Hyper Tuning Paramaters

1.Support Vector Machine

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sl.No | Hyper Parameter  (C) | Linear  (r value) | RBF  (r value) | Poly  (r value) | Sigmoid  (r value) | Precomputed  (r value) |
| 1 | 0.1 | -0.0573 | -0.05748 | -0.05745 | -0.05746 | Can do only for square matrix |
| 2 | 1 | -0.0557 | -0.05742 | -0.05711 | -0.05721 | Can do only for square matrix |
| 3 | 10 | -0.03965 | -0.05681 | -0.05367 | -0.05472 | Can do only for square matrix |
| 4 | 100 | 0.10645 | -0.05073 | -0.01980 | -0.03046 | Can do only for square matrix |
| 5 | 1000 | 0.78029 | 0.00676 | 0.26616 | 0.18507 | Can do only for square matrix |

Best r2 score is 0.7803 in Linear Kernel with c value = 1000

2.Decison Tree

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl.No** | **Criterion** | **Splitter** | **Max Value** | **R Value** |
| **1** | squared\_error | Best | None | 87.632 |
| **2** | squared\_error | Random | None | 74.6717 |
| **3** | squared\_error | Best | sqrt | 79.237 |
| **4** | squared\_error | Random | sqrt | 49.1798 |
| **5** | squared\_error | Best | log2 | 78.0158 |
| **6** | squared\_error | Random | log2 | 42.5381 |
| **7** | friedman\_mse | Best | None | 89.4461 |
| **8** | friedman\_mse | Random | None | 79.5436 |
| **9** | friedman\_mse | Best | sqrt | 81.2331 |
| **10** | friedman\_mse | Random | sqrt | 36.1116 |
| **11** | friedman\_mse | Best | log2 | 73.4343 |
| **12** | friedman\_mse | Random | log2 | 50.8790 |
| **13** | absolute\_error | Best | None | 89.5811 |
| **14** | absolute\_error | Random | None | 70.0499 |
| **15** | absolute\_error | Best | sqrt | 90.58313 |
| **16** | absolute\_error | Random | sqrt | 66.760 |
| **17** | absolute\_error | Best | log2 | 76.84768 |
| **18** | absolute\_error | Random | log2 | -25.1124 |
| **19** | poisson | Best | None | 80.60854 |
| **20** | poisson | Random | None | 75.81244 |
| **21** | poisson | Best | sqrt | 64.1593 |
| **22** | poisson | Random | sqrt | 70.5811 |
| **23** | poisson | Best | log2 | 75.10277 |
| **24** | poisson | Random | log2 | 68.5559 |

Best r2 score is 90.58313 with criterion is absolute\_error and Splitter as Best and Max Value is sqrt