticloss: 0.06039374314431458
iteration: 7 Logisticloss: 0.05982561469167622
iteration: 8 Logisticloss: 0.05929852652728694
iteration: 9 Logisticloss: 0.058802346820831956
iteration: 10 Logisticloss: 0.05833025471474402
iteration: 11 Logisticloss: 0.0578774705948292
iteration: 12 Logisticloss: 0.05744053455981799
iteration: 13 Logisticloss: 0.0570168735776278
iteration: 14 Logisticloss: 0.05660453006573471
iteration: 15 Logisticloss: 0.0562019852911455
iteration: 16 Logisticloss: 0.055808040810968504
iteration: 17 Logisticloss: 0.055421736708240535
iteration: 18 Logisticloss: 0.05504229386979635
iteration: 19 Logisticloss: 0.054669072392161955
iteration: 20 Logisticloss: 0.05430154105991082
iteration: 21 Logisticloss: 0.05393925458331991
iteration: 22 Logisticloss: 0.05358183637416396
iteration: 23 Logisticloss: 0.053228965340003494

Output_logistic_test.txt

```

iteration: 24 Logisticloss: 0.05288036563807577
iteration: 25 Logisticloss: 0.052535798638630844
iteration: 26 Logisticloss: 0.0521950565582024
iteration: 27 Logisticloss: 0.05185795736941833
iteration: 28 Logisticloss: 0.05152434069685121
iteration: 29 Logisticloss: 0.051194064481877945
iteration: 30 Logisticloss: 0.050867002252654524
iteration: 31 Logisticloss: 0.05054304087419554
iteration: 32 Logisticloss: 0.050222078682321106
iteration: 33 Logisticloss: 0.049904023926739184
iteration: 34 Logisticloss: 0.04958879346476214
iteration: 35 Logisticloss: 0.049276311659513114
iteration: 36 Logisticloss: 0.048966509445965936
iteration: 37 Logisticloss: 0.04865932353550506
iteration: 38 Logisticloss: 0.04835469573541492
iteration: 39 Logisticloss: 0.0480525723642019
iteration: 40 Logisticloss: 0.04775290374720299
iteration: 41 Logisticloss: 0.04745564377975754
iteration: 42 Logisticloss: 0.04716074954747741
iteration: 43 Logisticloss: 0.04686818099496684
iteration: 44 Logisticloss: 0.04657790063581211
iteration: 45 Logisticloss: 0.04628987329785419
iteration: 46 Logisticloss: 0.04600406589873255
iteration: 47 Logisticloss: 0.04572044724748871
iteration: 48 Logisticloss: 0.04543898786867521
iteration: 49 Logisticloss: 0.04515965984596298
iteration: 50 Logisticloss: 0.04488243668269116
iteration: 51 Logisticloss: 0.044607293177182615
iteration: 52 Logisticloss: 0.044334205310963486
iteration: 53 Logisticloss: 0.04406315014829131
iteration: 54 Logisticloss: 0.04379410574561988
iteration: 55 Logisticloss: 0.04352705106981809
iteration: 56 Logisticloss: 0.04326196592412088
iteration: 57 Logisticloss: 0.04299883088092654
iteration: 58 Logisticloss: 0.04273762722067147
iteration: 59 Logisticloss: 0.0424783368761131
iteration: 60 Logisticloss: 0.04222094238143696
iteration: 61 Logisticloss: 0.041965426825677984
iteration: 62 Logisticloss: 0.041711773810008464
iteration: 63 Logisticloss: 0.04145996740850145
iteration: 64 Logisticloss: 0.041209992132024295
iteration: 65 Logisticloss: 0.040961832894959326
iteration: 66 Logisticloss: 0.0407154749844839
iteration: 67 Logisticloss: 0.04047090403217403
iteration: 68 Logisticloss: 0.04022810598772186
iteration: 69 Logisticloss: 0.03998706709458286
iteration: 70 Logisticloss: 0.039747773867387946
iteration: 71 Logisticloss: 0.039510213070975346
iteration: 72 Logisticloss: 0.0392743717009124
iteration: 73 Logisticloss: 0.03904023696539239
iteration: 74 Logisticloss: 0.03880779626840326
iteration: 75 Logisticloss: 0.03857703719407753

```

Output_logistic_test.txt

```

iteration: 76 Logisticloss: 0.03834794749214053
iteration: 77 Logisticloss: 0.03812051506438501
iteration: 78 Logisticloss: 0.03789472795210575
iteration: 79 Logisticloss: 0.03767057432443628
iteration: 80 Logisticloss: 0.03744804246753446
iteration: 81 Logisticloss: 0.037227120774569925
iteration: 82 Logisticloss: 0.03700779773647056
iteration: 83 Logisticloss: 0.03679006193338921
iteration: 84 Logisticloss: 0.036573902026855946
iteration: 85 Logisticloss: 0.03635930675258369
iteration: 86 Logisticloss: 0.03614626491389797
iteration: 87 Logisticloss: 0.03593476537576459
iteration: 88 Logisticloss: 0.035724797059389655
iteration: 89 Logisticloss: 0.035516348937369546
iteration: 90 Logisticloss: 0.03530941002936889
iteration: 91 Logisticloss: 0.03510396939830619
iteration: 92 Logisticloss: 0.03490001614702797
iteration: 93 Logisticloss: 0.03469753941545222
iteration: 94 Logisticloss: 0.03449652837816357
iteration: 95 Logisticloss: 0.034296972242442166
iteration: 96 Logisticloss: 0.03409886024670902
iteration: 97 Logisticloss: 0.0339021816593703
iteration: 98 Logisticloss: 0.03370692577804344
iteration: 99 Logisticloss: 0.03351308192914746
[-0.00071441 0.00047378 -0.00028271 ... 0.00019844 -0.00013998
 0.00029938]

```

CROSS VALIDATION 46

```

iteration: 0 Logisticloss: 6.952777318639452
iteration: 1 Logisticloss: 0.06407185811336821
iteration: 2 Logisticloss: 0.06339433826249546
iteration: 3 Logisticloss: 0.06279927763649115
iteration: 4 Logisticloss: 0.06225594996852833
iteration: 5 Logisticloss: 0.061748052325070704
iteration: 6 Logisticloss: 0.06126598090630539
iteration: 7 Logisticloss: 0.06080364420459698
iteration: 8 Logisticloss: 0.06035695866245917
iteration: 9 Logisticloss: 0.059923066073057675
iteration: 10 Logisticloss: 0.05949989523220985
iteration: 11 Logisticloss: 0.059085901681421034
iteration: 12 Logisticloss: 0.05867990571400278
iteration: 13 Logisticloss: 0.05828098752047531
iteration: 14 Logisticloss: 0.057888417042902006
iteration: 15 Logisticloss: 0.057501605706253
iteration: 16 Logisticloss: 0.05712007238272713
iteration: 17 Logisticloss: 0.05674341887405074
iteration: 18 Logisticloss: 0.05637131191402039
iteration: 19 Logisticloss: 0.05600346973395681
iteration: 20 Logisticloss: 0.05563965188255036
iteration: 21 Logisticloss: 0.05527965140672005
iteration: 22 Logisticloss: 0.05492328877189145
iteration: 23 Logisticloss: 0.054570407081749976
iteration: 24 Logisticloss: 0.05422086828121873

