**Hypertuning parameter Exercise**

1. Multiple Linear Regression: The best model is 0.93
2. SVM

The best model is created for C3000 and Linear parameter(0.89)

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| S.No | Hyper tuning parameter | Linear | RBF | Poly | Sigmoid |
| 1 | c10 | -0.039 | -0.056 | -0.053 | -0.054 |
| 2 | c100 | 0.106 | -0.05 | -0.091 | -0.03 |
| 3 | c1000 | 0.78 | 0.006 | 0.266 | 0.185 |
| 4 | c2000 | 0.876 | 0.067 | 0.481 | 0.397 |
| 5 | c3000 | 0.895 | 0.123 | 0.637 | 0.591 |

1. Decision Tree

The best model is 0.94

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| --- | --- | --- | --- | --- |
| S.No | Criterion | MAX Features | Splitter | R Value |
| 1 | Squared\_error | None | best | 0.91 |
| 2 | Squared\_error | None | random | 0.87 |
| 3 | Squared\_error | sqrt | best | 0.68 |
| 4 | Squared\_error | sqrt | random | 0.29 |
| 5 | Squared\_error | Log2 | best | 0.52 |
| 6 | Squared\_error | Log2 | random | -0.21 |
| 7 | poisson | None | best | 0.91 |
| 8 | poisson | None | random | 0.89 |
| 9 | poisson | sqrt | best | 0.45 |
| 10 | poisson | sqrt | random | 0.62 |
| 11 | poisson | Log2 | best | 0.73 |
| 12 | poisson | Log2 | random | 0.59 |
| 13 | Friedman\_mse | None | best | 0.94 |
| 14 | Friedman\_mse | None | random | 0.79 |
| 15 | Friedman\_mse | sqrt | best | 0.53 |
| 16 | Friedman\_mse | sqrt | random | 0.38 |
| 17 | Friedman\_mse | Log2 | best | 0.49 |
| 18 | Friedman\_mse | Log2 | random | 0.35 |