Output of the program.

The following displays the output for each train and test files.

1) train.dat ; test.dat

Decision Tree Display:

```
Attribute 5 = Branch 0 :
Attribute 6 = Branch 0 :
 Attribute 2 = Branch 1 :
   | Attribute 4 = Branch 0 :
    | Attribute 3 = Branch 0 :
   Leaf Node
                                     ->
                                          Class = 0
   Leaf Node
                                          Class = 0
                                     ->
   | Attribute 3 = Branch 1 :
    | Attribute 1 = Branch 0 :
                             Leaf Node ->
                                          Class = 0
   | | Attribute 1 = Branch 1 :
                             Leaf Node ->
                                          Class = 0
   | Attribute 4 = Branch 1 :
    | Attribute 1 = Branch 0 :
      Attribute 3 = Branch 1 :
                                          Class = 0
                             Leaf Node
                                     ->
     Leaf Node
                                          Class = 0
                                     ->
    Attribute 1 = Branch 1 :
   Leaf Node
                                     ->
                                          Class = 0
 Leaf Node ->
                                          Class = 0
  Attribute 2 = Branch 0 :
   | Attribute 1 = Branch 0 :
   | | Attribute 4 = Branch 0 :
      Attribute 3 = Branch 0 :
                             Leaf Node ->
                                          Class = 0
     Leaf Node ->
                                          Class = 0
    | Attribute 4 = Branch 1 :
   | | Attribute 3 = Branch 1 :
                             Leaf Node ->
                                          Class = 0
                                          Class = 0
   | | Attribute 3 = Branch 0 :
                             Leaf Node ->
   Attribute 1 = Branch 1 :
    | Attribute 4 = Branch 1 :
      | Attribute 3 = Branch 1 :
                             Leaf Node ->
                                          Class = 0
   Class = 0
                             Leaf Node ->
 | Attribute 3 = Branch 0 :
                             Leaf Node ->
                                          Class = 0
   Leaf Node ->
                                          Class = 0
 Attribute 6 = Branch 1 :
 Attribute 4 = Branch 1 :
   | Attribute 2 = Branch 0 :
     | Attribute 1 = Branch 0 :
     Leaf Node ->
                                          Class = 0
     | Attribute 3 = Branch 0 :
                             Leaf Node ->
                                          Class = 0
    | Attribute 1 = Branch 1 :
    | Attribute 3 = Branch 0 :
                             Leaf Node ->
                                          Class = 0
     | Attribute 3 = Branch 1 :
                             Leaf Node ->
                                          Class = 0
    Attribute 2 = Branch 1 :
   | | Attribute 1 = Branch 1 :
   Leaf Node ->
                                          Class = 0
    | Attribute 3 = Branch 1 :
                             Leaf Node ->
                                          Class = 1
    Attribute 1 = Branch 0 :
      Attribute 3 = Branch 0 :
                             Leaf Node ->
                                          Class = 1
      Attribute 3 = Branch 1 :
                             Leaf Node ->
                                          Class = 1
```

```
| Attribute 4 = Branch 0 :
   | Attribute 2 = Branch 0 :
   | Attribute 3 = Branch 1 :
 | | | Attribute 1 = Branch 0 :
                            Leaf Node ->
                                        Class = 0
 | | | Attribute 1 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
  | Attribute 3 = Branch 0 :
  Leaf Node ->
                                        Class = 0
 Leaf Node ->
                                        Class = 0
  Attribute 2 = Branch 1 :
 | Attribute 3 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
    | Attribute 3 = Branch 0 :
                            Leaf Node ->
                                        Class = 0
   | Attribute 1 = Branch 0 :
 | | | Attribute 3 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
Leaf Node ->
                                        Class = 0
Attribute 5 = Branch 1 :
Attribute 6 = Branch 0 :
 Attribute 3 = Branch 0 :