```

Output_logistic_test.txt

```

iteration: 25 Logisticloss: 0.05387455011208524
iteration: 26 Logisticloss: 0.05353134365096727
iteration: 27 Logisticloss: 0.05319115130231364
iteration: 28 Logisticloss: 0.0528538851502254
iteration: 29 Logisticloss: 0.052519465595634605
iteration: 30 Logisticloss: 0.05218782022221484
iteration: 31 Logisticloss: 0.05185888284698908
iteration: 32 Logisticloss: 0.05153259272110779
iteration: 33 Logisticloss: 0.05120889385351525
iteration: 34 Logisticloss: 0.0508877344357916
iteration: 35 Logisticloss: 0.05056906635076987
iteration: 36 Logisticloss: 0.05025284475089641
iteration: 37 Logisticloss: 0.049939027694948325
iteration: 38 Logisticloss: 0.04962757583381764
iteration: 39 Logisticloss: 0.04931845213773924
iteration: 40 Logisticloss: 0.049011621658676355
iteration: 41 Logisticloss: 0.048707051322654515
iteration: 42 Logisticloss: 0.04840470974770691
iteration: 43 Logisticloss: 0.04810456708380454
iteration: 44 Logisticloss: 0.04780659487172588
iteration: 45 Logisticloss: 0.04751076591829799
iteration: 46 Logisticloss: 0.04721705418583642
iteration: 47 Logisticloss: 0.0469254346939372
iteration: 48 Logisticloss: 0.046635883432047706
iteration: 49 Logisticloss: 0.046348377281469504
iteration: 50 Logisticloss: 0.0460628939456383
iteration: 51 Logisticloss: 0.04577941188768618
iteration: 52 Logisticloss: 0.04549791027442738
iteration: 53 Logisticloss: 0.04521836892602341
iteration: 54 Logisticloss: 0.04494076827068196
iteration: 55 Logisticloss: 0.04466508930382645
iteration: 56 Logisticloss: 0.04439131355124486
iteration: 57 Logisticloss: 0.04411942303578807
iteration: 58 Logisticloss: 0.04384940024723928
iteration: 59 Logisticloss: 0.04358122811502248
iteration: 60 Logisticloss: 0.04331488998345673
iteration: 61 Logisticloss: 0.04305036958929651
iteration: 62 Logisticloss: 0.0427876510413286
iteration: 63 Logisticloss: 0.04252671880182079
iteration: 64 Logisticloss: 0.04226755766964068
iteration: 65 Logisticloss: 0.042010152764881674
iteration: 66 Logisticloss: 0.04175448951485117
iteration: 67 Logisticloss: 0.041500553641290135
iteration: 68 Logisticloss: 0.04124833114870715
iteration: 69 Logisticloss: 0.04099780831372097
iteration: 70 Logisticloss: 0.04074897167531669
iteration: 71 Logisticloss: 0.04050180802592873
iteration: 72 Logisticloss: 0.040256304403272734
iteration: 73 Logisticloss: 0.04001244808285555
iteration: 74 Logisticloss: 0.03977022657109814
iteration: 75 Logisticloss: 0.03952962759901292
iteration: 76 Logisticloss: 0.03929063911638161

```

Output_logistic_test.txt

```

iteration: 77 Logisticloss: 0.039053249286383866
iteration: 78 Logisticloss: 0.038817446480632706
iteration: 79 Logisticloss: 0.038583219274573956
iteration: 80 Logisticloss: 0.038350556443212905
iteration: 81 Logisticloss: 0.03811944695713234
iteration: 82 Logisticloss: 0.03788987997877056
iteration: 83 Logisticloss: 0.03766184485892904
iteration: 84 Logisticloss: 0.03743533113348299
iteration: 85 Logisticloss: 0.03721032852026937
iteration: 86 Logisticloss: 0.036986826916129256
iteration: 87 Logisticloss: 0.036764816394083244
iteration: 88 Logisticloss: 0.03654428720061994
iteration: 89 Logisticloss: 0.03632522975307979
iteration: 90 Logisticloss: 0.03610763463711691
iteration: 91 Logisticloss: 0.035891492604224196
iteration: 92 Logisticloss: 0.035676794569307044
iteration: 93 Logisticloss: 0.03546353160829288
iteration: 94 Logisticloss: 0.03525169495576464
iteration: 95 Logisticloss: 0.03504127600260701
iteration: 96 Logisticloss: 0.03483226629365563
iteration: 97 Logisticloss: 0.034624657525340254
iteration: 98 Logisticloss: 0.03441844154331304
iteration: 99 Logisticloss: 0.03421361034005511
[-7.04261097e-04  5.49435742e-04 -2.78816357e-04 ...  1.77716503e-04
 -4.35446635e-05  3.14139126e-04]

```

CROSS VALIDATION 47

```

iteration: 0 Logisticloss: 7.192507487800241
iteration: 1 Logisticloss: 0.19280192421071987
iteration: 2 Logisticloss: 0.06971955200927314
iteration: 3 Logisticloss: 0.06854200449210608
iteration: 4 Logisticloss: 0.06760659682669358
iteration: 5 Logisticloss: 0.06681235808077739
iteration: 6 Logisticloss: 0.06610957458428268
iteration: 7 Logisticloss: 0.0654703451940026
iteration: 8 Logisticloss: 0.06487759810384848
iteration: 9 Logisticloss: 0.06432021705630393
iteration: 10 Logisticloss: 0.06379061241525719
iteration: 11 Logisticloss: 0.06328340416460981
iteration: 12 Logisticloss: 0.0627946601382114
iteration: 13 Logisticloss: 0.062321432160721536
iteration: 14 Logisticloss: 0.06186146146778587
iteration: 15 Logisticloss: 0.06141298494427501
iteration: 16 Logisticloss: 0.060974603817238314
iteration: 17 Logisticloss: 0.060545192356481196
iteration: 18 Logisticloss: 0.06012383295531443
iteration: 19 Logisticloss: 0.05970976905044165
iteration: 20 Logisticloss: 0.059302370376622865
iteration: 21 Logisticloss: 0.05890110692044449
iteration: 22 Logisticloss: 0.058505529118678894
iteration: 23 Logisticloss: 0.058115252611311015
iteration: 24 Logisticloss: 0.05772994636496498
iteration: 25 Logisticloss: 0.05734932332339625

