# ***Comparisons Between different Algorithm and their Best Model %***

1. **Multiple Linear Regression**

R2Score = **0.935868097**

1. **Support Vector Machine**

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| --- | --- | --- | --- |
| **Support Vector Machine** | | | |
| **Kernel** | **degree** | **r2 Score** | **Comments** |
| poly | 1 | -0.0572305 |  |
| poly | 0 | -0.0508901 |
| linear |  | 0.8950779 |
| rbf |  | -0.0573173 |
| sigmoid |  | -0.057499197 |
| precomputed |  |  | Cannot be Calculated asSVR requires a square kernel matrix as input, but your X\_train is a 35x5 matrix (35 samples with 5 features). |

1. **Decision Tree**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Decision Tree** | | | | |
| **criterion** | **splitter** | **max\_depth** | **r2 Score** | **Comments** |
| squared\_error | best |  | 0.925401938 |  |
| squared\_error | random |  | 0.892244364 |  |
| friedman\_mse | best |  | 0.904269884 |  |
| friedman\_mse | random |  | 0.422935473 |  |
| absolute\_error | best |  | 0.949840653 | Best Model in Decision Tree |
| absolute\_error | random | *5* | 0.7408381/0.7569438 | Using Maxdepth=5 , r2 score improved by 1% |
| poisson | best | 5 | 0.9318880/0.9111390 | Using Maxdepth=5 , r2 score decreased by 2% |
| poisson | random |  | 0.672222406 |  |