 | | Attribute 4 = Branch 1 :
  | Attribute 2 = Branch 1 :
                            Leaf Node ->
                                        Class = 1
 Leaf Node ->
                                        Class = 1
 Leaf Node ->
 | | | Attribute 2 = Branch 0 :
                                        Class = 0
   | | Attribute 2 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
  | Attribute 4 = Branch 0 :
 | | | | Attribute 2 = Branch 0 :
                            Leaf Node ->
                                        Class = 0
    | Attribute 2 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
    | Attribute 1 = Branch 0 :
                            Leaf Node ->
  Class = 0
 | | | Attribute 2 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
 Attribute 3 = Branch 1 :
   Attribute 2 = Branch 0 :
 | | | Attribute 1 = Branch 1 :
                            Leaf Node ->
                                        Class = 1
 Leaf Node ->
                                        Class = 1
  | Attribute 4 = Branch 0 :
    | Attribute 1 = Branch 1 :
                            Leaf Node ->
                                        Class = 1
  | | Attribute 1 = Branch 0 :
                            Leaf Node ->
                                        Class = 1
 | Attribute 2 = Branch 1 :
 Leaf Node ->
      Attribute 4 = Branch 0 :
                                        Class = 1
 | | | Attribute 4 = Branch 1 :
                            Leaf Node ->
                                        Class = 1
 | | | Attribute 4 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
 Leaf Node ->
                                        Class = 1
 Attribute 6 = Branch 1 :
 Attribute 4 = Branch 1 :
 Attribute 3 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
  | | Attribute 3 = Branch 0 :
                            Leaf Node ->
                                        Class = 1
    Attribute 2 = Branch 0 :
     Attribute 3 = Branch 1 :
                            Leaf Node ->
                                        Class = 1
```

```
Leaf Node ->
                                            Class = 0
    Attribute 1 = Branch 1 :
    | Attribute 2 = Branch 0 :
 Leaf Node ->
                                            Class = 0
                                            Class = 0
 | | | Attribute 3 = Branch 0 :
                              Leaf Node ->
    Attribute 2 = Branch 1 :
    | Attribute 3 = Branch 1 :
                              Leaf Node ->
                                            Class = 0
 Class = 0
                              Leaf Node ->
 Attribute 4 = Branch 0 :
   | Attribute 2 = Branch 0 :
     | Attribute 3 = Branch 0 :
      | Attribute 1 = Branch 1 :
                              Leaf Node ->
                                            Class = 0
    Class = 0
                              Leaf Node ->
   | | Attribute 3 = Branch 1 :
                              Leaf Node ->
   Class = 0
    | Attribute 1 = Branch 1 :
                              Leaf Node ->
                                            Class = 0
   Attribute 2 = Branch 1 :
   | Attribute 1 = Branch 0 :
      Attribute 3 = Branch 1 :
                              Leaf Node ->
                                            Class = 0
      Attribute 3 = Branch 0 :
                              Leaf Node ->
                                            Class = 0
     Attribute 1 = Branch 1 :
   Leaf Node ->
                                            Class = 0
 Leaf Node ->
                                            Class = 0
Accuracy of training data:
correct: 711
wrong: 89
Accuracy in % : 88.0
Accuracy of test data:
correct: 173
wrong: 30
Accuracy in %: 85.0
2) train-1.dat; test-1.dat
Decision Tree Display:
Attribute 5 = Branch 3 :
Attribute 6 = Branch 1 :
 Attribute 4 = Branch 1 :
 | Attribute 3 = Branch 1 :
   | | Attribute 1 = Branch 1 :
      | Attribute 2 = Branch 1 :
                              Leaf Node ->
                                            Class = 1
 | | | Attribute 2 = Branch 2 :
                              Leaf Node ->
                                            Class = 0
 | | Attribute 1 = Branch 2 :
 | | | Attribute 2 = Branch 1 :
                              Leaf Node ->
                                            Class = 0
```