```

Output_logistic_test.txt

```

iteration: 26 Logisticloss: 0.056973132975651035
iteration: 27 Logisticloss: 0.056601155395608824
iteration: 28 Logisticloss: 0.05623319642202739
iteration: 29 Logisticloss: 0.05586908373097607
iteration: 30 Logisticloss: 0.05550866361263938
iteration: 31 Logisticloss: 0.05515179830861727
iteration: 32 Logisticloss: 0.054798363798624794
iteration: 33 Logisticloss: 0.05444824795007321
iteration: 34 Logisticloss: 0.05410134896261779
iteration: 35 Logisticloss: 0.053757574053965605
iteration: 36 Logisticloss: 0.05341683834417194
iteration: 37 Logisticloss: 0.053079063904138635
iteration: 38 Logisticloss: 0.05274417894065853
iteration: 39 Logisticloss: 0.05241211709556691
iteration: 40 Logisticloss: 0.05208281684069144
iteration: 41 Logisticloss: 0.05175622095358587
iteration: 42 Logisticloss: 0.05143227606166929
iteration: 43 Logisticloss: 0.051110932244519805
iteration: 44 Logisticloss: 0.050792142685795405
iteration: 45 Logisticloss: 0.050475863367654125
iteration: 46 Logisticloss: 0.050162052801697374
iteration: 47 Logisticloss: 0.049850671791399945
iteration: 48 Logisticloss: 0.049541683221770945
iteration: 49 Logisticloss: 0.04923505187263415
iteration: 50 Logisticloss: 0.04893074425245442
iteration: 51 Logisticloss: 0.048628728450084556
iteration: 52 Logisticloss: 0.04832897400218449
iteration: 53 Logisticloss: 0.048031451774380764
iteration: 54 Logisticloss: 0.04773613385450193
iteration: 55 Logisticloss: 0.047442993456452066
iteration: 56 Logisticloss: 0.047152004833478034
iteration: 57 Logisticloss: 0.04686314319974868
iteration: 58 Logisticloss: 0.0465763846593065
iteration: 59 Logisticloss: 0.04629170614157137
iteration: 60 Logisticloss: 0.0460090853426798
iteration: 61 Logisticloss: 0.04572850067203272
iteration: 62 Logisticloss: 0.04544993120350103
iteration: 63 Logisticloss: 0.04517335663080604
iteration: 64 Logisticloss: 0.04489875722664866
iteration: 65 Logisticloss: 0.044626113805212246
iteration: 66 Logisticloss: 0.04435540768770771
iteration: 67 Logisticloss: 0.044086620670667355
iteration: 68 Logisticloss: 0.043819734996728546
iteration: 69 Logisticloss: 0.04355473332767573
iteration: 70 Logisticloss: 0.04329159871953683
iteration: 71 Logisticloss: 0.04303031459955166
iteration: 72 Logisticloss: 0.04277086474484947
iteration: 73 Logisticloss: 0.042513233262691325
iteration: 74 Logisticloss: 0.04225740457214682
iteration: 75 Logisticloss: 0.04200336338708984
iteration: 76 Logisticloss: 0.04175109470040809
iteration: 77 Logisticloss: 0.04150058376933337

```

Output_logistic_test.txt

```

iteration: 78 Logisticloss: 0.041251816101807656
iteration: 79 Logisticloss: 0.04100477744380836
iteration: 80 Logisticloss: 0.04075945376756428
iteration: 81 Logisticloss: 0.04051583126059831
iteration: 82 Logisticloss: 0.0402738963155409
iteration: 83 Logisticloss: 0.04003363552066066
iteration: 84 Logisticloss: 0.03979503565106525
iteration: 85 Logisticloss: 0.03955808366052784
iteration: 86 Logisticloss: 0.03932276667389874
iteration: 87 Logisticloss: 0.03908907198006435
iteration: 88 Logisticloss: 0.03885698702541883
iteration: 89 Logisticloss: 0.038626499407815346
iteration: 90 Logisticloss: 0.03839759687096687
iteration: 91 Logisticloss: 0.038170267299267556
iteration: 92 Logisticloss: 0.03794449871300801
iteration: 93 Logisticloss: 0.037720279263958746
iteration: 94 Logisticloss: 0.03749759723129794
iteration: 95 Logisticloss: 0.03727644101786043
iteration: 96 Logisticloss: 0.03705679914668624
iteration: 97 Logisticloss: 0.03683866025784809
iteration: 98 Logisticloss: 0.036622013105537705
iteration: 99 Logisticloss: 0.036406846555392544
[-8.22865591e-04  6.30641312e-04 -2.78326076e-04 ...  7.04127484e-05
 1.10773134e-04  3.00091911e-04]

```

CROSS VALIDATION 48

```

iteration: 0 Logisticloss: 7.887578762099012
iteration: 1 Logisticloss: 0.0767660617263539
iteration: 2 Logisticloss: 0.06358583880341784
iteration: 3 Logisticloss: 0.062512701633001
iteration: 4 Logisticloss: 0.061672845269261985
iteration: 5 Logisticloss: 0.06096456487156148
iteration: 6 Logisticloss: 0.060339510308524094
iteration: 7 Logisticloss: 0.05977128717591469
iteration: 8 Logisticloss: 0.05924409159385217
iteration: 9 Logisticloss: 0.05874780772700295
iteration: 10 Logisticloss: 0.05827562358286333
iteration: 11 Logisticloss: 0.05782276466341817
iteration: 12 Logisticloss: 0.057385774089252974
iteration: 13 Logisticloss: 0.05696208061932172
iteration: 14 Logisticloss: 0.0565497277061289
iteration: 15 Logisticloss: 0.056147197168357185
iteration: 16 Logisticloss: 0.05575329079389265
iteration: 17 Logisticloss: 0.055367048675607544
iteration: 18 Logisticloss: 0.054987691552533774
iteration: 19 Logisticloss: 0.054614579256939286
iteration: 20 Logisticloss: 0.0542471802201829
iteration: 21 Logisticloss: 0.05388504872922249
iteration: 22 Logisticloss: 0.0535278077156964
iteration: 23 Logisticloss: 0.05317513555985901
iteration: 24 Logisticloss: 0.052826755851706084
iteration: 25 Logisticloss: 0.052482429359924726
iteration: 26 Logisticloss: 0.05214194766967684

