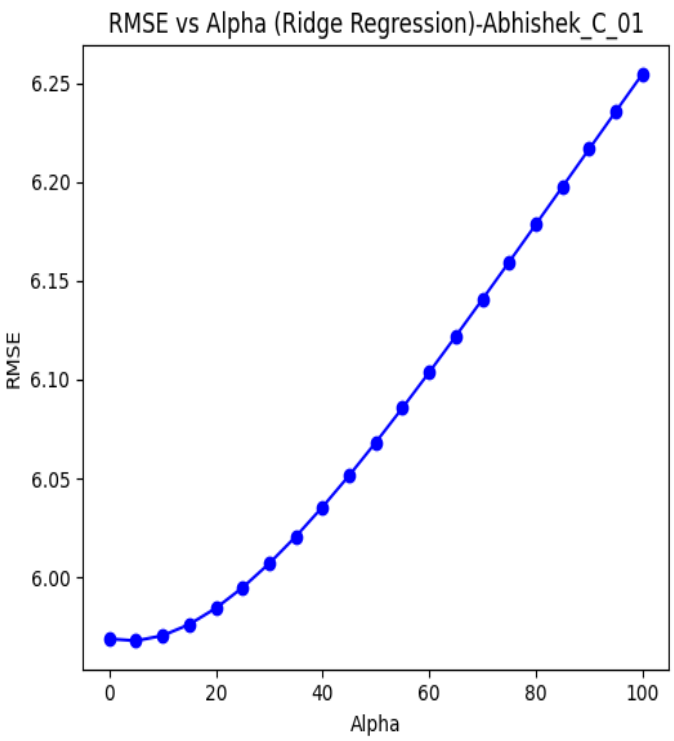
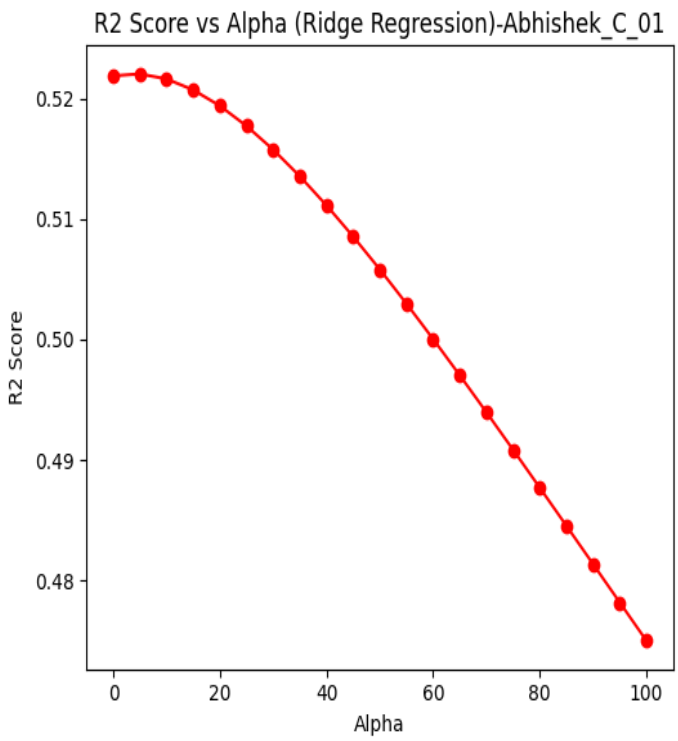
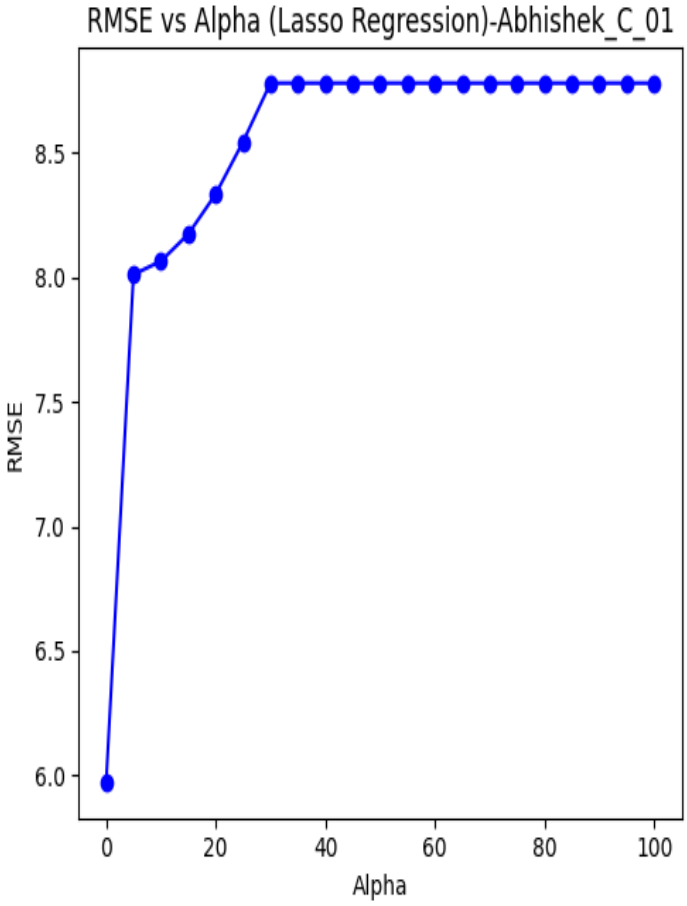
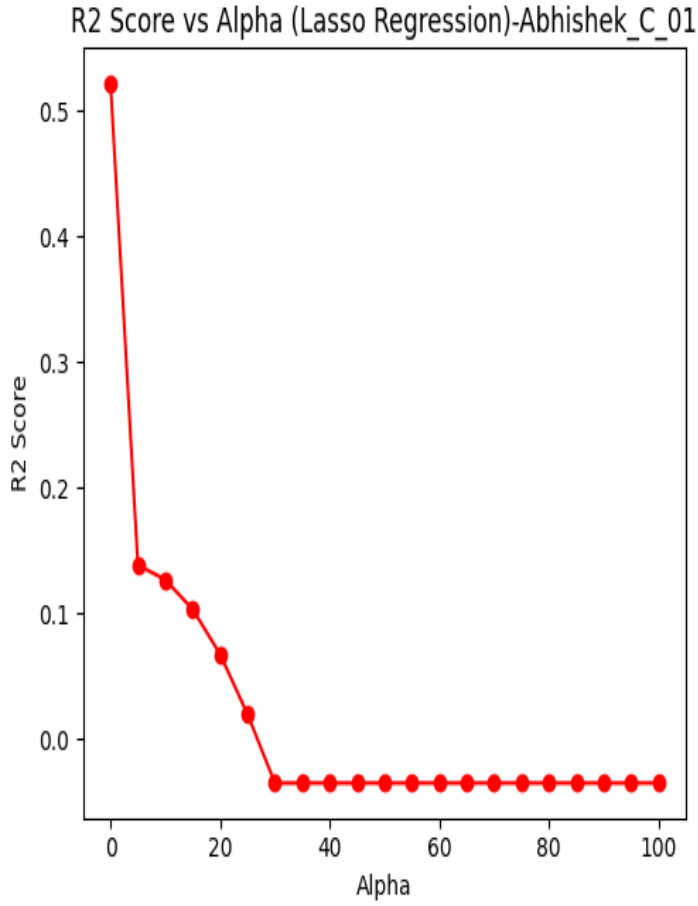
```
Dataset Description:
             crim          zn       indus        chas  ...     ptratio           b       lstat        medv
count  506.000000  506.000000  506.000000  506.000000  ...  506.000000  506.000000  506.000000  506.000000
mean     3.613524   11.363636   11.136779    0.069170  ...   18.455534  356.674032   12.653063   22.532806
std      8.601545   23.322453    6.860353    0.253994  ...    2.164946   91.294864    7.141062    9.197104
min      0.006320    0.000000    0.460000    0.000000  ...   12.600000    0.320000    1.730000    5.000000
