|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.NO | HYPER  PARAMETER | LINEAR  (r\_score) | POLY  (r\_score) | SIGMOID  (r\_score) | RBF (NON-LINEAR)  (r\_score) |
| 1 | C=10 | 0.4624 | 0.0387 | 0.0393 | -0.0322 |
| 2 | C=100 | 0.6288 | 0.6179 | 0.5276 | 0.3200 |
| 3 | C=500 | 0.7631 | 0.8263 | 0.4446 | 0.6642 |
| 4 | C=1000 | 0.7649 | 0.8566 | 0.2874 | 0.8102 |
| 5 | C=2000 | 0.7440 | 0.8605 | -0.5939 | 0.8547 |
| 6 | C=10000 | 0.7414 | 0.8591 | -34.1515 | 0.8779 |

1. Multiple Linear Regression (R2\_scour)= 0.789

2.SVM(Simple Vector Machine):

The SVM Regerssion use R2value(nonlinear{rbf(non\_linear}and hyper parameter(C=10000)= 0.8779

3.DECISION TREE:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SL.NO | CRITERION | MAX FEATURES | SPLITTER | R VALUE |
| 1 | ***friedman\_mse*** | auto | best | 0.7056 |
| 2 | ***friedman\_mse*** | auto | random | 0.7426 |
| 3 | ***friedman\_mse*** | Log2 | best | 0.7469 |
| 4 | ***friedman\_mse*** | ***sqrt*** | best | 0.6153 |
| 5 | ***friedman\_mse*** | sqrt | random | 0.7186 |
| 6 | ***friedman\_mse*** | Log2 | random | 0.6920 |
| 7 | ***friedman\_mse*** | none | random | 0.6765 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SL.NO | CRITERION | CLASS | SPLITTER | R VALUE |
| 1 | friedman\_mse | MAX depth =none | best | 0.7067 |
| 2 | friedman\_mse | MAX depth =none | random | 0.7068 |
| 3 | friedman\_mse | min\_samples\_split=2 | random | 0.6998 |
| 4 | friedman\_mse | min\_samples\_split=2 | best | 0.6884 |
| 5 | friedman\_mse | *min\_samples\_leaf=1* | best | 0.7058 |
| 6 | friedman\_mse | *min\_samples\_leaf=1* | random | 0.7072 |
| 7 | friedman\_mse | *min\_weight\_fraction\_leaf=0.0* | random | 0.6370 |
| 8 | friedman\_mse | *min\_weight\_fraction\_leaf=0.0* | best | 0.7084 |
| 9 | friedman\_mse | *random\_state=None* | random | 0.6769 |
| 10 | friedman\_mse | *random\_state=None* | best | 0.6922 |
| 11 | friedman\_mse | *max\_leaf\_nodes=None* | best | 0.7072 |
| 12 | friedman\_mse | *max\_leaf\_nodes=None* | random | 0.7092 |
| 13 | friedman\_mse | *min\_impurity\_decrease=0.0* | random | 0.7162 |
| 14 | friedman\_mse | *min\_impurity\_decrease=0.0* | best | 0.7197 |

The Decision tree use R2value (friedman\_mse,log2,best)and hyper parameter=0.7469

4.RandomForest

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SL.NO | CRITERION | CLASS | Parameter/*n\_estimators* | R VALUE |
| 1 | friedman\_mse | MAX depth =none | *n\_estimators=50* | 0.855 |
| 2 | friedman\_mse | MAX depth =none | *n\_estimators=100* | 0.851 |
| 3 | friedman\_mse | min\_samples\_split=2 | *n\_estimators=50* | 0.853 |
| 4 | friedman\_mse | min\_samples\_split=2 | *n\_estimators=100* | 0.854 |
| 5 | friedman\_mse | *min\_samples\_leaf=1* | *n\_estimators=50* | 0.855 |
| 6 | friedman\_mse | *min\_samples\_leaf=1* | *n\_estimators=100* | 0.856 |
| 7 | friedman\_mse | *min\_weight\_fraction\_leaf=0.0* | *n\_estimators=50* | 0.846 |
| 8 | friedman\_mse | *min\_weight\_fraction\_leaf=0.0* | *n\_estimators=100* | 0.853 |
| 9 | friedman\_mse | *random\_state=None* | *n\_estimators=50* | 0.853 |
| 10 | friedman\_mse | *random\_state=None* | *n\_estimators=100* | 0.854 |
| 11 | friedman\_mse | *max\_leaf\_nodes=None* | *n\_estimators=50* | 0.853 |
| 12 | friedman\_mse | *max\_leaf\_nodes=None* | *n\_estimators=100* | 0.848 |
| 13 | friedman\_mse | *min\_impurity\_decrease=0.0* | *n\_estimators=50* | 0.850 |
| 14 | friedman\_mse | *min\_impurity\_decrease=0.0* | *n\_estimators=100* | 0.859 |
| 15 | friedman\_mse | *max\_features=”auto”* | *n\_estimators=50* | 0.857 |
| 16 | friedman\_mse | *max\_features=”auto”* | *n\_estimators=100* | 0.857 |
| 17 | friedman\_mse | *bootstrap=True* | *n\_estimators=50* | 0.848 |
| 18 | friedman\_mse | *bootstrap=True* | *n\_estimators=100* | 0.858 |
| 19 | friedman\_mse | *oob\_score=False* | *n\_estimators=50* | 0.850 |
| 20 | friedman\_mse | *oob\_score=False* | *n\_estimators=100* | 0.853 |
| 21 | friedman\_mse | *n\_jobs=None* | *n\_estimators=50* | 0.849 |
| 22 | friedman\_mse | *n\_jobs=None* | *n\_estimators=100* | 0.852 |
| 23 | friedman\_mse | *verbose=0* | *n\_estimators=50* | 0.849 |
| 24 | friedman\_mse | *verbose=0* | *n\_estimators=100* | 0.855 |
| 25 | friedman\_mse | *warm\_start=False* | *n\_estimators=50* | 0.850 |
| 26 | friedman\_mse | *warm\_start=False* | *n\_estimators=100* | 0.853 |

The RandomForest use R2value (friedman\_mse, max\_depth=Non

, *n\_estimators=50*); hyper parameter=0.855