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**Regression – Machine Learning**

**R2\_Score values for both “Decision Tree” & “SVM-Support Vector Machine”**

**Kindly find below the R2\_Score values for SVM – Support Vector Machine by using different sets of parameters:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.No. | kernel | gamma | C=10 | C=100 | C=1000 | **r\_score** |
| 1 | linear | scale | Yes | No | No | -0.03964 |
| 2 | linear | scale | No | Yes | No | 0.10646 |
| 3 | linear | scale | No | No | Yes | 0.78028 |
| 4 | linear | auto | Yes | No | No | -0.03964 |
| 5 | linear | auto | No | Yes | No | 0.10646 |
| 6 | linear | auto | No | No | Yes | 0.78028 |
| 7 | poly | scale | Yes | No | No | -0.05366 |
| 8 | poly | scale | No | Yes | No | -0.0198 |
| 9 | poly | scale | No | No | Yes | 0.26616 |
| 10 | poly | auto | Yes | No | No | -0.05366 |
| 11 | poly | auto | No | Yes | No | -0.0198 |
| 12 | poly | auto | No | No | Yes | 0.26616 |
| 13 | rbf | scale | Yes | No | No | -0.0568 |
| 14 | rbf | scale | No | Yes | No | -0.05072 |
| 15 | rbf | scale | No | No | Yes | 0.00676 |
| 16 | rbf | auto | Yes | No | No | -0.0568 |
| 17 | rbf | auto | No | Yes | No | -0.05072 |
| 18 | rbf | auto | No | No | Yes | 0.00676 |
| 19 | sigmoid | scale | Yes | No | No | -0.05471 |
| 20 | sigmoid | scale | No | Yes | No | -0.03045 |
| 21 | sigmoid | scale | No | No | Yes | 0.18506 |
| 22 | sigmoid | auto | Yes | No | No | -0.05471 |
| 23 | sigmoid | auto | No | Yes | No | -0.03045 |
| 24 | sigmoid | auto | No | No | Yes | 0.18506 |

**In the above mentioned R2\_Score output the**

**regressor=SVR(kernel=’linear’, gamma=’scale’, C=1000) = R2\_Score = 0.78028**

**&**

**regressor=SVR(kernel=’linear’, gamma='auto', C=1000) = R2\_Score = 0.78028  
  
Both the different parameters came up with the same result with the best R2\_Score value.**

**Kindly find below the R2\_Score values for Decision Tree Regressor by using different sets of parameters:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **criterion** | **splitter** | **r\_score** |
| 1 | squared\_error | best | 0.91194 |
| 2 | squared\_error | random | 0.86405 |
| 3 | friedman\_mse | best | 0.89311 |
| 4 | friedman\_mse | random | 0.89198 |
| 5 | absolute\_error | best | 0.93596 |
| 6 | absolute\_error | random | 0.90213 |
| 7 | poisson | best | 0.93215 |
| 8 | poisson | random | 0.58105 |

**In the above mentioned R2\_Score output the**

**regressor=DecisionTreeRegressor(criterion='absolute\_error ', splitter='best') = R2\_Score = 0.93596**

**The above-mentioned parameter came with the best R2\_Score value.**