**Output**

**Regression Formulation:**

**Machine Learning:**

|  |  |  |
| --- | --- | --- |
| Model | Root Mean Squared Error | Mean Absolute Error |
| Random Forest Regressor (with 10 trees) | 15144 | 3707 |
| Random Forest Regressor (with 50 trees) | 14724 | 3469 |
| Linear Regression | 14509 | 3154 |
| Ridge Regression (learning rate=0.5) | 14502 | 3116 |
| Lasso | 14502 | 3111 |
| Bayesian Ridge | 14503 | 3125 |
| **Ensemble of Bayesian Ridge, Ridge, Lasso and Linear Regression** | **14501** | **3114** |

**Deep Learning:**

**Root Mean Squared Error: 14494**

**Mean Absolute Error: 3217**

**Classification Formulation:**

**Machine Learning:**

|  |  |  |
| --- | --- | --- |
| Model | Best Accuracy of 10 runs | Mean Accuracy of 10 runs |
| Decision Tree Classifier (decision criteria = "gini") | 58 | 55 |
| Gaussian Naïve Bayes | 60 | 52.5 |
| K-Nearest Neighbors (neighbors=7) | 61.5 | 58.8 |
| Support Vector Machines | 62 | - |
| Logistic Regression | 66.6 | 61.2 |
| Linear Discriminant Analysis | 67.3 | 62 |
| Random Forest Classifier (trees=50, decision criteria = "entropy") | 67.2 | 63.5 |
| **Ensemble of Logistic Regression, LDA and Random Forest** | **68.3** | **63.5** |

**Deep Learning:**

**accuracy of 65.1% (validation loss of 0.62)**