25%      0.082045    0.000000    5.190000    0.000000  ...   17.400000  375.377500    6.950000   17.025000
50%      0.256510    0.000000    9.690000    0.000000  ...   19.050000  391.440000   11.360000   21.200000
75%      3.677083   12.500000   18.100000    0.000000  ...   20.200000  396.225000   16.955000   25.000000
max     88.976200  100.000000   27.740000    1.000000  ...   22.000000  396.900000   37.970000   50.000000

[8 rows x 14 columns]

Self-Correlation Matrix:
         crim    zn  indus  chas   nox    rm   age   dis   rad   tax  ptratio     b  lstat  medv
crim     1.00 -0.20   0.41 -0.06  0.42 -0.22  0.35 -0.38  0.63  0.58     0.29 -0.39   0.46 -0.39
zn      -0.20  1.00  -0.53 -0.04 -0.52  0.31 -0.57  0.66 -0.31 -0.31    -0.39  0.18  -0.41  0.36
indus    0.41 -0.53   1.00  0.06  0.76 -0.39  0.64 -0.71  0.60  0.72     0.38 -0.36   0.60 -0.48
chas    -0.06 -0.04   0.06  1.00  0.09  0.09  0.09 -0.10 -0.01 -0.04    -0.12  0.05  -0.05  0.18
nox      0.42 -0.52   0.76  0.09  1.00 -0.30  0.73 -0.77  0.61  0.67     0.19 -0.38   0.59 -0.43
rm      -0.22  0.31  -0.39  0.09 -0.30  1.00 -0.24  0.21 -0.21 -0.29    -0.36  0.13  -0.61  0.70
age      0.35 -0.57   0.64  0.09  0.73 -0.24  1.00 -0.75  0.46  0.51     0.26 -0.27   0.60 -0.38
dis     -0.38  0.66  -0.71 -0.10 -0.77  0.21 -0.75  1.00 -0.49 -0.53    -0.23  0.29  -0.50  0.25
rad      0.63 -0.31   0.60 -0.01  0.61 -0.21  0.46 -0.49  1.00  0.91     0.46 -0.44   0.49 -0.38
tax      0.58 -0.31   0.72 -0.04  0.67 -0.29  0.51 -0.53  0.91  1.00     0.46 -0.44   0.54 -0.47
ptratio  0.29 -0.39   0.38 -0.12  0.19 -0.36  0.26 -0.23  0.46  0.46     1.00 -0.18   0.37 -0.51
