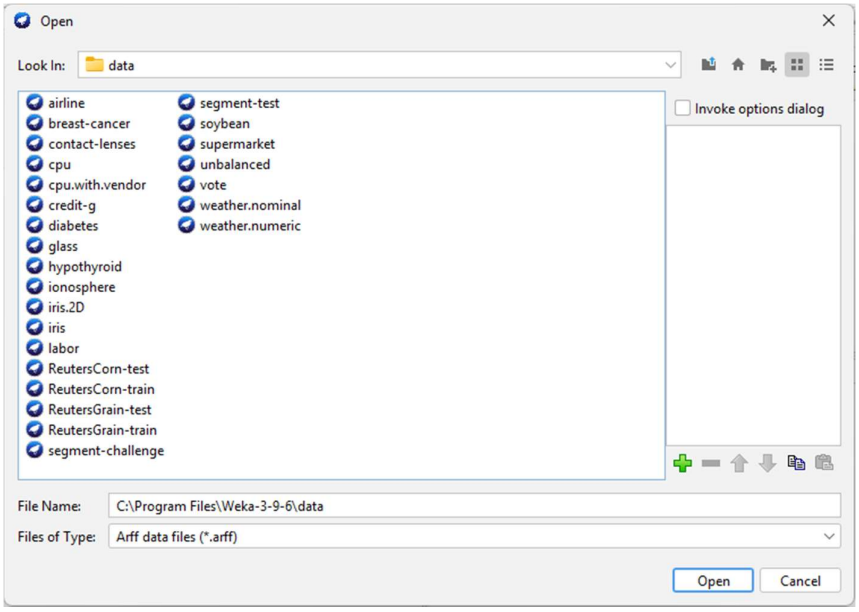
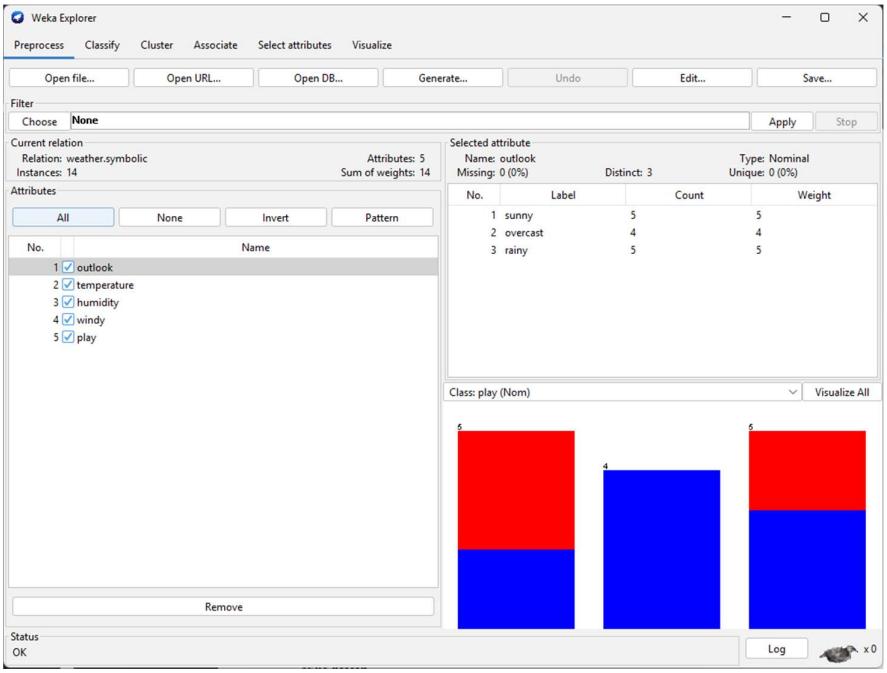
WEEK-7

Demonstration of ID3 classification algorithm and generating rules using ID3 algorithm.

Step 1: Click open file and choose the weather.nominal file.



