Machine Learning Regression R² Value Report

# 1. Multiple Linear Regression

R² value = 0.7865

# 2. Support Vector Machine

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| S.No | Hyper Parameter | Linear (R²) | RBF (Non-Linear R²) | Poly (R²) | Sigmoid (R²) |
| 1 | C10 | 0.4320 | 0.0480 | 0.027 | 0.0193 |
| 2 | C100 | 0.6162 | 0.2913 | 0.6040 | 0.5056 |
| 3 | C500 | 0.6803 | 0.6397 | 0.815 | 0.4638 |
| 4 | C1000 | 0.7594 | 0.7915 | 0.8519 | 0.1842 |
| 5 | C2000 | 0.7613 | 0.8460 | 0.8573 | -0.5786 |
| 6 | C3000 | 0.7612 | 0.8609 | 0.8577 | -2.0119 |

Best R²: 0.8609 using RBF kernel with C3000

# 3. Decision Tree

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Criterion** | **Split** | **R² Score** |
| 1 | Friedman mse | Best | 0.9 |
| 2 | Squared error | Best | 0.93 |
| 3 | Absolute error | Best | 0.95 |
| 4 | Poisson | Best | 0.92 |
| 5 | Friedman mse | Random | 0.92 |
| 6 | Squared error | Random | 0.86 |
| 7 | Absolute error | Random | 0.86 |
| 8 | Poisson | Random | 0.95 |

Best R²: 0.7537 using MAE, auto, random