1. Multiple Linear Regression (R2 Value) -> 0.9358680970046241
2. Simple Linear Regression (R2 Value) -> 0.9740993407213511
3. Support Vector Machine (R2 Value)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S. No** | **C Value** | ***linear*** | ***poly*** | ***Rbf*** | ***sigmoid*** | ***precomputed*** |
| 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 | - |

Note: kernel = precomputed is not fit since the table data size is 35\*5 model.

The SVM Regression use R2 Value **with linear and C=3000 = 0.8956**

1. Decision Tree (R2 Value)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No** | **criterion** | **max\_features** | **splitter** | **R2****Value** |
| **1** | mae | **-** | Best | 0.9360 |
| **2** | mae | **-** | random | 0.9325 |
| **3** | mae | sqrt | best | 0.9161 |
| **4** | mae | sqrt | random | 0.5189 |
| **5** | mae | log2 | best | 0.7759 |
| **6** | mae | log2 | random | 0.6257 |
| **7** | poisson | **-** | best | 0.6665 |
| **8** | poisson | **-** | random | 0.3710 |
| **9** | poisson | sqrt | best | 0.5116 |
| **10** | poisson | sqrt | random | 0.6217 |
| **11** | poisson | log2 | best | 0.4934 |
| **12** | poisson | log2 | random | -0.1577 |
| **13** | friedman\_mse | **-** | best | 0.9330 |
| **14** | friedman\_mse | **-** | random | 0.6384 |
| **15** | friedman\_mse | sqrt | best | 0.6124 |
| **16** | friedman\_mse | sqrt | random | 0.6011 |
| **17** | friedman\_mse | log2 | best | 0.8397 |
| **18** | friedman\_mse | log2 | random | 0.1210 |

The Decision Tree R2 Value **for criterion – mae; max\_features – none; splitter – best = 0.9360**