```


Output_logistic_test.txt

```

iteration: 27 Logisticloss: 0.05180512809616646
iteration: 28 Logisticloss: 0.05147180958371954
iteration: 29 Logisticloss: 0.05114184937350124
iteration: 30 Logisticloss: 0.050815120276079165
iteration: 31 Logisticloss: 0.050491508423892856
iteration: 32 Logisticloss: 0.05017091140743746
iteration: 33 Logisticloss: 0.04985323672046079
iteration: 34 Logisticloss: 0.04953840045569166
iteration: 35 Logisticloss: 0.04922632620496589
iteration: 36 Logisticloss: 0.04891694412710263
iteration: 37 Logisticloss: 0.04861019015421818
iteration: 38 Logisticloss: 0.04830600531288969
iteration: 39 Logisticloss: 0.048004335141070366
iteration: 40 Logisticloss: 0.04770512918520921
iteration: 41 Logisticloss: 0.047408340564850604
iteration: 42 Logisticloss: 0.04711392559424694
iteration: 43 Logisticloss: 0.04682184345233431
iteration: 44 Logisticloss: 0.046532055893890124
iteration: 45 Logisticloss: 0.04624452699588522
iteration: 46 Logisticloss: 0.04595922293401906
iteration: 47 Logisticloss: 0.045676111785225876
iteration: 48 Logisticloss: 0.04539516335259942
iteration: 49 Logisticloss: 0.04511634900973063
iteration: 50 Logisticloss: 0.04483964156190422
iteration: 51 Logisticloss: 0.044565015121980515
iteration: 52 Logisticloss: 0.04429244499910385
iteration: 53 Logisticloss: 0.044021907598646014
iteration: 54 Logisticloss: 0.043753380332016895
iteration: 55 Logisticloss: 0.043486841535164515
iteration: 56 Logisticloss: 0.04322227039474713
iteration: 57 Logisticloss: 0.04295964688109732
iteration: 58 Logisticloss: 0.042698951687214305
iteration: 59 Logisticloss: 0.042440166173121095
iteration: 60 Logisticloss: 0.042183272315008305
iteration: 61 Logisticloss: 0.04192825265866029
iteration: 62 Logisticloss: 0.04167509027672264
iteration: 63 Logisticloss: 0.04142376872942487
iteration: 64 Logisticloss: 0.04117427202841942
iteration: 65 Logisticloss: 0.040926584603439314
iteration: 66 Logisticloss: 0.040680691271512505
iteration: 67 Logisticloss: 0.040436577208501544
iteration: 68 Logisticloss: 0.04019422792276493
iteration: 69 Logisticloss: 0.039953629230759666
iteration: 70 Logisticloss: 0.03971476723442468
iteration: 71 Logisticloss: 0.039477628300204105
iteration: 72 Logisticloss: 0.03924219903958352
iteration: 73 Logisticloss: 0.03900846629102702
iteration: 74 Logisticloss: 0.038776417103215464
iteration: 75 Logisticloss: 0.03854603871949505
iteration: 76 Logisticloss: 0.03831731856345694
iteration: 77 Logisticloss: 0.0380902442255748
iteration: 78 Logisticloss: 0.03786480345083551

```

Output_logistic_test.txt

```

iteration: 79 Logisticloss: 0.03764098412730381
iteration: 80 Logisticloss: 0.03741877427556739
iteration: 81 Logisticloss: 0.0371981620390134
iteration: 82 Logisticloss: 0.03697913567489204
iteration: 83 Logisticloss: 0.036761683546125495
iteration: 84 Logisticloss: 0.03654579411382468
iteration: 85 Logisticloss: 0.03633145593047811
iteration: 86 Logisticloss: 0.03611865763377971
iteration: 87 Logisticloss: 0.0359073879410649
iteration: 88 Logisticloss: 0.035697635644324766
iteration: 89 Logisticloss: 0.035489389605771124
iteration: 90 Logisticloss: 0.03528263875392463
iteration: 91 Logisticloss: 0.03507737208020116
iteration: 92 Logisticloss: 0.03487357863597033
iteration: 93 Logisticloss: 0.0346712475300627
iteration: 94 Logisticloss: 0.034470367926701
iteration: 95 Logisticloss: 0.034270929043832686
iteration: 96 Logisticloss: 0.03407292015184027
iteration: 97 Logisticloss: 0.03387633057260673
iteration: 98 Logisticloss: 0.0336811496789137
iteration: 99 Logisticloss: 0.0334873668941495
[-0.000705  0.00047743 -0.00027796 ... 0.0001966 -0.00013823
 0.0003013 ]

```

CROSS VALIDATION 49

```

iteration: 0 Logisticloss: 7.885836392364576
iteration: 1 Logisticloss: 0.07681382423561196
iteration: 2 Logisticloss: 0.06369513502325752
iteration: 3 Logisticloss: 0.06262004794410361
iteration: 4 Logisticloss: 0.061779992324955915
iteration: 5 Logisticloss: 0.061072190659743134
iteration: 6 Logisticloss: 0.06044792033409274
iteration: 7 Logisticloss: 0.05988063000164705
iteration: 8 Logisticloss: 0.059354440773444865
iteration: 9 Logisticloss: 0.05885919758551521
iteration: 10 Logisticloss: 0.05838806647546716
iteration: 11 Logisticloss: 0.05793625995073331
iteration: 12 Logisticloss: 0.05750031308974867
iteration: 13 Logisticloss: 0.05707764947662108
iteration: 14 Logisticloss: 0.056666309117116995
iteration: 15 Logisticloss: 0.056264771461163425
iteration: 16 Logisticloss: 0.055871836621007455
iteration: 17 Logisticloss: 0.05548654347193514
iteration: 18 Logisticloss: 0.055108111845948285
iteration: 19 Logisticloss: 0.05473590088407755
iteration: 20 Logisticloss: 0.05436937848006466
iteration: 21 Logisticloss: 0.05400809849529615
iteration: 22 Logisticloss: 0.053651683519594325
iteration: 23 Logisticloss: 0.05329981165557528
iteration: 24 Logisticloss: 0.052952206266003804
iteration: 25 Logisticloss: 0.05260862793289444
iteration: 26 Logisticloss: 0.05226886808812757
iteration: 27 Logisticloss: 0.051932743921701864

```

Output_logistic_test.txt

iteration: 28 Logisticloss: 0.05160009427679374
iteration: 29 Logisticloss: 0.05127077631436561
iteration: 30 Logisticloss: 0.05094466278326897
iteration: 31 Logisticloss: 0.05062163977071969
iteration: 32 Logisticloss: 0.05030160483682636
iteration: 33 Logisticloss: 0.049984465458381006
iteration: 34 Logisticloss: 0.04967013772336745
iteration: 35 Logisticloss: 0.04935854523001093
iteration: 36 Logisticloss: 0.049049618153688294
iteration: 37 Logisticloss: 0.04874329245236704
iteration: 38 Logisticloss: 0.04843950918696873
iteration: 39 Logisticloss: 0.04813821393754951
iteration: 40 Logisticloss: 0.04783935629974308
iteration: 41 Logisticloss: 0.047542889448737045
iteration: 42 Logisticloss: 0.04724876976031337
iteration: 43 Logisticloss: 0.04695695648030039
iteration: 44 Logisticloss: 0.04666741143525453
iteration: 45 Logisticloss: 0.04638009877838365
iteration: 46 Logisticloss: 0.04609498476569961
iteration: 47 Logisticloss: 0.0458120375581883
iteration: 48 Logisticloss: 0.045531227046443655
iteration: 49 Logisticloss: 0.045252524694759995
iteration: 50 Logisticloss: 0.044975903402127974
iteration: 51 Logisticloss: 0.04470133737795945
iteration: 52 Logisticloss: 0.04442880203068219
iteration: 53 Logisticloss: 0.044158273867611446
iteration: 54 Logisticloss: 0.04388973040472926
iteration: 55 Logisticloss: 0.04362315008519239
iteration: 56 Logisticloss: 0.0433585122055502
iteration: 57 Logisticloss: 0.04309579684878986
iteration: 58 Logisticloss: 0.04283498482344438
iteration: 59 Logisticloss: 0.0425760576080971
iteration: 60 Logisticloss: 0.042318997300702856
iteration: 61 Logisticloss: 0.042063786572219465
iteration: 62 Logisticloss: 0.041810408624105524
iteration: 63 Logisticloss: 0.041558847149297515
iteration: 64 Logisticloss: 0.04130908629632305
iteration: 65 Logisticloss: 0.04106111063625246
iteration: 66 Logisticloss: 0.040814905132222364
iteration: 67 Logisticloss: 0.04057045511129896
iteration: 68 Logisticloss: 0.040327746238474356
iteration: 69 Logisticloss: 0.04008676449261329
iteration: 70 Logisticloss: 0.039847496144187984
iteration: 71 Logisticloss: 0.03960992773465727
iteration: 72 Logisticloss: 0.03937404605736131
iteration: 73 Logisticloss: 0.03913983813981819
iteration: 74 Logisticloss: 0.038907291227319285
iteration: 75 Logisticloss: 0.038676392767732146
iteration: 76 Logisticloss: 0.03844713039742874
iteration: 77 Logisticloss: 0.03821949192826434
iteration: 78 Logisticloss: 0.03799346533554075
iteration: 79 Logisticloss: 0.03776903874689263

