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| To Find Best r2 value in Machine Linear Regression |

1.Multiple Linear Regression:

r2 value is 0.9358680970046243

2.Support Vector Machine:

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| --- | --- | --- | --- | --- | --- |
| S.No | Hyper parameter | Linear  r2 value | Poly  r2 value | rbf  r2 value | Sigmoid  r2 value |
| 1 | C=10 | -0.039 | -0.053 | -0.056 | -0.054 |
| 2 | C=100 | 0.106 | -0.019 | -0.050 | -0.030 |
| 3 | C=500 | 0.592 | 0.114 | -0.024 | 0.070 |
| 4 | C=1000 | 0.780 | 0.266 | 0.006 | 0.185 |
| 5 | C=2000 | 0.876 | 0.481 | 0.067 | 0.397 |
| 6 | C=3000 | 0.895 | 0.637 | 0.123 | 0.591 |

SVM Regression r2 value is 0.895 using Hyper parameter is [C=3000, kernel = ”Linear” ]

3.Decision Tree:

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| S.No | Criterion | Splitter | r2 value |
| 1 | Squared\_error | best | 0.915 |
| 2 | Squared\_error | random | 0.931 |
| 3 | Friedman\_mse | best | 0.929 |
| 4 | Friedman\_mse | random | 0.632 |
| 5 | Absolute\_error | best | 0.935 |
| 6 | Absolute\_error | random | 0.904 |
| 7 | Poisson | best | 0.912 |
| 8 | Poisson | random | 0.590 |

Decision Tree Regression r2 value is 0.935 using (Criterion = ”Absolute error”, Splitter = “best)