Leaf Node ->

Leaf Node ->

Class = 1

Class = 0

| | Attribute 2 = Branch 2 :

| Attribute 3 = Branch 2 : | Attribute 1 = Branch 2 :

| Attribute 4 = Branch 2 : | Attribute 1 = Branch 1 :

```
Class = 1
Leaf Node ->
   | | Attribute 2 = Branch 2 :
                           Leaf Node ->
                                        Class = 0
 | Attribute 1 = Branch 2 :
Leaf Node ->
                                        Class = 0
                           Leaf Node ->
Class = 0
 Attribute 4 = Branch 3 :
 | Attribute 1 = Branch 1 :
                          Leaf Node ->
                                      Class = 0
 | Attribute 1 = Branch 2 :
                          Leaf Node ->
                                      Class = 0
 Attribute 6 = Branch 2 :
 Attribute 3 = Branch 1 :
   Attribute 4 = Branch 1 :
   | Attribute 1 = Branch 1 :
                           Leaf Node ->
                                        Class = 1
 Leaf Node ->
                                        Class = 0
 | | Attribute 4 = Branch 3 :
                           Leaf Node ->
 Class = 1
   | Attribute 1 = Branch 2 :
                           Leaf Node ->
                                        Class = 1
 Attribute 4 = Branch 2 :
 Leaf Node ->
                                        Class = 0
 Leaf Node ->
                                        Class = 1
   | Attribute 1 = Branch 3 :
                           Leaf Node ->
                                        Class = 1
  Attribute 3 = Branch 2 :
 | Attribute 1 = Branch 1 :
 Leaf Node ->
                                        Class = 0
                           Leaf Node ->
                                        Class = 0
 | | Attribute 2 = Branch 3 :
   | Attribute 1 = Branch 2 :
 Leaf Node ->
                                        Class = 1
 | | Attribute 2 = Branch 3 :
                           Leaf Node ->
                                        Class = 0
 | Attribute 1 = Branch 3 :
   | Attribute 2 = Branch 1 :
                           Leaf Node
                                        Class = 0
                                    ->
    Attribute 2 = Branch 2 :
                                   ->
                           Leaf Node
                                        Class = 0
Leaf Node ->
                                        Class = 1
Attribute 5 = Branch 2 :
| Attribute 4 = Branch 3 :
 Attribute 3 = Branch 1 :
 | Attribute 1 = Branch 1 :
 Leaf Node ->
                                        Class = 1
 Leaf Node
                                   ->
                                        Class = 0
   | Attribute 2 = Branch 3 :
                           Leaf Node ->
                                        Class = 0
   Attribute 1 = Branch 2 :
   | Attribute 2 = Branch 2 :
                           Leaf Node ->
                                        Class = 1
 | Attribute 1 = Branch 3 :
 Leaf Node ->
                                        Class = 0
   | Attribute 2 = Branch 3 :
                           Leaf Node ->
                                        Class = 1
 Attribute 3 = Branch 2 :
 | Attribute 2 = Branch 2 :
 Leaf Node ->
                                        Class = 0
 | | Attribute 1 = Branch 3 :
                           Leaf Node
                                        Class = 0
                                   ->
   Attribute 2 = Branch 3 :
   | Attribute 1 = Branch 1 :
                           Leaf Node ->
                                        Class = 0
 | | Attribute 1 = Branch 3 :
                           Leaf Node ->
                                        Class = 1
 | Attribute 2 = Branch 1 :
   | Attribute 1 = Branch 2 :
                           Leaf Node ->
                                        Class = 0
 | | Attribute 1 = Branch 3 :
                           Leaf Node ->
                                        Class = 0
 Attribute 4 = Branch 1 :
| Attribute 1 = Branch 1 :
```

```
Leaf Node ->
                                                Class = 1
| | Attribute 2 = Branch 1 :
    Attribute 2 = Branch 2 :
                                Leaf Node
                                                Class = 0
                                          ->
  | Attribute 2 = Branch 3 :
                                Leaf Node ->
                                                Class = 0
  Attribute 1 = Branch 2 :
