Project 1

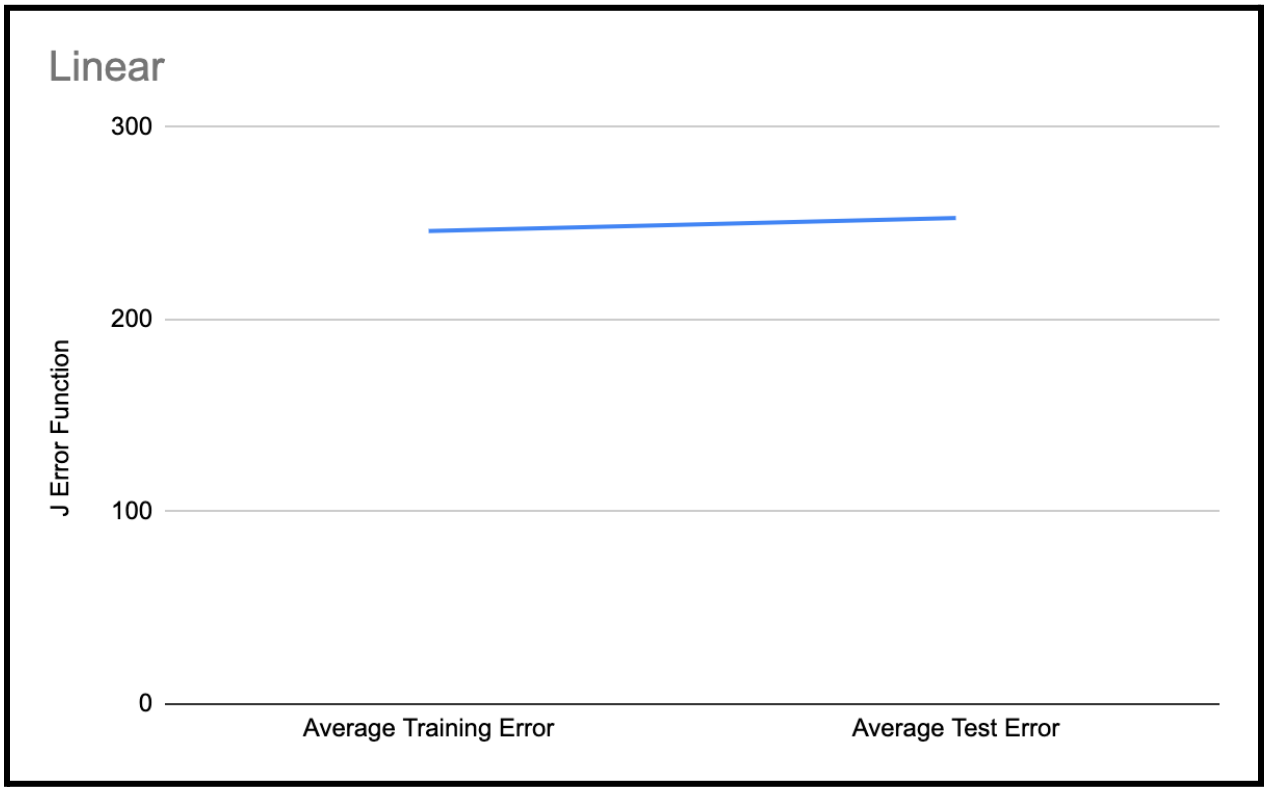
Predicting Birth Weight Based on Mother Characteristics

