**Machine Learning Regression method using r2 value are as follows**

1. **Support Vector Machine (SVM)**

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| **S.No** | **Hyper Parameter** | **Linear**  **(r2 Value)** | **Non Linear (rbf)**  **(r2 Value)** | **Poly**  **(r2 Value)** | **Sigmoid**  **(r2 Value)** |
| 1 | C=10 | -0.039644 | -0.0568075 | -0.053667 | -0.054719 |
| 2 | C=100 | 0.1064681 | -0.0507260 | -0.019802 | -0.030453 |
| 3 | C=500 | 0.5928977 | -0.0243233 | 0.114684 | 0.070572 |
| 4 | C=1000 | 0.7802839 | 0.0067683 | 0.266163 | 0.185068 |
| 5 | C=2000 | 0.8767721 | 0.0675155 | 0.481002 | 0.397065 |
| 6 | C=3000 | 0.8956744 | 0.1232275 | 0.637006 | 0.591363 |

The SVM regression using r2 for the parameters Linear r2 value = 0.89744 and the hyper parameter C=3000

1. **Decision Tree**

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| --- | --- | --- | --- | --- |
| **S.No** | **Criterion** | **Max Features** | **splitter** | **R2 Value** |
| 1 | *squared\_error (auto)* | sqrt | best (Auto) | 0.6275 |
| 2 | *friedman\_mse* | sqrt | best (Auto) | 0.6501 |
| 3 | *absolute\_error* | sqrt | best (Auto) | 0.1038 |
| 4 | *poisson* | sqrt | best (Auto) | 0.7233 |
| 5 | *squared\_error (auto)* | sqrt | random | 0.4023 |
| 6 | *friedman\_mse* | sqrt | random | 0.8094 |
| 7 | *absolute\_error* | sqrt | random | -0.2763 |
| 8 | *poisson* | sqrt | random | 0.2449 |
| 9 | *squared\_error (auto)* | *log2* | random | -0.0437 |
| 10 | *friedman\_mse* | *log2* | random | -1.8594 |
| 11 | *absolute\_error* | *log2* | random | 0.5059 |
| 12 | *poisson* | *log2* | random | 0.8238 |
| 13 | *squared\_error (auto)* | *log2* | best (Auto) | 0.4567 |
| 14 | *friedman\_mse* | *log2* | best (Auto) | 0.2582 |
| 15 | *absolute\_error* | *log2* | best (Auto) | 0.3009 |
| 16 | *poisson* | *log2* | best (Auto) | 0.1063 |
| 17 | *squared\_error (auto)* | *None(Auto)* | random | 0.7162 |
| 18 | *friedman\_mse* | *None(Auto)* | random | 0.8681 |
| 19 | *absolute\_error* | *None(Auto)* | random | 0.8959 |
| 20 | *poisson* | *None(Auto)* | random | 0.9486 |
| 21 | *squared\_error (auto)* | *None(Auto)* | best (Auto) | 0.9073 |
| 22 | *friedman\_mse* | *None(Auto)* | best (Auto) | 0.9203 |
| 23 | *absolute\_error* | *None(Auto)* | best (Auto) | 0.9356 |
| 24 | *poisson* | *None(Auto)* | best (Auto) | 0.9264 |

The Decision Tree regression using r2 for the parameter **Criterion***is* ***poisson*** , r2 value = 0.9486 and the splitter is “random”