                                                Class = 0
  | Attribute 2 = Branch 1 :
                                Leaf Node
                                         ->
                                Leaf Node
  | Attribute 2 = Branch 2 :
                                                Class = 1
                                          ->
  | Attribute 1 = Branch 3 :
  | Attribute 2 = Branch 1 :
                                Leaf Node ->
                                                Class = 0
  | Attribute 2 = Branch 3 :
                                Leaf Node ->
                                                Class = 1
 Attribute 4 = Branch 2 :
  | Attribute 2 = Branch 3 :
                              Leaf Node ->
                                              Class = 0
  | Attribute 2 = Branch 1 :
                              Leaf Node ->
                                              Class = 0
Attribute 2 = Branch 2 :
                              Leaf Node ->
                                              Class = 1
Attribute 5 = Branch 4 :
Attribute 1 = Branch 1 :
  | Attribute 2 = Branch 1 :
                              Leaf Node ->
                                              Class = 1
  Attribute 2 = Branch 2 :
                              Leaf Node
                                              Class = 0
                                        ->
 Attribute 2 = Branch 3 :
                              Leaf Node
                                              Class = 0
 Attribute 1 = Branch 2 :
  | Attribute 2 = Branch 1 :
                              Leaf Node ->
                                              Class = 0
  | Attribute 2 = Branch 2 :
                              Leaf Node
                                        ->
                                              Class = 1
  Attribute 2 = Branch 3 :
                                              Class = 0
                              Leaf Node ->
 Attribute 1 = Branch 3 :
  Attribute 2 = Branch 2 :
                              Leaf Node ->
                                              Class = 0
 Attribute 2 = Branch 3 :
                              Leaf Node ->
                                              Class = 1
Attribute 5 = Branch 1 :
| Attribute 1 = Branch 1 :
                            Leaf Node ->
                                           Class = 1
Attribute 1 = Branch 2 :
                            Leaf Node ->
                                            Class = 1
Attribute 1 = Branch 3 :
                            Leaf Node ->
                                            Class = 1
Accuracy of training data:
correct: 124
wrong: 0
Accuracy in % : 100.0
Accuracy of test data:
correct: 172
wrong: 44
Accuracy in %: 79.0
3) train-2.dat; test-2.dat
Decision Tree Display:
Attribute 5 = Branch 2 :
Attribute 3 = Branch 1 :
| Attribute 4 = Branch 1 :
  | Attribute 2 = Branch 1 :
                                Leaf Node
                                                Class = 0
                                          ->
  | Attribute 2 = Branch 3 :
                                                Class = 0
                                Leaf Node ->
  | Attribute 2 = Branch 2 :
                                Leaf Node ->
                                                Class = 1
  Attribute 4 = Branch 2 :
  Attribute 6 = Branch 1 :
```

```
Leaf Node ->
Class = 0
  | | Attribute 1 = Branch 3 :
                          Leaf Node ->
                                      Class = 1
 | Attribute 6 = Branch 2 :
Leaf Node ->
                                      Class = 1
Leaf Node ->
                                      Class = 1
 Leaf Node ->
                                      Class = 1
 Attribute 4 = Branch 3 :
 | Attribute 1 = Branch 1 :
 Leaf Node
                                  ->
                                      Class = 0
                                      Class = 1
 Leaf Node
                                 ->
  | Attribute 2 = Branch 3 :
                          Leaf Node
                                      Class = 1
                                  ->
   Attribute 1 = Branch 2 :
 Leaf Node ->
                                      Class = 1
 | | Attribute 2 = Branch 3 :
                          Leaf Node ->
                                      Class = 1
 Attribute 1 = Branch 3 :
