**Below Machine Learning regression method show all model R2 value**

1. **Multiple Linear Regression (R2 Value)** = 0.9358680970046243
2. **Support vector Machine:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **Hyper Parameter** | **Linear**  **(r\_score)** | **RBF (Non linear)**  **(r\_score)** | **Poly**  **(r\_score)** | **Sigmoid**  **(r\_score)** |
| 1. | C=10 | -0.0396 | -0.0568 | -0.0536 | -0.0547 |
| 2. | C=100 | 0.1064 | -0.0507 | -0.0198 | -0.0304 |
| 3. | C=500 | 0.5928 | -0.0243 | 0.1146 | 0.0705 |
| 4. | C=1000 | 0.7802 | 0.0067 | 0.2661 | 0.1850 |
| 5. | C=2000 | 0.8767 | 0.0675 | 0.4810 | 0.3970 |
| 6. | C=3000 | 0.8956 | 0.1232 | 0.63700 | 0.5913 |

In **SVM** Regression use R2 value (linear and hyper Parmeter (C=3000) )= 0.8956

1. **Decision Tree:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.NO** | **Criterion** | **Splitter** | **Max\_features** | **R\_value** |
| 1. | squared\_error | best | sqrt | 0.5523 |
| 2. | squared\_error | best | Log2 | 0.4606 |
| 3. | squared\_error | best | none | 0.9191 |
| 4. | squared\_error | random | None | 0.7955 |
| 5. | squared\_error | random | Sqrt | 0.3868 |
| 6. | squared\_error | random | Log2 | 0.6571 |
| 7. | friedman\_mse | best | none | 0.9276 |
| 8. | friedman\_mse | best | Sqrt | 0.7576 |
| 9. | friedman\_mse | best | Log2 | 0.8128 |
| 10. | friedman\_mse | Random | None | 0.9066 |
| 11. | friedman\_mse | random | Sqrt | 0.6871 |
| 12. | friedman\_mse | Random | Log2 | 0.6394 |
| 13. | absolute\_error | Best | Sqrt | 0.8431 |
| 14. | absolute\_error | Best | Log2 | 0.6249 |
| 15. | absolute\_error | Best | None | 0.9446 |
| 16. | absolute\_error | Random | Sqrt | 0.7350 |
| 17. | absolute\_error | Random | Log2 | 0.8490 |
| 18. | absolute\_error | random | None | 0.9585 |
| 19. | Poisson | Best | None | 0.9332 |
| 20. | Poisson | Best | Log2 | 0.8497 |
| 21. | Poisson | best | Sqrt | 0.7326 |
| 22. | Poisson | Random | Log2 | 0.6093 |
| 23. | Poisson | Random | Sqrt | 0.5228 |
| 24. | Poisson | Random | none | 0.9117 |

In **Decision Tree** Regression use R2 value using parameter (absolute\_error, random) = 0.9585