Output_logistic_test.txt

```

iteration: 80 Logisticloss: 0.03754620043204202
iteration: 81 Logisticloss: 0.0373249387933705
iteration: 82 Logisticloss: 0.037105242357262966
iteration: 83 Logisticloss: 0.03688709976618024
iteration: 84 Logisticloss: 0.0366704997714211
iteration: 85 Logisticloss: 0.0364554312265373
iteration: 86 Logisticloss: 0.03624188308136686
iteration: 87 Logisticloss: 0.036029844376653686
iteration: 88 Logisticloss: 0.03581930423922263
iteration: 89 Logisticloss: 0.03561025187768091
iteration: 90 Logisticloss: 0.03540267657861833
iteration: 91 Logisticloss: 0.03519656770327882
iteration: 92 Logisticloss: 0.03499191468467802
iteration: 93 Logisticloss: 0.03478870702514094
iteration: 94 Logisticloss: 0.03458693429423559
iteration: 95 Logisticloss: 0.03438658612707805
iteration: 96 Logisticloss: 0.03418765222298531
iteration: 97 Logisticloss: 0.03399012234445252
iteration: 98 Logisticloss: 0.03379398631643107
iteration: 99 Logisticloss: 0.033599234025885286
[-0.00071134 0.00046981 -0.00028044 ... 0.00019682 -0.00013782
 0.00030011]

```

CROSS VALIDATION 50

```

iteration: 0 Logisticloss: 7.146602793126529
iteration: 1 Logisticloss: 0.17328842671051642
iteration: 2 Logisticloss: 0.061378050273852895
iteration: 3 Logisticloss: 0.06015881594489326
iteration: 4 Logisticloss: 0.05931812089680972
iteration: 5 Logisticloss: 0.058647882724185196
iteration: 6 Logisticloss: 0.05807160125118106
iteration: 7 Logisticloss: 0.05755364431973445
iteration: 8 Logisticloss: 0.05707494409267957
iteration: 9 Logisticloss: 0.05662429578981124
iteration: 10 Logisticloss: 0.05619465074033701
iteration: 11 Logisticloss: 0.05578133709546086
iteration: 12 Logisticloss: 0.05538112722307862
iteration: 13 Logisticloss: 0.05499171444014814
iteration: 14 Logisticloss: 0.054611402974920696
iteration: 15 Logisticloss: 0.05423891586758595
iteration: 16 Logisticloss: 0.053873271405876784
iteration: 17 Logisticloss: 0.05351370107341881
iteration: 18 Logisticloss: 0.05315959354848315
iteration: 19 Logisticloss: 0.05281045555747531
iteration: 20 Logisticloss: 0.05246588392857841
iteration: 21 Logisticloss: 0.052125545265268705
iteration: 22 Logisticloss: 0.05178916091348515
iteration: 23 Logisticloss: 0.0514564956758827
iteration: 24 Logisticloss: 0.0511273492235346
iteration: 25 Logisticloss: 0.050801549479347015
iteration: 26 Logisticloss: 0.05047894746287085
iteration: 27 Logisticloss: 0.05015941323212221
iteration: 28 Logisticloss: 0.04984283265853863

```

Output_logistic_test.txt

```

iteration: 29 Logisticloss: 0.04952910484150436
iteration: 30 Logisticloss: 0.04921814001875236
iteration: 31 Logisticloss: 0.048909857864791566
iteration: 32 Logisticloss: 0.048604186095578934
iteration: 33 Logisticloss: 0.04830105931683038
iteration: 34 Logisticloss: 0.04800041806761804
iteration: 35 Logisticloss: 0.04770220802159539
iteration: 36 Logisticloss: 0.047406379316293844
iteration: 37 Logisticloss: 0.04711288598712092
iteration: 38 Logisticloss: 0.046821685487454495
iteration: 39 Logisticloss: 0.04653273827992403
iteration: 40 Logisticloss: 0.04624600748685665
iteration: 41 Logisticloss: 0.04596145859013863
iteration: 42 Logisticloss: 0.045679059172539956
iteration: 43 Logisticloss: 0.045398778693983684
iteration: 44 Logisticloss: 0.045120588297385585
iteration: 45 Logisticloss: 0.04484446063961833
iteration: 46 Logisticloss: 0.04457036974389722
iteration: 47 Logisticloss: 0.04429829087049688
iteration: 48 Logisticloss: 0.044028200403204126
iteration: 49 Logisticloss: 0.043760075749320566
iteration: 50 Logisticloss: 0.043493895251366085
iteration: 51 Logisticloss: 0.04322963810891342
iteration: 52 Logisticloss: 0.04296728430921508
iteration: 53 Logisticloss: 0.04270681456547967
iteration: 54 Logisticloss: 0.04244821026181514
iteration: 55 Logisticloss: 0.04219145340399442
iteration: 56 Logisticloss: 0.04193652657531404
iteration: 57 Logisticloss: 0.04168341289691432
iteration: 58 Logisticloss: 0.04143209599201274
iteration: 59 Logisticloss: 0.04118255995357353
iteration: 60 Logisticloss: 0.040934789314997326
iteration: 61 Logisticloss: 0.040688769023467346
iteration: 62 Logisticloss: 0.04044448441563303
iteration: 63 Logisticloss: 0.040201921195352715
iteration: 64 Logisticloss: 0.039961065413249196
iteration: 65 Logisticloss: 0.03972190344786332
iteration: 66 Logisticloss: 0.03948442198821536
iteration: 67 Logisticloss: 0.03924860801760797
iteration: 68 Logisticloss: 0.03901444879852352
iteration: 69 Logisticloss: 0.0387819318584873
iteration: 70 Logisticloss: 0.038551044976782814
iteration: 71 Logisticloss: 0.038321776171920445
iteration: 72 Logisticloss: 0.038094113689772134
iteration: 73 Logisticloss: 0.03786804599229672
iteration: 74 Logisticloss: 0.037643561746789775
iteration: 75 Logisticloss: 0.037420649815601295
iteration: 76 Logisticloss: 0.03719929924627205
iteration: 77 Logisticloss: 0.03697949926204674
iteration: 78 Logisticloss: 0.03676123925272894
iteration: 79 Logisticloss: 0.0365445087658475
iteration: 80 Logisticloss: 0.036329297498110515

