THE BEST R\_SCORE VALUE

**SIMPLE LINEAR REGRESSOR** =0.7894

**MULTI LINEAR REGRESSOR** = 0.78651

**DECISION TREE REGRESSOR**= 0.6792

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.NO** | **CRITERION** | **SPLITTER** | **MAX\_FEATURES** | **R\_VALUE** |
| 1 | friedman\_mse | random | auto | 0.713 |
| 2 | friedman\_mse | random | sqrt | 0.706 |
| 3 | friedman\_mse | random | log2 | 0.675 |
| 4 | friedman\_mse | best | auto | 0.699 |
| 5 | friedman\_mse | best | sqrt | 0.717 |
| 6 | friedman\_mse | best | log2 | 0.758 |
| 7 | absolute\_error | best | Auto | 0.681 |
| 8 | absolute\_error | best | sqrt | 0.782 |
| 9 | absolute\_error | best | log2 | 0.758 |
| 10 | absolute\_error | random | auto | 0.740 |
| 11 | absolute\_error | random | sqrt | 0.749 |
| 12 | absolute\_error | random | log2 | 0.672 |
| 13 | poisson | random | auto | 0.709 |
| 14 | poisson | random | sqrt | 0.668 |
| 15 | poisson | random | log2 | 0.591 |
| 16 | poisson | best | auto | 0.702 |
| 17 | poisson | best | sqrt | 0.666 |
| 18 | poisson | best | log2 | 0.748 |

THE BEST DECISION TREE R SCORE VALUE = 0.782

**SUPPORT VECTOR MACHIN r\_sore**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **PARAMETER** | **LINEAR** | **RBF** | **POLY** | **SIGMOID** |
| 1 | C=0.1 | -0.155 | -0.098 | -0.097 | -0.0987 |
| 2 | C=1 | -0.148 | -0.098 | -0.079 | -0.0987 |
| 3 | C=10 | -0.040 | -0.096 | -0.120 | -0.099 |
| 4 | C=20 | 0.0718 | -0.095 | -0.126 | -0.100 |
| 5 | C=100 | 0.521 | -0.088 | -0.131 | -0.124 |
| 6 | C=500 | 0.613 | -0.076 | -0.116 | -0.419 |
| 7 | C=1000 | 0.618 | -0.067 | -0.092 | -1.521 |
| 8 | C=2000 | 0.625 | -0.028 | -0.042 | -5.092 |
| 9 | C=3000 | 0.666 | 0.012 | 0.0062 | -10.94 |
| 10 | C=4000 | 0.680 | 0.053 | 0.0534 | -18.92 |
| 11 | C=5000 | 0.706 | 0.0920 | 0.0995 | -28.80 |

Random forest

R\_score= 0.857

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.no** | **criterion** | **max\_features** | **n\_estimators** | **R\_value** |
| 1 | friedman\_mse | Auto | 10 | 0.851 |
| 2 | friedman\_mse | Auto | 100 | 0.859 |
| 3 | friedman\_mse | Sqrt | 10 | 0.865 |
| 4 | friedman\_mse | Sqrt | 100 | 0.869 |
| 5 | friedman\_mse | Log2 | 10 | 0.858 |
| 6 | friedman\_mse | Log2 | 100 | 0.870 |
| 7 | poisson | Auto | 10 | 0.838 |
| 8 | Poisson | Auto | 100 | 0.860 |
| 9 | Poisson | Sqrt | 10 | 0.854 |
| 10 | poisson | Sqrt | 100 | 0.872 |
| 11 | Poisson | Log2 | 10 | 0.842 |
| 12 | poisson | Log2 | 100 | 0.870 |

The best model is random forest