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emmanuellaeyo@ella Provided % python3 run_regression.py gamesite.txt 1500 0.00000001

Results for data set 0
Learned weights were: [-0.0014767256403934934, 0.6191701429697869]
Error on TRAINING set: 104788
Error on TEST set: 110388

Results for data set 1
Learned weights were: [-0.0014948860055510195, 0.6191701566178873]
Error on TRAINING set: 106224
Error on TEST set: 97461

Results for data set 2
Learned weights were: [-0.0014953859906552207, 0.6191701567398739]
Error on TRAINING set: 106561
Error on TEST set: 94429

Results for data set 3
Learned weights were: [-0.0014740584859551046, 0.6191701427499134]
Error on TRAINING set: 103889
Error on TEST set: 118472

Results for data set 4
Learned weights were: [-0.0014787770767593804, 0.6191701156374736]
Error on TRAINING set: 104748
Error on TEST set: 110744

Results for data set 5
Learned weights were: [-0.00148317735705511, 0.6191701291973721]
Error on TRAINING set: 105631
Error on TEST set: 102795

Results for data set 6
Learned weights were: [-0.0014813078679800436, 0.6191646681519468]
Error on TRAINING set: 104997
Error on TEST set: 108501

Results for data set 7
Learned weights were: [-0.001481034693259347, 0.6192541847684653]
Error on TRAINING set: 105255
Error on TEST set: 106181

Results for data set 8
Learned weights were: [-0.0014902919612087416, 0.6196482962546037]
Error on TRAINING set: 105915
Error on TEST set: 100233

Results for data set 9
Learned weights were: [-0.0014886997502288751, 0.6314242454312954]
Error on TRAINING set: 105598
Error on TEST set: 104826

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Total average test error: 527015.0

The average test error has decreased considerably in the findings acquired with 1500 iterations and a learning rate of 0.00000001, suggesting improved performance on unseen data.

We can see from the findings for each dataset that the learned weights are very similar, suggesting that the algorithm is learning a consistent pattern across the data.

Overfitting is evident because the training error is consistently greater than the test error, showing that the model is memorizing the training data to some degree. The amount of overfitting, however, is relatively modest, and the model still performs fairly well on unseen data.