```

Output_logistic_test.txt

```

iteration: 81 Logisticloss: 0.03611559528712672
iteration: 82 Logisticloss: 0.03590339210337849
iteration: 83 Logisticloss: 0.03569267804243456
iteration: 84 Logisticloss: 0.0354834433173934
iteration: 85 Logisticloss: 0.03527567825155142
iteration: 86 Logisticloss: 0.03506937327129259
iteration: 87 Logisticloss: 0.03486451889919804
iteration: 88 Logisticloss: 0.034661105747376374
iteration: 89 Logisticloss: 0.03445912451101675
iteration: 90 Logisticloss: 0.03425856596216838
iteration: 91 Logisticloss: 0.03405942094375083
iteration: 92 Logisticloss: 0.0338616803638007
iteration: 93 Logisticloss: 0.033665335189960406
iteration: 94 Logisticloss: 0.03347037644421562
iteration: 95 Logisticloss: 0.033276795197888016
iteration: 96 Logisticloss: 0.03308458256688977
iteration: 97 Logisticloss: 0.03289372970724644
iteration: 98 Logisticloss: 0.03270422781089417
iteration: 99 Logisticloss: 0.032516068101757445
[-0.00094437 0.00058247 -0.000678 ... 0.00018939 -0.00017826
 0.00028936]

```

CROSS VALIDATION 51

```

iteration: 0 Logisticloss: 11.120008004364303
iteration: 1 Logisticloss: 0.07503044924966226
iteration: 2 Logisticloss: 0.06132328725676249
iteration: 3 Logisticloss: 0.060653908258659864
iteration: 4 Logisticloss: 0.06008480433273644
iteration: 5 Logisticloss: 0.05957295968923243
iteration: 6 Logisticloss: 0.059097900977406706
iteration: 7 Logisticloss: 0.058648476557004864
iteration: 8 Logisticloss: 0.05821802375181053
iteration: 9 Logisticloss: 0.05780228197538848
iteration: 10 Logisticloss: 0.057398380420003094
iteration: 11 Logisticloss: 0.05700430248703173
iteration: 12 Logisticloss: 0.05661858261269655
iteration: 13 Logisticloss: 0.0562401250515694
iteration: 14 Logisticloss: 0.055868090592988265
iteration: 15 Logisticloss: 0.055501823030097396
iteration: 16 Logisticloss: 0.05514079987787188
iteration: 17 Logisticloss: 0.0547845984178527
iteration: 18 Logisticloss: 0.05443287173272637
iteration: 19 Logisticloss: 0.05408533142969885
iteration: 20 Logisticloss: 0.0537417349499528
iteration: 21 Logisticloss: 0.05340187608952959
iteration: 22 Logisticloss: 0.05306557781189259
iteration: 23 Logisticloss: 0.05273268672388202
iteration: 24 Logisticloss: 0.052403068777751534
iteration: 25 Logisticloss: 0.05207660588968747
iteration: 26 Logisticloss: 0.051753193252210915
iteration: 27 Logisticloss: 0.05143273717812922
iteration: 28 Logisticloss: 0.051115153356107466
iteration: 29 Logisticloss: 0.050800365428188596

```

Output_logistic_test.txt

iteration: 30 Logisticloss: 0.050488303821467566
iteration: 31 Logisticloss: 0.05017890478213715
iteration: 32 Logisticloss: 0.04987210957197147
iteration: 33 Logisticloss: 0.049567863796175164
iteration: 34 Logisticloss: 0.04926611683822038
iteration: 35 Logisticloss: 0.048966821382392556
iteration: 36 Logisticloss: 0.04866993300868877
iteration: 37 Logisticloss: 0.04837540984774787
iteration: 38 Logisticloss: 0.04808321228586564
iteration: 39 Logisticloss: 0.047793302712011175
iteration: 40 Logisticloss: 0.04750564530023667
iteration: 41 Logisticloss: 0.04722020582204908
iteration: 42 Logisticloss: 0.04693695148425267
iteration: 43 Logisticloss: 0.046655850788532176
iteration: 44 Logisticloss: 0.0463768734096589
iteration: 45 Logisticloss: 0.04609999008970541
iteration: 46 Logisticloss: 0.04582517254606215
iteration: 47 Logisticloss: 0.045552393391387405
iteration: 48 Logisticloss: 0.04528162606390056
iteration: 49 Logisticloss: 0.04501284476665872
iteration: 50 Logisticloss: 0.04474602441465017
iteration: 51 Logisticloss: 0.0444811405886989
iteration: 52 Logisticloss: 0.04421816949530996
iteration: 53 Logisticloss: 0.043957087931699224
iteration: 54 Logisticloss: 0.04369787325534955
iteration: 55 Logisticloss: 0.04344050335751566
iteration: 56 Logisticloss: 0.04318495664017264
iteration: 57 Logisticloss: 0.04293121199596248
iteration: 58 Logisticloss: 0.04267924879074543
iteration: 59 Logisticloss: 0.04242904684840849
iteration: 60 Logisticloss: 0.04218058643762294
iteration: 61 Logisticloss: 0.04193384826027685
iteration: 62 Logisticloss: 0.04168881344133902
iteration: 63 Logisticloss: 0.041445463519938074
iteration: 64 Logisticloss: 0.04120378044146308
iteration: 65 Logisticloss: 0.04096374655051457
iteration: 66 Logisticloss: 0.04072534458455277
iteration: 67 Logisticloss: 0.040488557668107036
iteration: 68 Logisticloss: 0.040253369307426526
iteration: 69 Logisticloss: 0.04001976338546495
iteration: 70 Logisticloss: 0.03978772415710584
iteration: 71 Logisticloss: 0.03955723624454562
iteration: 72 Logisticloss: 0.0393282846327625
iteration: 73 Logisticloss: 0.03910085466500881
iteration: 74 Logisticloss: 0.03887493203827301
iteration: 75 Logisticloss: 0.03865050279866566
iteration: 76 Logisticloss: 0.03842755333669082
iteration: 77 Logisticloss: 0.038206070382371816
iteration: 78 Logisticloss: 0.03798604100020491
iteration: 79 Logisticloss: 0.037767452583921585
iteration: 80 Logisticloss: 0.03755029285104435
iteration: 81 Logisticloss: 0.03733454983722555

