**HYPERPARAMETERS:**

**THE BELOW ACCURACIES ARE RECORDED WITH 10 AS THE DEPTH OF THE TREE , FOR BAGGING THE VALUE OF K IS TAKEN AS 8( 8 sub trees) AND WITH 20 PERCENT OF OVERLAP,BUT MAX DEPTH IS 100**

**BANK\_NOTE DATA SET(5 columns)**

**SINGLE DECISION\_TREE ACCURACY = 0.967**

**BAGGED ACCURACY = 0.987**

|  |  |
| --- | --- |
| **CLASS** | **MISCLASSIFICATION(%)** |
| **CLASS – 1** | **1.29%** |
| **CLASS - 2** | **3.27%** |

**Accuracies of the individual trees in 8 trees [1. 1. 0.94117647 0.88235294 0.94117647 0.94117647**

**0.94117647 0.94117647]**

**Accuracy for bagging: 0.9485294117647058**

**GRAPHS CONTAINING SPLIT FEATURES AND VALUES AT EACH NODE**

**|--- feature\_0 <= 0.32**

**| |--- feature\_1 <= 7.57**

**| | |--- feature\_0 <= -0.40**

**| | | |--- feature\_2 <= 6.22**

**| | | | |--- feature\_1 <= 7.29**

**| | | | | |--- class: 1**

**| | | | |--- feature\_1 > 7.29**

**| | | | | |--- feature\_0 <= -2.51**

**| | | | | | |--- class: 1**

**| | | | | |--- feature\_0 > -2.51**

**| | | | | | |--- class: 0**

**| | | |--- feature\_2 > 6.22**

**| | | | |--- feature\_1 <= -4.67**

**| | | | | |--- class: 1**

**| | | | |--- feature\_1 > -4.67**

**| | | | | |--- feature\_2 <= 6.61**

**| | | | | | |--- feature\_3 <= -0.77**

**| | | | | | | |--- class: 0**

**| | | | | | |--- feature\_3 > -0.77**

**| | | | | | | |--- class: 1**

**| | | | | |--- feature\_2 > 6.61**

**| | | | | | |--- class: 0**

**| | |--- feature\_0 > -0.40**

**| | | |--- feature\_1 <= 5.45**

**| | | | |--- feature\_2 <= 2.62**

**| | | | | |--- class: 1**

**| | | | |--- feature\_2 > 2.62**

**| | | | | |--- feature\_3 <= 1.23**

**| | | | | | |--- class: 0**

**| | | | | |--- feature\_3 > 1.23**

**| | | | | | |--- class: 1**

**| | | |--- feature\_1 > 5.45**

**| | | | |--- class: 0**

**| |--- feature\_1 > 7.57**

**| | |--- feature\_0 <= -4.73**

**| | | |--- class: 1**

**| | |--- feature\_0 > -4.73**

**| | | |--- class: 0**

**|--- feature\_0 > 0.32**

**| |--- feature\_2 <= -4.39**

**| | |--- feature\_1 <= 7.19**

**| | | |--- class: 1**

**| | |--- feature\_1 > 7.19**

**| | | |--- class: 0**

**| |--- feature\_2 > -4.39**

**| | |--- feature\_0 <= 1.59**

**| | | |--- feature\_2 <= -2.27**

**| | | | |--- feature\_1 <= 5.67**

**| | | | | |--- class: 1**

**| | | | |--- feature\_1 > 5.67**

**| | | | | |--- class: 0**

**| | | |--- feature\_2 > -2.27**

**| | | | |--- feature\_3 <= 0.08**

**| | | | | |--- feature\_0 <= 0.42**

**| | | | | | |--- feature\_2 <= -1.32**

**| | | | | | | |--- class: 1**

**| | | | | | |--- feature\_2 > -1.32**

**| | | | | | | |--- class: 0**

**| | | | | |--- feature\_0 > 0.42**

**| | | | | | |--- class: 0**

**| | | | |--- feature\_3 > 0.08**

**| | | | | |--- feature\_2 <= 1.85**

**| | | | | | |--- feature\_1 <= 3.56**

**| | | | | | | |--- class: 1**

**| | | | | | |--- feature\_1 > 3.56**

**SDD DATA SET(49 columns)**

|  |  |
| --- | --- |
| **CLASS** | **MISCLASSIFICATION(%)** |
| **CLASS -1** | **1.265%** |
| **CLASS -2** | **2.54%** |
| **CLASS -3** | **0.66%** |
| **CLASS -4** | **4.23%** |
| **CLASS -5** | **2.51%** |
| **CLASS -6** | **3.44%** |
| **CLASS -7** | **0.45%** |
| **CLASS -8** | **1.23%** |
| **CLASS -9** | **1.76%** |
| **CLASS -10** | **2.33%** |
| **CLASS -11** | **4.77%** |
| **CLASS -12** | **0.98** |
|  |  |

**SINGLE DECISION\_TREE ACCURACY = 0.987**

**GRAPHS CONTAINING SPLIT FEATURES AND VALUES AT EACH NODE. AND ALSO PRODUCED IN THE CODE. HERE JUST THE GRAPH IS PROVIDED FOR SDD**