b       -0.39  0.18  -0.36  0.05 -0.38  0.13 -0.27  0.29 -0.44 -0.44    -0.18  1.00  -0.37  0.33
lstat    0.46 -0.41   0.60 -0.05  0.59 -0.61  0.60 -0.50  0.49  0.54     0.37 -0.37   1.00 -0.74
medv    -0.39  0.36  -0.48  0.18 -0.43  0.70 -0.38  0.25 -0.38 -0.47    -0.51  0.33  -0.74  1.00
```

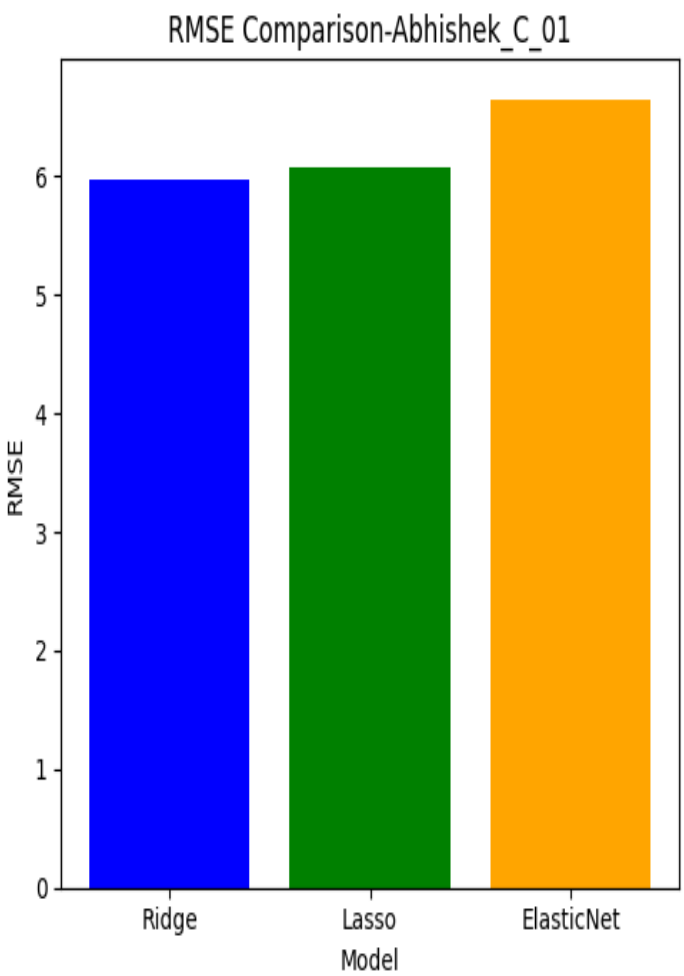
```
Variable with Minimum Correlation with MEDV: lstat (-0.74)
Variable with Maximum Correlation with MEDV: medv (1.0)

Predicted values for the test set:
[23.6 32.4 13.6 22.8 16.1 20.  17.8 14.  19.6 16.8 21.5 18.9  7.  21.2
 18.5 29.8 18.8 10.2 50.  14.1 25.2 29.1 12.7 22.4 14.2 13.8 20.3 14.9
 21.7 18.3 23.1 23.8 15.  20.8 19.1 19.4 34.7 19.5 24.4 23.4 19.7 28.2