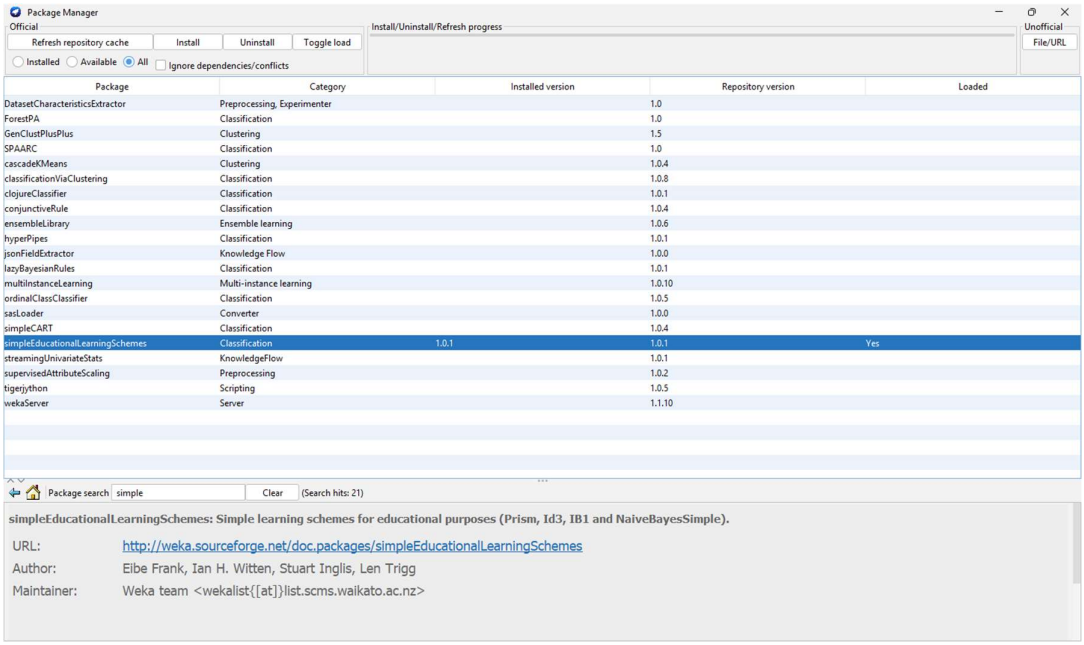
Step 2: Choose all attributes.



Step 3: Go to Classify & choose **id3**.

Installing id3

1. Go to Tools → Package Manager
2. Search simple & install SimpleEducationLearningSchemes



3.

Step 4: Output (10-fold) (id3)

```
=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances          12               85.7143 %
Incorrectly Classified Instances         2               14.2857 %
Kappa statistic                          0.6889
Mean absolute error                      0.1429
Root mean squared error                  0.378
Relative absolute error                 30      %
Root relative squared error             76.6097 %
Total Number of Instances               14

=== Detailed Accuracy By Class ===

               TP Rate   FP Rate   Precision   Recall  F-Measure  MCC      ROC Area  PRC Area  Class
               0.889     0.200     0.889      0.889    0.889      0.689    0.844     0.862     yes
               0.800     0.111     0.800      0.800    0.800      0.689    0.844     0.711     no
Weighted Avg.  0.857     0.168     0.857      0.857    0.857      0.689    0.844     0.808

=== Confusion Matrix ===

 a b   <-- classified as
 8 1 | a = yes
 1 4 | b = no
```

Choosing **J48 (10-fold)**

```
=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances           7               50      %
Incorrectly Classified Instances         7               50      %
Kappa statistic                         -0.0426
Mean absolute error                      0.4167
Root mean squared error                  0.5984
Relative absolute error                 87.5    %
Root relative squared error            121.2987 %
Total Number of Instances               14

=== Detailed Accuracy By Class ===

               TP Rate   FP Rate   Precision   Recall  F-Measure  MCC      ROC Area  PRC Area  Class
               0.556     0.600     0.625       0.556   0.588      -0.043   0.633     0.758     yes
               0.400     0.444     0.333       0.400   0.364      -0.043   0.633     0.457     no
Weighted Avg.  0.500     0.544     0.521       0.500   0.508      -0.043   0.633     0.650

=== Confusion Matrix ===

 a b   <-- classified as
 5 4 | a = yes
 3 2 | b = no
```

Visualize tree