  | Attribute 2 = Branch 1 :
                          Leaf Node ->
                                      Class = 1
 Leaf Node ->
                                      Class = 1
 Attribute 3 = Branch 2 :
 | Attribute 2 = Branch 1 :
  | Attribute 4 = Branch 3 :
   | Attribute 1 = Branch 1 :
  | | Attribute 6 = Branch 2 :
                           Leaf Node ->
                                       Class = 1
 Leaf Node ->
 Class = 0
  | Attribute 1 = Branch 3 :
                           Leaf Node ->
 | | | Attribute 6 = Branch 1 :
                                       Class = 1
 Leaf Node ->
                                       Class = 0
 | | Attribute 4 = Branch 1 :
   | Attribute 1 = Branch 2 :
                          Leaf Node ->
                                      Class = 1
   | Attribute 1 = Branch 3 :
                          Leaf Node ->
                                      Class = 1
   Attribute 4 = Branch 2 :
 Leaf Node ->
                                      Class = 1
 Leaf Node ->
                                      Class = 1
 Attribute 2 = Branch 2 :
 | Attribute 1 = Branch 1 :
                        Leaf Node ->
                                    Class = 0
 | Attribute 1 = Branch 2 :
                        Leaf Node ->
                                    Class = 0
 | Attribute 1 = Branch 3 :
                        Leaf Node ->
                                    Class = 0
 Attribute 2 = Branch 3 :
  | Attribute 1 = Branch 1 :
   | Attribute 4 = Branch 3 :
                          Leaf Node ->
                                      Class = 1
 | Attribute 1 = Branch 2 :
                                      Class = 1
Leaf Node ->
  | Attribute 4 = Branch 2 :
                          Leaf Node ->
                                      Class = 0
 | Attribute 1 = Branch 3 :
 Leaf Node ->
                                      Class = 0
Class = 0
                          Leaf Node ->
Attribute 5 = Branch 4 :
 Attribute 2 = Branch 1 :
 Attribute 6 = Branch 1 :
Leaf Node ->
                                    Class = 0
| | Attribute 1 = Branch 2 :
                        Leaf Node ->
                                    Class = 0
 | Attribute 1 = Branch 3 :
                        Leaf Node ->
                                    Class = 0
 Attribute 6 = Branch 2 :
| | Attribute 1 = Branch 1 :
| | | Attribute 3 = Branch 2 : Leaf Node ->
```

```
| | Attribute 1 = Branch 2 :
 | | | Attribute 3 = Branch 2 :
                           Leaf Node ->
                                       Class = 0
| | Attribute 1 = Branch 3 :
Leaf Node ->
                                       Class = 1
Leaf Node ->
                                       Class = 1
                           Leaf Node ->
                                       Class = 0
 Attribute 2 = Branch 2 :
 | Attribute 1 = Branch 1 :
 | Attribute 4 = Branch 2 :
 Leaf Node ->
                                       Class = 0
   | Attribute 3 = Branch 2 :
                           Leaf Node ->
                                       Class = 1
   | Attribute 4 = Branch 3 :
 | | | Attribute 6 = Branch 1 :
                            Leaf Node ->
                                        Class = 0
                            Leaf Node ->
 Class = 1
 Leaf Node ->
 | | | Attribute 6 = Branch 1 :
                                        Class = 1
 | | | Attribute 6 = Branch 2 :
                            Leaf Node ->
                                        Class = 0
 | Attribute 4 = Branch 1 :
   | Attribute 3 = Branch 2 :
                           Leaf Node -> Class = 0
 Attribute 1 = Branch 2 :
 | Attribute 3 = Branch 1 :
 Leaf Node ->
                                       Class = 1
                           Leaf Node ->
 | | Attribute 4 = Branch 3 :
                                       Class = 1
 | | Attribute 3 = Branch 2 :
 Leaf Node ->
                                       Class = 1
Leaf Node ->
                                       Class = 0
 Attribute 1 = Branch 3 :
 | Attribute 3 = Branch 2 :
                         Leaf Node ->
                                     Class = 0
 Attribute 2 = Branch 3 :
 Attribute 3 = Branch 1 :
 | Attribute 4 = Branch 2 :
                         Leaf Node ->
                                     Class = 0
| | Attribute 4 = Branch 3 :
                         Leaf Node ->