 50.  17.4 22.6 15.1 13.1 24.2 19.9 24.  18.9 35.4 15.2 26.5 43.5 21.2
 18.4 28.5 23.9 18.5 25.  35.4 31.5 20.2 24.1 20.  13.1 24.8 30.8 12.7
 20.  23.7 10.8 20.6 20.8  5.  20.1 48.5 10.9  7.  20.9 17.2 20.9  9.7
 19.4 29.  16.4 25.  25.  17.1 23.2 10.4 19.6 17.2 27.5 23.  50.  17.9
  9.6 17.2 22.5 21.4 12.  19.9 19.4 13.4 18.2 24.6 21.1 24.7  8.7 27.5
 20.7 36.2 31.6 11.7 39.8 13.9 21.8 23.7 17.6 24.4  8.8 19.2 25.3 20.4
 23.1 37.9 15.6 45.4 15.7 22.6 14.5 18.7 17.8 16.1 20.6 31.6 29.1 15.6
 17.5 22.5 19.4 19.3  8.5 20.6 17.  17.1 14.5 50.  14.3 12.6]

Mean Squared Error: 0.00
Root Mean Squared Error: 0.00
R^2 Score: 1.00
```

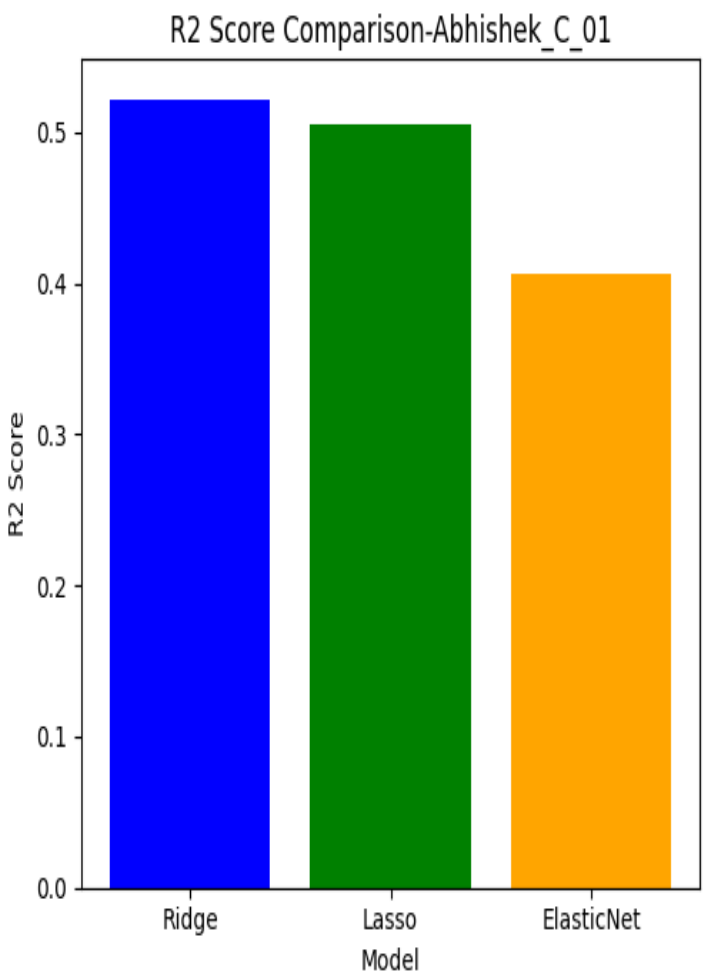


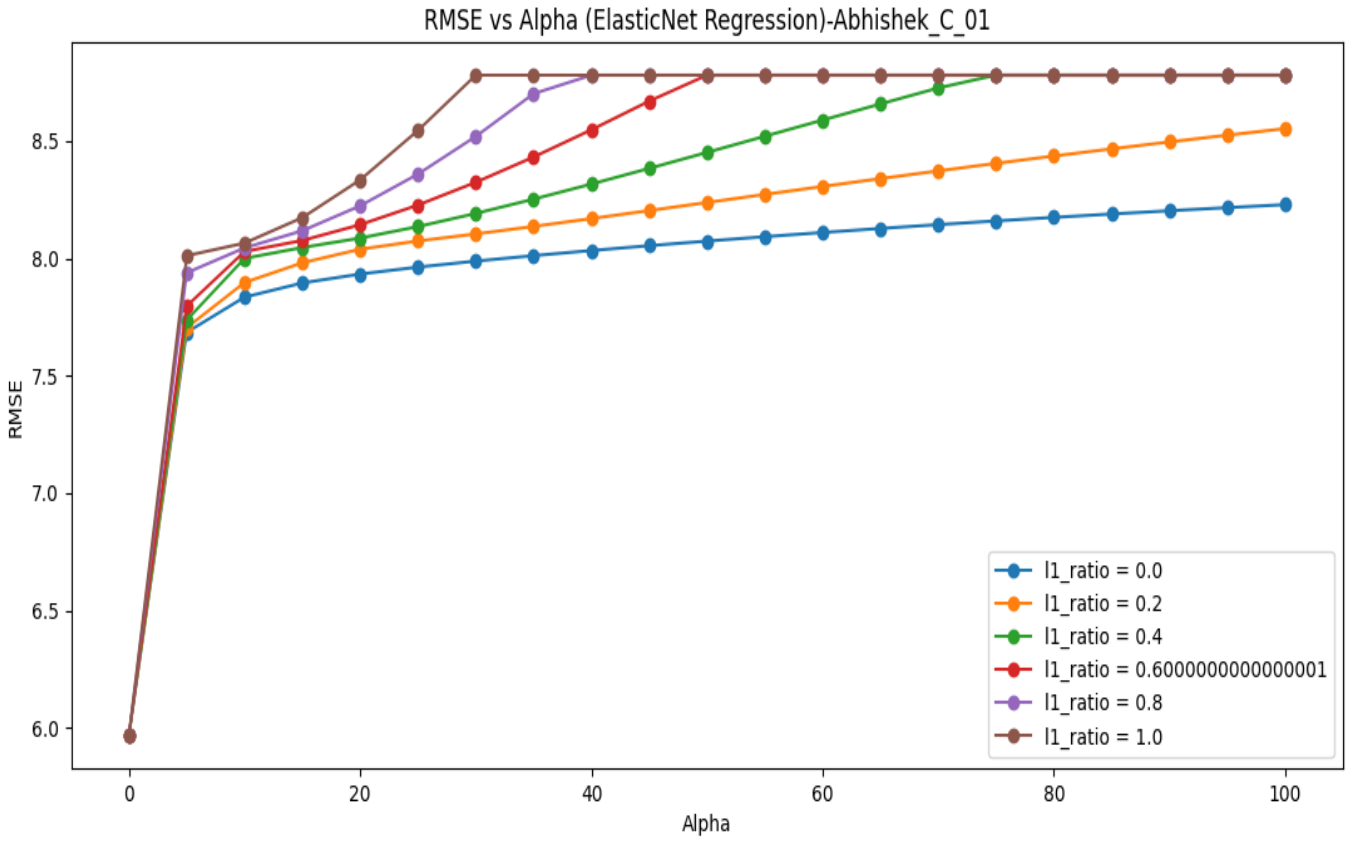


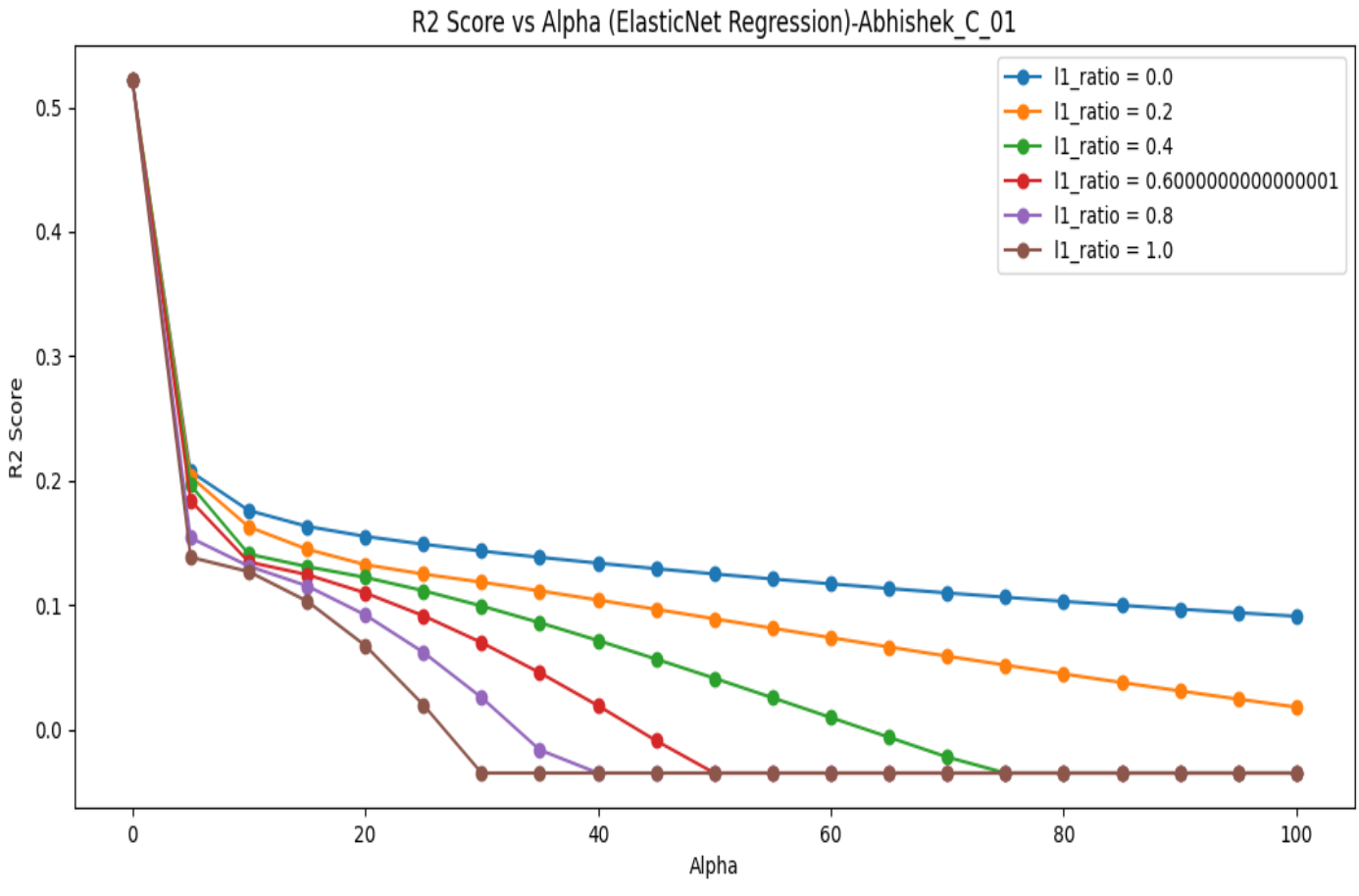

RMSE vs Alpha (Lasso Regression)-Abhishek_C_01
