**To find following the Machine Learning Regression method using in r2 value**

**1.Multiple Linear Regression**

R2 value = 0.935868097

**2.Support Vector Machine**

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| **SL. No** | **Hyper Parameter** | **Linear** | **RBF (non-linear)-r value** | **POLY (r value)** | **SIGMOID (r value)** |
| 1 | C=.1 | -0.057306 | -0.057479 | -0.057448 | -0.0574585 |
| 2 | C=10 | -0.039644 | -0.056807 | -0.0536672 | -0.0547195 |
| 3 | C=100 | 0.10646819 | -0.05072 | -0.0198021 | -0.0304535 |
| 4 | C=500 | 0.5928977 | -0.024323 | 0.1146848 | 0.0705721 |
| 5 | C=1000 | 0.7802839 | 0.006768 | 0.2661637 | 0.185068 |
| 6 | C=2000 | 0.8767721 | 0.0675155 | 0.4810028 | 0.397065 |
| 7 | C=3000 | 0.895674 | 0.1232275 | 0.637006 | 0.591363 |
| 8 | C=5000 | 0.9003762 | 0.212428 | 0.79365554 | 0.730656 |

The SVM use R2 value (Linear) and hyper parameter (C5000)) = 0. 9003762

**3.Decision Tree**

|  |  |  |  |  |  |
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| **SL. NO** |  | **CRITERION** | **MAX FEATURES** | **SPLITTER** | **R Value** |
| 1 |  | *squared\_error* | None | auto | 0.924210237 |
| 2 |  | *squared\_error* | None | best | 0.8980083 |
| 3 |  | *squared\_error* | None | random | 0.9295193 |
| 4 |  | *squared\_error* | sqrt | auto | -0.0111012 |
| 5 |  | *squared\_error* | sqrt | best | 0.77265172 |
| 6 |  | *squared\_error* | sqrt | random | -0.4907530 |
| 7 |  | *squared\_error* | Log2 | auto | 0.409848 |
| 8 |  | *squared\_error* | Log2 | best | 0.841686 |
| 9 |  | *squared\_error* | Log2 | random | 0.594036 |
| 10 |  | *friedman\_mse* | None | auto | 0.922863755 |
| 11 |  | *friedman\_mse* | None | best | 0.9422698 |
| 12 |  | *friedman\_mse* | None | random | 0.9025651 |
| 13 |  | *friedman\_mse* | sqrt | auto | 0.730420 |
| 14 |  | *friedman\_mse* | sqrt | best | 0.551438223 |
| 15 |  | *friedman\_mse* | sqrt | random | 0.575289829 |
| 13 |  | *friedman\_mse* | Log2 | auto | 0.44118166 |
| 14 |  | *friedman\_mse* | Log2 | best | 0.75228770 |
| 15 |  | *friedman\_mse* | Log2 | random | -0.2203162 |
| 16 |  | *absolute\_error* | None | auto | 0.9218634 |
| 17 |  | *absolute\_error* | None | best | 0.96780 |
| 18 |  | *absolute\_error* | None | random | 0.9196897 |
| 19 |  | *absolute\_error* | sqrt | auto | 0.7338707 |
| 20 |  | *absolute\_error* | sqrt | best | 0.63656 |
| 21 |  | *absolute\_error* | sqrt | random | -0.376543 |
| 22 |  | *absolute\_error* | Log2 | auto | 0.903078 |
| 23 |  | *absolute\_error* | Log2 | best | 0.668032 |
| 24 |  | *absolute\_error* | Log2 | random | -0.623756 |
| 25 |  | *poisson* | None | auto | 0.937988 |
| 26 |  | *poisson* | None | best | 0.916947 |
| 27 |  | *poisson* | None | random | 0.8741552 |
| 28 |  | *poisson* | sqrt | auto | 0.4867574 |
| 29 |  | *poisson* | sqrt | best | 0.7618281 |
| 30 |  | *poisson* | sqrt | random | 0.6464782 |
| 31 |  | *poisson* | Log2 | auto | 0.6809524 |
| 32 |  | *poisson* | Log2 | Best | 0.658725 |
| 3 |  | *poisson* | Log2 | Random | 0.143063 |

The Decision Tree Regression use R2 value(*absolute\_error*, best)= 0.96780