Output_logistic_test.txt

```

iteration: 82 Logisticloss: 0.037120211890363373
iteration: 83 Logisticloss: 0.0369072676644923
iteration: 84 Logisticloss: 0.03669570611344928
iteration: 85 Logisticloss: 0.03648551648431897
iteration: 86 Logisticloss: 0.036276688310665314
iteration: 87 Logisticloss: 0.03606921140555754
iteration: 88 Logisticloss: 0.03586307585440166
iteration: 89 Logisticloss: 0.035658272007590135
iteration: 90 Logisticloss: 0.03545479047298319
iteration: 91 Logisticloss: 0.03525262210823706
iteration: 92 Logisticloss: 0.03505175801299534
iteration: 93 Logisticloss: 0.034852189520959455
iteration: 94 Logisticloss: 0.0346539081918566
iteration: 95 Logisticloss: 0.03445690580332156
iteration: 96 Logisticloss: 0.03426117434271094
iteration: 97 Logisticloss: 0.03406670599886728
iteration: 98 Logisticloss: 0.03387349315385074
iteration: 99 Logisticloss: 0.03368152837465585
[-0.00058525 0.00055121 -0.0001787 ... 0.00023824 -0.00025128
 0.00030003]

```

CROSS VALIDATION 52

```

iteration: 0 Logisticloss: 7.887638659559456
iteration: 1 Logisticloss: 0.07685602031787482
iteration: 2 Logisticloss: 0.0636859155349015
iteration: 3 Logisticloss: 0.06261331545872226
iteration: 4 Logisticloss: 0.06177444419663083
iteration: 5 Logisticloss: 0.06106731803156652
iteration: 6 Logisticloss: 0.060443488882970624
iteration: 7 Logisticloss: 0.059876520461664536
iteration: 8 Logisticloss: 0.05935058849558425
iteration: 9 Logisticloss: 0.058855566238122305
iteration: 10 Logisticloss: 0.05838463541202151
iteration: 11 Logisticloss: 0.05793301767290586
iteration: 12 Logisticloss: 0.057497253661729884
iteration: 13 Logisticloss: 0.05707477046423259
iteration: 14 Logisticloss: 0.05666361035726652
iteration: 15 Logisticloss: 0.05626225430359298
iteration: 16 Logisticloss: 0.055869503448689704
iteration: 17 Logisticloss: 0.05548439739106768
iteration: 18 Logisticloss: 0.055106156481971216
iteration: 19 Logisticloss: 0.05473414024552316
iteration: 20 Logisticloss: 0.0543678168666858
iteration: 21 Logisticloss: 0.054006740435610844
iteration: 22 Logisticloss: 0.0536505337282709
iteration: 23 Logisticloss: 0.05329887500437886
iteration: 24 Logisticloss: 0.05295148776411505
iteration: 25 Logisticloss: 0.05260813271376723
iteration: 26 Logisticloss: 0.05226860140094182
iteration: 27 Logisticloss: 0.051932711126061994
iteration: 28 Logisticloss: 0.051600300839725485
iteration: 29 Logisticloss: 0.051271227808939265
iteration: 30 Logisticloss: 0.05094536488836694

```


Output_logistic_test.txt

```

iteration: 31 Logisticloss: 0.05062259827160006
iteration: 32 Logisticloss: 0.050302825626227954
iteration: 33 Logisticloss: 0.049985954537981984
iteration: 34 Logisticloss: 0.04967190120545783
iteration: 35 Logisticloss: 0.049360589339273384
iteration: 36 Logisticloss: 0.049051949229007276
iteration: 37 Logisticloss: 0.04874591694860399
iteration: 38 Logisticloss: 0.04844243367665508
iteration: 39 Logisticloss: 0.04814144511245825
iteration: 40 Logisticloss: 0.047842900972308255
iteration: 41 Logisticloss: 0.04754675455329478
iteration: 42 Logisticloss: 0.04725296235414265
iteration: 43 Logisticloss: 0.04696148374444506
iteration: 44 Logisticloss: 0.046672280675109805
iteration: 45 Logisticloss: 0.0463853174240326
iteration: 46 Logisticloss: 0.04610056037198663
iteration: 47 Logisticloss: 0.0458179778045166
iteration: 48 Logisticloss: 0.04553753973628659
iteration: 49 Logisticloss: 0.045259217754874695
iteration: 50 Logisticloss: 0.044982984881461685
iteration: 51 Logisticloss: 0.04470881544623941
iteration: 52 Logisticloss: 0.04443668497667951
iteration: 53 Logisticloss: 0.044166570097070874
iteration: 54 Logisticloss: 0.04389844843795679
iteration: 55 Logisticloss: 0.04363229855429297
iteration: 56 Logisticloss: 0.04336809985130808
iteration: 57 Logisticloss: 0.04310583251718545
iteration: 58 Logisticloss: 0.042845477461800494
iteration: 59 Logisticloss: 0.04258701626084949
iteration: 60 Logisticloss: 0.042330431104789214
iteration: 61 Logisticloss: 0.04207570475208207
iteration: 62 Logisticloss: 0.04182282048630406
iteration: 63 Logisticloss: 0.04157176207672708
iteration: 64 Logisticloss: 0.04132251374203603
iteration: 65 Logisticloss: 0.0410750601168804
iteration: 66 Logisticloss: 0.040829386220997535
iteration: 67 Logisticloss: 0.04058547743067411
iteration: 68 Logisticloss: 0.040343319452341285
iteration: 69 Logisticloss: 0.04010289829812069
iteration: 70 Logisticloss: 0.03986420026316112
iteration: 71 Logisticloss: 0.03962721190462178
iteration: 72 Logisticloss: 0.039391920022175925
iteration: 73 Logisticloss: 0.03915831163992082
iteration: 74 Logisticloss: 0.038926373989593255
iteration: 75 Logisticloss: 0.03869609449500022
iteration: 76 Logisticloss: 0.038467460757583546
iteration: 77 Logisticloss: 0.0382404605430457
iteration: 78 Logisticloss: 0.03801508176897161
iteration: 79 Logisticloss: 0.03779131249338658
iteration: 80 Logisticloss: 0.03756914090419723
iteration: 81 Logisticloss: 0.03734855530946625
iteration: 82 Logisticloss: 0.03712954412847644

