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

1. Support vector machine:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No** | **Penalty** | **Linear** | **Poly** | **rbf** | **sigmoid** |
| 1 | C10 | -0.039644947 | -0.053667205 | -0.056807593 | -0.054719583 |
| 2 | C100 | 0.106468196 | -0.019802139 | -0.050726023 | -0.030453515 |
| 3 | C1000 | 0.780283988 | 0.266163709 | 0.006768344 | 0.18506862 |
| 4 | C2000 | 0.876772169 | 0.481002816 | 0.067515543 | 0.397065287 |
| 5 | C3000 | 0.895674469 | 0.637006422 | 0.123227566 | 0.591363021 |

SVM regression R2 value is 0.895674469.

1. Decision Tree:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Criterion** | **Splitter** | **Max\_features** | **r\_score** |
| 1 | squared\_error | random | sqrt | 0.900324266 |
| 2 | squared\_error | random | log2 | 0.421281544 |
| 3 | squared\_error | best | sqrt | -0.13918618 |
| 4 | squared\_error | best | log2 | 0.527124582 |
| 5 | friedman\_mse | random | sqrt | 0.147035079 |
| 6 | friedman\_mse | random | log2 | 0.80837032 |
| 7 | friedman\_mse | best | sqrt | 0.627076686 |
| 8 | friedman\_mse | best | log2 | 0.505641132 |
| 9 | absolute\_error | random | sqrt | 0.419843868 |
| 10 | absolute\_error | random | log2 | 0.284071146 |
| 11 | absolute\_error | best | sqrt | 0.731422798 |
| 12 | absolute\_error | best | log2 | 0.725911418 |
| 13 | poisson | random | sqrt | -1.095178874 |
| 14 | poisson | random | log2 | 0.911413616 |
| 15 | poisson | best | sqrt | -0.769040035 |
| 16 | poisson | best | log2 | 0.555370987 |

Decision tree R2 value is 0.911413616.