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

**Customer Requirement is Profit Prediction.**

**1.MULTIPLE LINEAR REGRESSION**

**R²value=** 0.9358680892466282

**2.SUPPORT VECTOR MACHINE:**

**i. General Process:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.NO** | **LINEAR (R\_VALUE)** | **RBF(NON LINEAR) (R\_VALUE)** | **POLY**  **(R\_VALUE)** | **SIGMOID**  **(R\_VALUE)** |
| **01.** | **0.877438218** | **-0.057323756** | **-0.050896585** | **-0.057505641** |

**ii. C\_Penalty:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **HYPER PARAMETER**  **(C\_VALUE)** | **LINEAR (R\_VALUE)** | **RBF (NON-LINEAR) (R\_VALUE)** | **POLY**  **(R\_VALUE)** | **SIGMOID**  **(R\_VALUE)** |
| **01.** | **0.01** | **0.933051202** | **-0.057491044** | **-0.057426535** | **-0.057492863** |
| **02.** | **0.1** | **0.940879882** | **-0.057475832** | **-0.056830963** | **-0.057494025** |
| **03.** | **1.0** | **0.877438218** | **-0.057323756** | **-0.050896585** | **-0.057505641** |
| **04.** | **10** | **0.538016145** | **-0.055807402** | **0.025319732** | **-0.057621827** |
| **05.** | **100** | **-107.977515970** | **-0.030227627** | **0.465666055** | **-0.058786436** |
| **06.** | **1000** |  | **0.160602990** | **0.640328111** | **-0.070707399** |
| **07.** | **10000** |  | **0.674318110** | **0.814189538** | **-0.217404365** |

**iii. Standardisation:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.NO** | **LINEAR (R\_VALUE)** | **RBF (NON-LINEAR) (R\_VALUE)** | **POLY**  **(R\_VALUE)** | **SIGMOID**  **(R\_VALUE)** |
| **01.** | **-0.055698007** | **-0.057424838** | **-0.057110316** | **-0.057215801** |

**iv. Standardisation with C\_Penalty:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **HYPER PARAMETER (C\_VALUE)** | **LINEAR (R\_VALUE)** | **RBF (NON-LINEAR) (R\_VALUE)** | **POLY**  **(R\_VALUE)** | **SIGMOID**  **(R\_VALUE)** |
| **01.** | **0.01** | **-0.057474775** | **-0.057492055** | **-0.057488909** | **-0.057489965** |
| **02.** | **0.1** | **-0.057313156** | **-0.057485944** | **-0.057454487** | **-0.057465038** |
| **03.** | **1.0** | **-0.055698007** | **-0.057424838** | **-0.057110316** | **-0.057215801** |
| **04.** | **10** | **-0.039651324** | **-0.056814037** | **-0.053673622** | **-0.054726019** |
| **05.** | **100** | **0.106458267** | **-0.050732472** | **-0.019808324** | **-0.030465264** |
| **06.** | **1000** | **0.780290359** | **0.006761918** | **0.266159225** | **0.1850734777** |
| **07.** | **10000** | **0.924002234** | **0.371889445** | **0.812963534** | **0.853532849** |

**Finally SVM in linear method is correct this Dataset.**

**SVR(kernel=** **"linear",C=0.1) = 0.940879882**