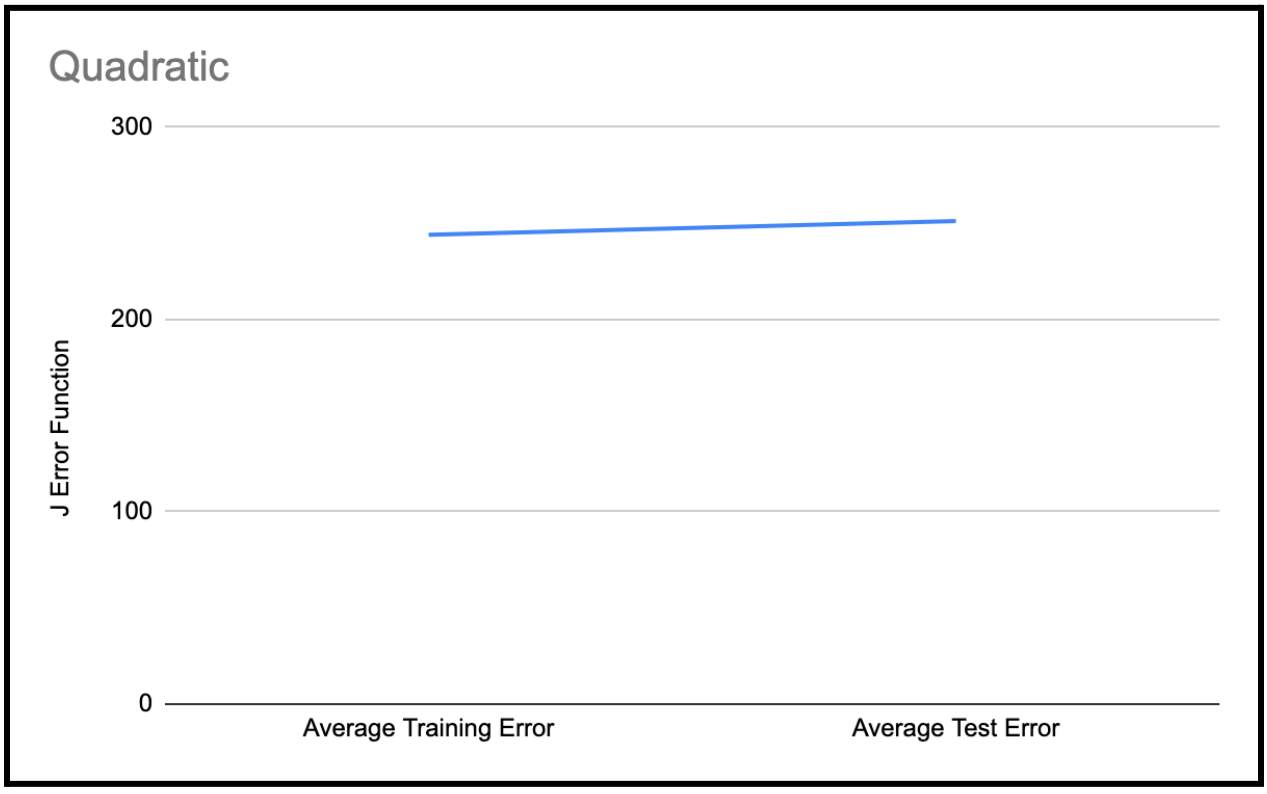
Error Analysis of Linear and Quadratic Regression Models:

K-Fold	Linear Fit	Quadratic Fit
1234	246.7369815	242.5501582
5	255.3849606	232.7839525
1235	237.3664807	244.2472392
4	248.231126	218.6249665
1245	255.3825426	244.3861271
3	250.1352182	273.4234861
1345	243.8756341	242.9761216
2	261.5715541	270.2242122
2345	246.8156456	246.230797
1	248.7136583	261.0440999
Average Training Error	246.0354569	244.0780886
Average Test Error	252.8073034	251.2201434

This analysis shows that the Quadratic Regression Model is most fitting for this data. This is shown in both the Average Training and Test Error Analysis values where the Quadratic fit has less J Error Values than their Linear Counterparts. Therefore, when tested against both the test and training data sets, the quadratic model better predicts values that are inputted into the algorithm than the linear model.

Graphs:


Linear
300
200
100
0
J Error Function
Average Training Error
Average Test Error


Quadratic
300
200
100
0
J Error Function
Average Training Error
Average Test Error