**PROJECT : PROFIT IDENTIFICATION**

**3 stage selection**

1. Stage1 - Machine Learning Domain
2. Stage2 - Supervised Learning
3. Stage3 - Regression
4. **Algorithm : MultipLe Linear Regression**

R^2 value : 0.9358

1. **Algorithm : Support Vector Machine**

R^2 value : 0.9301248

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.No | Parameters | | R^2 VALUE | Remarks |
| Kernel | Penalty C |
| 1 | Linear | 10 | -0.03964 |  |
| 2 | 100 | 0.10646 |  |
| 3 | 1000 | 0.78028 |  |
| 4 | 5000 | 0.90037 |  |
| 5 | 10000 | 0.92399 |  |
| 6 | 25000 | 0.93012 |  |
| 7 | 50000 | 0.9301246 |  |
| 8 | 100000 | 0.9301248 |  |
| 9 | Poly | 10 | -0.05366 |  |
| 10 | 100 | -0.01980 |  |
| 11 | 1000 | 0.26616 |  |
| 12 | 5000 | 0.79365 |  |
| 13 | 25000 | 0.63183 |  |
| 14 | rbf | 10 | -0.05680 |  |
| 15 | 100 | -0.05072 |  |
| 16 | 1000 | 0.00676 |  |
| 17 | 5000 | 0.21242 |  |
| 18 | 25000 | 0.56372 |  |
| 19 | 26000 | 0.56738 |  |
| 20 | sigmoid | 10 | -0.05471 |  |
| 21 | 100 | -0.03045 |  |
| 22 | 1000 | 0.18506 |  |
| 23 | 5000 | 0.73065 |  |
| 24 | 10000 | 0.85353 |  |
| 25 | 20000 | 0.90111 |  |
| 26 | 25000 | 0.88146 |  |
| 27 | 26000 | 0.86835 |  |
| 28 | 30000 | 0.81438 |  |
| 29 | 100000 | -0.84337 |  |
| 30 | Precomputed |  |  | Not applicable for this dataset |

1. **Algorithm : Decision Tree**

R^2 value : 0.97204

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No** | **Parameters** | | | **R^2 VALUE** | **Remarks** |
| **Criterion** | **Splitter** | **Max features** |
| 1 | squared\_ error | best | None | 0.90348 |  |
| 2 | sqrt | 0.53804 |  |
| 3 | log2 | 0.45088 |  |
| 4 | random | None | 0.913387 |  |
| 5 | sqrt | -0.17588 |  |
| 6 | log2 | 0.88226 |  |
| 7 | friedman\_mse | best | None | 0.93876 |  |
| 8 | sqrt | 0.76841 |  |
| 9 | log2 | 0.772701 |  |
| 10 | random | None | 0.53204 |  |
| 11 | sqrt | 0.85095 |  |
| 12 | log2 | 0.41113 |  |
| 13 | absolute\_ error | best | None | 0.97204 | Best value |
| 14 | sqrt | 0.71394 |  |
| 15 | log2 | 0.91887 |  |
| 16 | random | None | 0.78195 |  |
| 17 | sqrt | 0.72708 |  |
| 18 | log2 | 0.73241 |  |
| 19 | poisson | best | None | 0.68624 |  |
| 20 | sqrt | 0.72344 |  |
| 21 | log2 | 0.41837 |  |
| 22 | random | None | 0.67066 |  |
| 23 | sqrt | 0.55848 |  |
| 24 | log2 | 0.75563 |  |