RMSE
Alpha
8.5
8.0
7.5
7.0
6.5
6.0
0
20
40
60
80
100


R2 Score vs Alpha (Lasso Regression)-Abhishek_C_01
R2 Score
Alpha
0.5
0.4
0.3
0.2
0.1
0.0
0
20
40
60
80
100


RMSE Comparison-Abhishek_C_01
RMSE
Model
6
5
4
3
2
1
0
Ridge
Lasso
ElasticNet


R2 Score Comparison-Abhishek_C_01
R2 Score
Model
0.5
0.4
0.3
0.2
0.1
0.0
Ridge
Lasso
ElasticNet


RMSE vs Alpha (ElasticNet Regression)-Abhishek_C_01
RMSE
Alpha
8.5
8.0
7.5
7.0
6.5
6.0
0
20
40
60
80
100
l1_ratio = 0.0
l1_ratio = 0.2
l1_ratio = 0.4
l1_ratio = 0.6000000000000001
l1_ratio = 0.8
l1_ratio = 1.0


R2 Score vs Alpha (ElasticNet Regression)-Abhishek_C_01
R2 Score
Alpha
0.5
0.4
0.3
0.2
0.1
0.0
0
20
40
60
80
100
l1_ratio = 0.0
l1_ratio = 0.2
l1_ratio = 0.4
l1_ratio = 0.6000000000000001
l1_ratio = 0.8
l1_ratio = 1.0