                                     Class = 1
 Attribute 3 = Branch 2 :
 | Attribute 1 = Branch 1 :
                         Leaf Node
                                     Class = 0
                                 ->
                                     Class = 0
 | Attribute 1 = Branch 2 :
                         Leaf Node ->
                                     Class = 0
| | Attribute 1 = Branch 3 :
                         Leaf Node ->
Attribute 5 = Branch 1 :
 Attribute 3 = Branch 1 :
 Attribute 6 = Branch 1 :
Leaf Node ->
                                     Class = 0
Leaf Node ->
                                     Class = 0
                         Leaf Node ->
 | Attribute 1 = Branch 3 :
                                     Class = 0
 Attribute 6 = Branch 2 :
 | Attribute 1 = Branch 1 :
| | | Attribute 2 = Branch 1 :
                           Leaf Node ->
                                       Class = 0
                           Leaf Node ->
 | | Attribute 2 = Branch 2 :
                                       Class = 0
   | Attribute 2 = Branch 3 :
                           Leaf Node ->
                                       Class = 0
   | Attribute 1 = Branch 2 :
Leaf Node ->
                                        Class = 0
   | Attribute 2 = Branch 3 :
 Leaf Node ->
                                        Class = 0
   | | Attribute 4 = Branch 3 :
                            Leaf Node ->
                                        Class = 1
 | Attribute 1 = Branch 3 :
```

```
Attribute 4 = Branch 2 :
                           Leaf Node ->
                                      Class = 0
  Leaf Node ->
                                      Class = 0
| | | Attribute 2 = Branch 2 :
Leaf Node ->
                                      Class = 0
 Leaf Node ->
                                      Class = 1
 Attribute 3 = Branch 2 :
 | Attribute 4 = Branch 1 :
 | Attribute 2 = Branch 1 :
 Leaf Node ->
                                     Class = 0
    | Attribute 1 = Branch 2 :
                         Leaf Node ->
                                     Class = 0
  | Attribute 1 = Branch 3 :
                         Leaf Node ->
                                     Class = 0
  Attribute 2 = Branch 2 :
 Leaf Node ->
                                     Class = 0
                         Leaf Node ->
 Class = 0
  | Attribute 2 = Branch 3 :
                         Leaf Node ->
 Class = 1
 Leaf Node ->
                                     Class = 0
 Attribute 4 = Branch 3 :
  | Attribute 1 = Branch 1 :
  | Attribute 2 = Branch 1 :
  | | Attribute 6 = Branch 2 :
                           Leaf Node ->
                                      Class = 0
 Leaf Node ->
 Class = 0
  | | Attribute 6 = Branch 2 :
                           Leaf Node ->
                                      Class = 1
 | Attribute 1 = Branch 2 :
 Leaf Node ->
                                      Class = 0
  | | Attribute 6 = Branch 2 :
                           Leaf Node ->
                                      Class = 1
   | Attribute 2 = Branch 2 :
                           Leaf Node ->
  Class = 1
 | Attribute 1 = Branch 3 :
| | | Attribute 2 = Branch 1 :
                         Leaf Node ->
                                     Class = 1
 Leaf Node ->
                                     Class = 1
 Leaf Node ->
                                     Class = 1
 Attribute 4 = Branch 2 :
 | | Attribute 1 = Branch 1 :
                        Leaf Node ->
                                   Class = 1
  Attribute 1 = Branch 2 :
                        Leaf Node ->
                                    Class = 1
 | Attribute 1 = Branch 3 :
                        Leaf Node ->
                                   Class = 1
Attribute 5 = Branch 3 :
Attribute 3 = Branch 1 :
 | Attribute 6 = Branch 1 :
 | | Attribute 1 = Branch 1 :
 Class = 0
                         Leaf Node ->
 Class = 0
                         Leaf Node ->
 | | Attribute 2 = Branch 3 :
                         Leaf Node ->
                                     Class = 0
 | Attribute 1 = Branch 2 :
  | Attribute 4 = Branch 1 :
                         Leaf Node
                                     Class = 0
                                 ->
  | Attribute 4 = Branch 2 :
                         Leaf Node ->
                                     Class = 1
 | | Attribute 4 = Branch 3 :
