ASSIGNMENT 2:

1. Multiple linear regression r2 value=0.78

ii) Support vector machine[hyper parameters] r2 values are:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S no | Hyper parameters | Linear  R2 value | Rbf  R2 value | Poly  R2 value | Sigmoid  R2 value |
| 1 | C10 | -0.006 | -0.08 | -0.09 | -0.09 |
| 2 | C100 | 0.54 | -0.12 | -0.099 | -0.11 |
| 3 | C500 | 0.57 | -0.11 | -0.067 | -1.10 |
| 4 | C1000 | 0.63 | -0.11 | -0.055 | -1.66 |
| 5 | C2000 | 0.68 | -0.10 | -0.002 | -5.61 |
| 6 | C3000 | 0.75 | -0.09 | 0.098 | -12 |

iii) Decision tree[hyper parameters] r2 values are:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S no | CRITERION | MAX\_FEATURES | SPLITTER | R2 VALUE |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | Squared error | None | Best | 0.69 |
| 2 | Squared error | None | Random | 0.71 |
| 3 | Squared error | Sqrt | Best | 0.71 |
| 4 | Squared error | Sqrt | Random | 0.68 |
| 5 | Squared error | Log2 | Best | 0.64 |
| 6 | Squared error | Log2 | Random | 0.69 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | Absolute error | None | Best | 0.64 |
| 2 | Absolute error | None | Random | 0.73 |
| 3 | Absolute error | Sqrt | Best | 0.70 |
| 4 | Absolute error | Sqrt | Random | 0.73 |
| 5 | Absolute error | Log2 | Best | 0.73 |
| 6 | Absolute error | Log2 | random | 0.67 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | Friedman mse | None | Best | 0.69 |
| 2 | Friedman mse | None | Random | 0.71 |
| 3 | Friedman mse | Sqrt | Best | 0.68 |
| 4 | Friedman mse | Sqrt | Random | 0.65 |
| 5 | Friedman mse | Log2 | Best | 0.70 |
| 6 | Friedman mse | Log2 | random | 0.71 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | poisson | None | Best | 0.71 |
| 2 | Poisson | None | Random | 0.74 |
| 3 | Poisson | Sqrt | Best | 0.73 |
| 4 | Poisson | Sqrt | Random | 0.67 |
| 5 | Poisson | Log2 | Best | 0.72 |
| 6 | poisson | Log2 | random | 0.73 |

iii)Random forest [hyper parameters]r2 values are:

|  |  |  |  |
| --- | --- | --- | --- |
| S no | CRITERION | MAX FEATURES | R2 VALUE |
| 1 | Squared error | None | 0.85 |
| 2 | Squared error | Sqrt | 0.87 |
| 3 | Squared error | Log2 | 0.87 |
| 4 | Absolute error | None | 0.85 |
| 5 | Absolute error | Sqrt | 0.87 |
| 6 | Absolute error | Log2 | 0.87 |
| 7 | Friedman mse | None | 0.85 |
| 8 | Friedman mse | Sqrt | 0.86 |
| 9 | Friedman mse | Log2 | 0.87 |
| 10 | poisson | None | 0.85 |
| 11 | Poisson | Sqrt | 0.86 |
| 12 | poisson | Log2 | 0.86 |

|  |  |
| --- | --- |
|  |  |

|  |
| --- |
|  |
|  |