Decision Tree:

| **criterion** | **splitter** | **max\_depth** | **R2\_Score** |
| --- | --- | --- | --- |
| squared\_error | best | 1 | 0.336061847 |
| squared\_error | best | 10 | 0.8826434676 |
| squared\_error | best | 100 | 0.8761474948 |
| squared\_error | *random* | 1 | -0.006407813646 |
| squared\_error | *random* | 10 | 0.9039882554 |
| squared\_error | *random* | 100 | 0.8492743524 |
| *friedman\_mse* | best | 1 | 0.336061847 |
| *friedman\_mse* | best | 10 | 0.893810729 |
| *friedman\_mse* | best | 100 | 0.931354341 |
| *friedman\_mse* | *random* | 1 | 0.02350958124 |
| *friedman\_mse* | *random* | 10 | 0.3418796631 |
| *friedman\_mse* | *random* | 100 | 0.7521537031 |
| *absolute\_error* | best | 1 | 0.2905812911 |
| *absolute\_error* | best | 10 | 0.9205313514 |
| *absolute\_error* | best | 100 | 0.9106520218 |
| *absolute\_error* | *random* | 1 | -0.02213727082 |
| *absolute\_error* | *random* | 10 | 0.8797530829 |
| *absolute\_error* | *random* | 100 | 0.4315520543 |
| *poisson* | best | 1 | 0.336061847 |
| *poisson* | best | 10 | 0.9187782091 |
| *poisson* | best | 100 | 0.89694871 |
| *poisson* | *random* | 1 | 0.0202045073 |
| *poisson* | *random* | 10 | 0.9280698716 |
| *poisson* | *random* | 100 | 0.8839643452 |

The Decision Tree use R Square (*poisson,random,10*)=**0.9280698716(Best model)**

**MultiLinear Regression:**  The R Square value is **0.9358680970046241**

**SVM:**

| Hyper parameter | RBF | POLY | SIGMOID |
| --- | --- | --- | --- |
| C10 | -0.125286649 | -0.1215853156 | -0.1228239989 |
| C100 | -0.1208292804 | -0.08424937548 | -0.09643982603 |
| C1000 | -0.08004178387 | 0.2112919127 | 0.1376581978 |
| C2000 | -0.03059804514 | 0.4920817591 | 0.3607138793 |
| C3000 | 0.01926701482 | 0.6603171302 | 0.4986864115 |

The SVM regression use Rsquare value (poly) and hyper parameter (C3000)=0.6603171302

SVM Regression is not the best model that can be used for this Model