To find following the machine learning regression method using in r2 value

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | Criterion | Max Features | Splitter | R2\_Value |
| 1 | friedman\_mse | Sqrt | best | 0.6735 |
| 2 | friedman\_mse | sqrt | random | 0.4633 |
| 3 | friedman\_mse | Log2 | best | 0.4801 |
| 4 | friedman\_mse | Log2 | random | 0.8886 |
| 5 | friedman\_mse | none | best | 0.9076 |
| 6 | friedman\_mse | none | random | 0.9467 |
| 7 | squared\_error | sqrt | best | 0.9385 |
| 8 | squared\_error | sqrt | random | 0.4933 |
| 9 | squared\_error | Log2 | best | 0.7767 |
| 10 | squared\_error | Log2 | random | 0.4268 |
| 11 | squared\_error | none | best | 0.9072 |
| 12 | squared\_error | none | random | 0.8343 |
| 13 | absolute\_error | sqrt | best | 0.5876 |
| 14 | absolute\_error | sqrt | random | 0.3069 |
| 15 | absolute\_error | Log2 | best | 0.5727 |
| 16 | absolute\_error | Log2 | random | 0.3937 |
| 17 | absolute\_error | none | best | 0.9686 |
| 18 | absolute\_error | none | random | 0.8119 |
| 19 | Poisson | sqrt | best | 0.5582 |
| 20 | Poisson | sqrt | random | 0.6593 |
| 21 | Poisson | Log2 | best | 0.2618 |
| 22 | Poisson | Log2 | random | 0.5964 |
| 23 | Poisson | none | best | 0.9268 |
| 24 | Poisson | none | random | 0.9248 |

**1.DecisionTreeRegressor :**

The **DecisionTreeRegressor R2\_Value** by using following hyper parameters

**Criterion** : absolute\_error , **Max Features** : None ,**Splitter** : best ,**R2\_Value : 0.9689**

**2.Support Vector Regression:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.no | Hyper  parameters | Linear  (r2\_value) | RBF - non linear  (r2\_value) | Poly  (r2\_value) | Sigmoid  (r2\_value) |
| 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 | 0.6370 | 0.5913 |

The **Support Vector Regression R2\_Value** by using following hyper parameters

**C=3000 , kernel = linear ,r2\_value=0.8956**