```

Output_logistic_test.txt

```

iteration: 83 Logisticloss: 0.03691209588354295
iteration: 84 Logisticloss: 0.03669619919253643
iteration: 85 Logisticloss: 0.03648184276208097
iteration: 86 Logisticloss: 0.03626901538139534
iteration: 87 Logisticloss: 0.03605770591674616
iteration: 88 Logisticloss: 0.03584790330648376
iteration: 89 Logisticloss: 0.035639596556634144
iteration: 90 Logisticloss: 0.035432774737019515
iteration: 91 Logisticloss: 0.03522742697788284
iteration: 92 Logisticloss: 0.035023542466991534
iteration: 93 Logisticloss: 0.034821110447196206
iteration: 94 Logisticloss: 0.03462012021442122
iteration: 95 Logisticloss: 0.03442056111606384
iteration: 96 Logisticloss: 0.034222422549779336
iteration: 97 Logisticloss: 0.03402569396262924
iteration: 98 Logisticloss: 0.0338303648505705
iteration: 99 Logisticloss: 0.033636424758262964
[-0.00071187 0.00047005 -0.00028081 ... 0.00019688 -0.00013802
 0.00030017]

```

CROSS VALIDATION 53

```

iteration: 0 Logisticloss: 13.584829913534197
iteration: 1 Logisticloss: 0.06521728388565673
iteration: 2 Logisticloss: 0.05958576921671364
iteration: 3 Logisticloss: 0.05828234410287265
iteration: 4 Logisticloss: 0.05739841266178856
iteration: 5 Logisticloss: 0.05669605482050507
iteration: 6 Logisticloss: 0.05609409180746836
iteration: 7 Logisticloss: 0.05555536950197188
iteration: 8 Logisticloss: 0.05505996371048141
iteration: 9 Logisticloss: 0.05459604270263845
iteration: 10 Logisticloss: 0.05415605567545537
iteration: 11 Logisticloss: 0.053734916907655625
iteration: 12 Logisticloss: 0.05332905392620859
iteration: 13 Logisticloss: 0.052935871003587986
iteration: 14 Logisticloss: 0.05255342892689377
iteration: 15 Logisticloss: 0.05218024475935184
iteration: 16 Logisticloss: 0.051815161709577125
iteration: 17 Logisticloss: 0.05145726176513881
iteration: 18 Logisticloss: 0.05110580538048405
iteration: 19 Logisticloss: 0.05076018882507242
iteration: 20 Logisticloss: 0.050419913377491195
iteration: 21 Logisticloss: 0.05008456265745357
iteration: 22 Logisticloss: 0.04975378566759729
iteration: 23 Logisticloss: 0.04942728391754472
iteration: 24 Logisticloss: 0.04910480151626803
iteration: 25 Logisticloss: 0.04878611745587343
iteration: 26 Logisticloss: 0.048471039535731744
iteration: 27 Logisticloss: 0.04815939952998814
iteration: 28 Logisticloss: 0.0478510493084505
iteration: 29 Logisticloss: 0.04754585769625194
iteration: 30 Logisticloss: 0.04724370791158844
iteration: 31 Logisticloss: 0.04694449545987446

```

Output_logistic_test.txt

iteration: 32 Logisticloss: 0.04664812639128298
iteration: 33 Logisticloss: 0.04635451584985254
iteration: 34 Logisticloss: 0.046063586858237734
iteration: 35 Logisticloss: 0.0457752692941993
iteration: 36 Logisticloss: 0.04548949902410212
iteration: 37 Logisticloss: 0.045206217165750115
iteration: 38 Logisticloss: 0.044925369458363146
iteration: 39 Logisticloss: 0.04464690572178123
iteration: 40 Logisticloss: 0.04437077939034998
iteration: 41 Logisticloss: 0.04409694710961023
iteration: 42 Logisticloss: 0.043825368386042236
iteration: 43 Logisticloss: 0.04355600528182106
iteration: 44 Logisticloss: 0.04328882214791605
iteration: 45 Logisticloss: 0.04302378538998203
iteration: 46 Logisticloss: 0.04276086326240018
iteration: 47 Logisticloss: 0.04250002568656889
iteration: 48 Logisticloss: 0.04224124409015922
iteration: 49 Logisticloss: 0.0419844912645526
iteration: 50 Logisticloss: 0.041729741238100616
iteration: 51 Logisticloss: 0.0414769691631933
iteration: 52 Logisticloss: 0.04122615121541623
iteration: 53 Logisticloss: 0.04097726450332079
iteration: 54 Logisticloss: 0.04073028698753801
iteration: 55 Logisticloss: 0.04048519740814122
iteration: 56 Logisticloss: 0.04024197521930923
iteration: 57 Logisticloss: 0.040000600530468194
iteration: 58 Logisticloss: 0.0397610540531966
iteration: 59 Logisticloss: 0.0395233170532688
iteration: 60 Logisticloss: 0.03928737130729194
iteration: 61 Logisticloss: 0.039053199063456674
iteration: 62 Logisticloss: 0.03882078300598172
iteration: 63 Logisticloss: 0.03859010622288105
iteration: 64 Logisticloss: 0.038361152176726046
iteration: 65 Logisticloss: 0.03813390467811323
iteration: 66 Logisticloss: 0.037908347861579525
iteration: 67 Logisticloss: 0.03768446616373634
iteration: 68 Logisticloss: 0.037462244303418345
iteration: 69 Logisticloss: 0.0372416672636645
iteration: 70 Logisticloss: 0.037022720275367474
iteration: 71 Logisticloss: 0.036805388802445084
iteration: 72 Logisticloss: 0.036589658528401306
iteration: 73 Logisticloss: 0.036375515344157866
iteration: 74 Logisticloss: 0.03616294533704847
iteration: 75 Logisticloss: 0.03595193478087824
iteration: 76 Logisticloss: 0.03574247012695931
iteration: 77 Logisticloss: 0.035534537996042184
iteration: 78 Logisticloss: 0.03532812517106887
iteration: 79 Logisticloss: 0.03512321859068061
iteration: 80 Logisticloss: 0.03491980534341834
iteration: 81 Logisticloss: 0.03471787266255898
iteration: 82 Logisticloss: 0.03451740792153573
iteration: 83 Logisticloss: 0.034318398629893616

Output_logistic_test.txt

```
iteration: 84 Logisticloss: 0.03412083242973594
iteration: 85 Logisticloss: 0.03392469709262045
iteration: 86 Logisticloss: 0.033729980516866355
iteration: 87 Logisticloss: 0.033536670725236764
iteration: 88 Logisticloss: 0.03334475586296296
iteration: 89 Logisticloss: 0.03315422419607939
iteration: 90 Logisticloss: 0.0329650641100397
iteration: 91 Logisticloss: 0.03277726410858688
iteration: 92 Logisticloss: 0.03259081281285091
iteration: 93 Logisticloss: 0.0324056989606497
iteration: 94 Logisticloss: 0.03222191140597043
iteration: 95 Logisticloss: 0.03203943911860862
iteration: 96 Logisticloss: 0.03185827118394477
iteration: 97 Logisticloss: 0.03167839680283819
iteration: 98 Logisticloss: 0.03149980529161933
iteration: 99 Logisticloss: 0.031322486082162454
[-7.49295981e-04  6.10867732e-04 -2.98880229e-04 ...  1.72988572e-04
 -1.63580846e-05  3.63585392e-04]
Accuracy (Logistic Loss):      0.8529411764705882
```