                         Leaf Node ->
                                     Class = 1
| | Attribute 1 = Branch 3 :
  | Attribute 4 = Branch 1 :
                         Leaf Node ->
                                     Class = 0
 | | Attribute 4 = Branch 3 :
                         Leaf Node ->
                                     Class = 1
 Attribute 6 = Branch 2 :
| | Attribute 2 = Branch 2 :
```

```
Attribute 4 = Branch 2 :
                             Leaf Node ->
                                         Class = 1
      Attribute 4 = Branch 3 :
                             Leaf Node ->
                                         Class = 1
 | | | Attribute 1 = Branch 2 :
 | | | Attribute 4 = Branch 3 :
                             Leaf Node ->
                                         Class = 0
    Attribute 1 = Branch 3 :
  Leaf Node ->
                                         Class = 1
  | | Attribute 4 = Branch 3 :
                             Leaf Node ->
                                         Class = 0
  Attribute 2 = Branch 3 :
  | Attribute 4 = Branch 1 :
      Attribute 1 = Branch 1 :
                             Leaf Node
                                         Class = 0
                                     ->
                             Leaf Node ->
      Attribute 1 = Branch 2 :
                                         Class = 1
  Leaf Node ->
                                         Class = 1
  | | Attribute 4 = Branch 2 :
 Leaf Node ->
                                         Class = 1
    | Attribute 1 = Branch 2 :
                             Leaf Node ->
                                         Class = 0
  | | Attribute 1 = Branch 3 :
                             Leaf Node ->
                                         Class = 0
  Attribute 2 = Branch 1 :
 | | Attribute 1 = Branch 2 :
                           Leaf Node ->
                                        Class = 1
  | Attribute 1 = Branch 3 :
                           Leaf Node ->
                                        Class = 1
 Attribute 3 = Branch 2 :
 Attribute 4 = Branch 2 :
  | Attribute 1 = Branch 1 :
 Class = 0
                           Leaf Node ->
  | Attribute 2 = Branch 2 :
                           Leaf Node ->
                                        Class = 1
 Leaf Node ->
                                        Class = 0
 | | Attribute 2 = Branch 2 :
                           Leaf Node ->
                                        Class = 0
    | Attribute 2 = Branch 3 :
                           Leaf Node ->
                                        Class = 0
  | Attribute 1 = Branch 3 :
                           Leaf Node ->
  | Attribute 2 = Branch 2 :
                                        Class = 0
 Leaf Node ->
                                        Class = 0
 Attribute 4 = Branch 3 :
  | Attribute 1 = Branch 1 :
 Leaf Node ->
                                        Class = 1
 Leaf Node ->
                                        Class = 0
 | | Attribute 1 = Branch 2 :
  | Attribute 2 = Branch 1 :
                           Leaf Node ->
                                        Class = 0
    | Attribute 2 = Branch 3 :
                           Leaf Node ->
                                        Class = 0
  Attribute 1 = Branch 3 :
 Leaf Node ->
                                        Class = 0
 | Attribute 4 = Branch 1 :
  Attribute 2 = Branch 3 :
  | Attribute 1 = Branch 1 :
 | | | Attribute 6 = Branch 1 :
                             Leaf Node ->
                                         Class = 0
 | | | Attribute 6 = Branch 2 :
                                         Class = 1
                             Leaf Node ->
 | Attribute 6 = Branch 1 :
                             Leaf Node ->
                                         Class = 1
  Attribute 2 = Branch 2 :
 Leaf Node ->
                                        Class = 0
 Leaf Node ->
                                        Class = 1
  Attribute 2 = Branch 1 :
                           Leaf Node ->
   | Attribute 6 = Branch 1 :
                                        Class = 0
  | Attribute 6 = Branch 2 :
                           Leaf Node ->
                                        Class = 1
```

```
Accuracy of training data:
correct: 169
wrong: 0
Accuracy in %: 100.0

Accuracy of test data:
correct: 153
wrong: 63
Accuracy in %: 70.0
```

