Decision Tree:

50\_Startups.csv is input for this program.

To found the best model in decision tree algorithm by passing different parameter.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Criterion** | **Splitter** | **R2\_score** |
| 1 | squared\_error | best | 0.9339070480808462 |
| 2 | squared\_error | random | 0.7555012658700746 |
| 3 | friedman\_mse | best | 0.9266284446093457 |
| 4 | friedman\_mse | random | 0.9262249789432245 |
| 5 | absolute\_error | best | 0.9497896117898206 |
| 6 | absolute\_error | random | 0.8752296949422379 |
| 7 | poisson | best | 0.946802708372881 |
| 8 | poisson | random | 0.9339903758036542 |

Highlighted model is best model based on r2\_score value.

SVM:

To found the best model in SVM algorithm by passing different parameter.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **kernel** | **C** | **R2\_score** |
| 1 | rbf | 0.001 | -0.05748622247605617 |
| 2 | rbf | 0.01 | -0.05748561138150854 |
| 3 | rbf | 10 | -0.05680759285862336 |
| 4 | rbf | 1000 | 0.0067683444800727965 |
| 5 | rbf | 10000 | 0.37189506360095503 |
| 6 | linear | 0.001 | -0.05748449448056192 |
| 7 | linear | 0.01 | -0.05746833153215891 |
| 8 | linear | 10 | -0.03964494678192798 |
| 9 | linear | 1000 | 0.7802839882154126 |
| 10 | linear | 10000 | 0.9239983428118113 |
| 11 | poly | 0.001 | -0.05748590790400998 |
| 12 | poly | 0.01 | -0.05748246566584592 |
| 13 | poly | 10 | -0.05366720512712608 |
| 14 | poly | 1000 | 0.26616370931646915 |
| 15 | poly | 10000 | 0.8129628367020232 |
| 16 | sigmoid | 0.001 | -0.05748601341465309 |
| 17 | sigmoid | 0.01 | -0.057483520769823215 |
| 18 | sigmoid | 10 | -0.05471958332940319 |
| 19 | sigmoid | 1000 | 0.18506861974160804 |
| 20 | sigmoid | 10000 | 0.8535311196368867 |