To find the following the machine learning regression using in r2 value

1.Multiple Linear Regression : 0.8752

2.Support Vector Machine :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No** | **HyperParameter** | **Linear (R2 Value)** | **RBF(Non Linear) (R2 Value)** | **Poly (R2 Value)** | **Sigmoid (R2 Value)** |
| 1 | c= 1 | 0.8753 | -0.1254 | -0.1154 | -0.1258 |
| 2 | c= 10 | 0.2398 | -0.1220 | -0.0595 | -0.1260 |
| 3 | c=1000 | Cannot obtain | 0.0409 | 0.6671 | -0.1571 |

3.Decision Tree

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Criterion** | **Splitter** | **R2 Value** |
| 1 | ***squared\_error*** | random | 0.8493 |
| 2 | ***squared\_error*** | best | 0.8995 |
| 3 | ***friedman\_mse*** | random | 0.9529 |
| 4 | ***friedman\_mse*** | best | 0.8663 |
| 5 | ***absolute\_error*** | random | 0.7637 |
| 6 | ***absolute\_error*** | best | 0.8974 |
| 7 | ***poisson*** | random | 0.6908 |
| 8 | ***poisson*** | best | 0.9253 |

**Best model analyed for 50\_startups problem is Decission tree with**

|  |  |  |
| --- | --- | --- |
| ***friedman\_mse*** | **random** | **0.9529** |