4) train-3.dat; test-3.dat

Decision Tree Display:

```
Attribute 2 = Branch 1 :
Attribute 5 = Branch 1 :
  Attribute 1 = Branch 1 :
                              Leaf Node ->
                                              Class = 1
  Attribute 1 = Branch 2 :
                              Leaf Node
                                        ->
                                              Class = 1
 Attribute 1 = Branch 3 :
                              Leaf Node ->
                                              Class = 1
 Attribute 5 = Branch 2 :
  | Attribute 1 = Branch 1 :
                              Leaf Node
                                              Class = 1
                                        ->
  Attribute 1 = Branch 2 :
                              Leaf Node ->
                                              Class = 1
  | Attribute 1 = Branch 3 :
                              Leaf Node ->
                                              Class = 1
 Attribute 5 = Branch 3 :
  | Attribute 4 = Branch 1 :
  | Attribute 1 = Branch 1 :
                                Leaf Node ->
                                                Class = 0
  | Attribute 1 = Branch 3 :
                                                Class = 1
                                Leaf Node
  | Attribute 4 = Branch 3 :
   | Attribute 1 = Branch 1 :
                                Leaf Node
                                           ->
                                                Class = 1
    Attribute 1 = Branch 2 :
                                Leaf Node
                                           ->
                                                Class = 1
  Attribute 4 = Branch 2 :
 | Attribute 1 = Branch 3 :
                                Leaf Node ->
                                                Class = 1
 Attribute 5 = Branch 4 :
  Attribute 1 = Branch 1 :
                              Leaf Node ->
                                              Class = 0
  Attribute 1 = Branch 2 :
                              Leaf Node ->
                                              Class = 0
| | Attribute 1 = Branch 3 :
                              Leaf Node ->
                                              Class = 0
Attribute 2 = Branch 2 :
 Attribute 5 = Branch 3 :
  | Attribute 3 = Branch 1 :
  | Attribute 4 = Branch 1 :
    | Attribute 1 = Branch 1 :
                                  Leaf Node
                                                  Class = 1
    | Attribute 1 = Branch 2 :
                                  Leaf Node ->
                                                  Class = 1
    Attribute 4 = Branch 2 :
    | | Attribute 1 = Branch 1 :
                                  Leaf Node ->
                                                  Class = 0
    | Attribute 1 = Branch 3 :
                                  Leaf Node ->
                                                  Class = 1
   Attribute 4 = Branch 3 :
   | Attribute 1 = Branch 1 :
                                  Leaf Node ->
                                                  Class = 1
   | Attribute 1 = Branch 2 :
                                  Leaf Node ->
                                                  Class = 0
  Attribute 3 = Branch 2 :
  | Attribute 1 = Branch 1 :
                                Leaf Node
                                                Class = 1
    Attribute 1 = Branch 2 :
                                Leaf Node
                                                Class = 1
                                          ->
   Attribute 1 = Branch 3 :
                                Leaf Node ->
                                                Class = 1
```

```
Attribute 5 = Branch 2 :
  | Attribute 1 = Branch 1 :
  | Attribute 3 = Branch 1 :
                                Leaf Node ->
                                                Class = 1
  | | Attribute 3 = Branch 2 :
                                                Class = 1
                                Leaf Node ->
  Attribute 1 = Branch 2 :
  | Attribute 4 = Branch 2 :
                                Leaf Node ->
                                                Class = 0
  | Attribute 4 = Branch 3 :
                                Leaf Node ->
                                                Class = 1
  | Attribute 4 = Branch 1 :
                                Leaf Node ->
                                                Class = 1
  Attribute 1 = Branch 3 :
  | Attribute 3 = Branch 1 :
                                Leaf Node ->
                                                Class = 1
  | Attribute 3 = Branch 2 :
                                Leaf Node ->
                                                Class = 1
 Attribute 5 = Branch 1 :
  Attribute 1 = Branch 1 :
                              Leaf Node ->
                                              Class = 1
  | Attribute 1 = Branch 2 :
                              Leaf Node ->
                                              Class = 1
                              Leaf Node ->
  Attribute 1 = Branch 3 :
                                              Class = 1
 Attribute 5 = Branch 4 :
  Attribute 1 = Branch 1 :
                              Leaf Node ->
                                             Class = 0
  Attribute 1 = Branch 2 :
                              Leaf Node ->
                                              Class = 0
| | Attribute 1 = Branch 3 :
                              Leaf Node ->
                                             Class = 0
Attribute 2 = Branch 3 :
 Attribute 4 = Branch 1 :
  Attribute 5 = Branch 2 :
  | Attribute 1 = Branch 1 :
                                Leaf Node ->
                                                Class = 0
  | Attribute 1 = Branch 2 :
                                Leaf Node ->
                                                Class = 0
  Attribute 5 = Branch 4 :
  | Attribute 1 = Branch 1 :
                                Leaf Node
                                          ->
                                                Class = 0
  | | Attribute 1 = Branch 2 :
                                                Class = 0
                                Leaf Node ->
  | Attribute 1 = Branch 3 :
                                Leaf Node ->
                                                Class = 1
  Attribute 5 = Branch 1 :
  | Attribute 1 = Branch 1 :
                                Leaf Node
                                                Class = 0
                                          ->
                                                Class = 0
   Attribute 1 = Branch 2 :
                                Leaf Node ->
  | Attribute 1 = Branch 3 :
                                Leaf Node
                                                Class = 0
                                          ->
  Attribute 5 = Branch 3 :
  | Attribute 1 = Branch 2 :
                                Leaf Node ->
                                                Class = 1
  | Attribute 1 = Branch 3 :
                                Leaf Node ->
                                                Class = 1
 Attribute 4 = Branch 2 :
  | Attribute 1 = Branch 1 :
                              Leaf Node ->
                                              Class = 0
  | Attribute 1 = Branch 2 :
                              Leaf Node ->
                                              Class = 0
  Attribute 1 = Branch 3 :
                              Leaf Node ->
                                              Class = 0
 Attribute 4 = Branch 3 :
| Attribute 1 = Branch 1 :
                              Leaf Node ->
                                              Class = 0
| Attribute 1 = Branch 2 :
                              Leaf Node ->
                                              Class = 0
| Attribute 1 = Branch 3 :
                              Leaf Node ->
                                              Class = 0
Accuracy of training data:
correct : 122
wrong: 0
Accuracy in % : 100.0
```

Accuracy of test data:

correct : 204
wrong : 12

Accuracy in % : 94.0