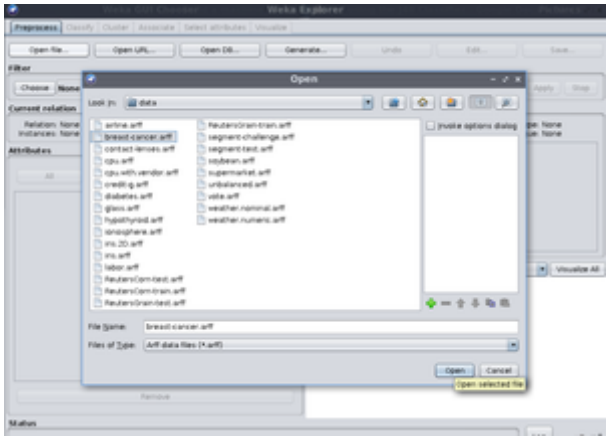
EX : 6 Build a Decision Tree by using J48algorithm

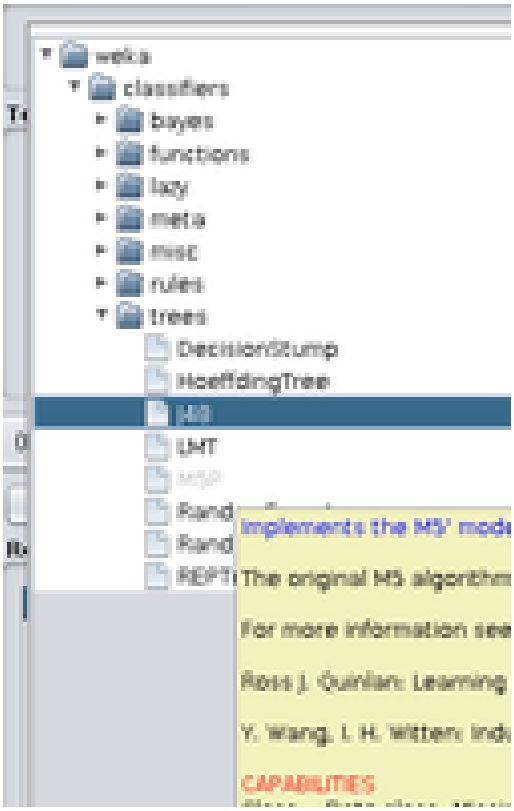
J48 is a machine learning decision tree classification algorithm based on Iterative Dichotomiser 3. It is very helpful in examine the data categorically and continuously.

Steps to follow:
Step 1: Create a model using GUI
Step 2: After opening Weka click on the "Explorer" Tab

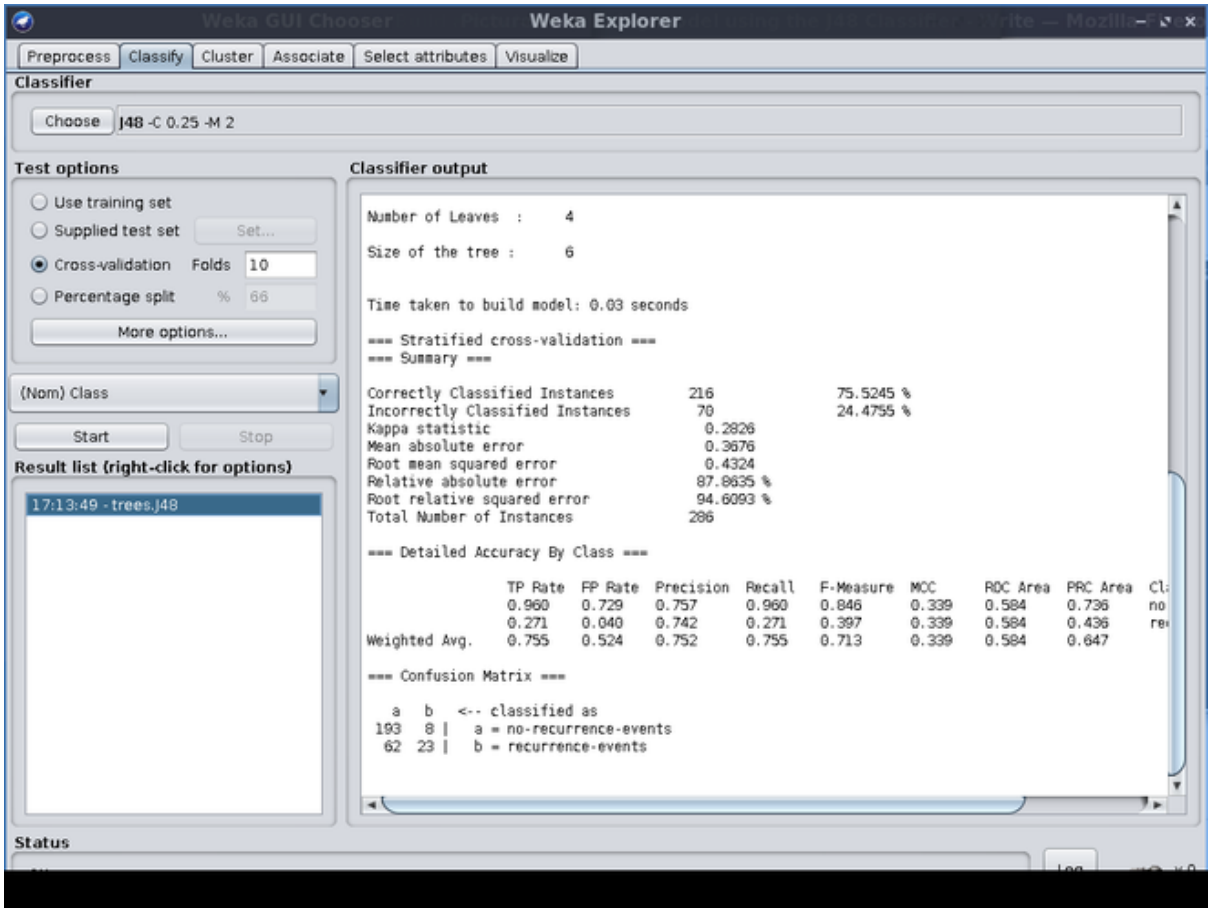
Step 3: In the "Preprocess" Tab Click on "Open File" and select the "breast-cancer.arff" file which will be located in the installation path, inside the data folder.



Step 4: In the "Classify" tab click on the choose button. Now under weka/classifiers/trees/ select J48



Step 5: Now one can click on the J48 Classifier selection and play around with it like changing batch size, confidence factor, etc. There under "Test Options" we'll use the default cross-validation option as folds 10 and click on start.


Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
J48 -C 0.25 -M 2
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) Class
Start
Stop
Result list (right-click for options)
17:13:49 - trees.J48
Classifier output
Number of Leaves : 4
Size of the tree : 6
Time taken to build model: 0.03 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances 216 75.5245 %
Incorrectly Classified Instances 70 24.4755 %
Kappa statistic 0.2826
Mean absolute error 0.3676
Root mean squared error 0.4324
Relative absolute error 87.8635 %
Root relative squared error 94.6093 %
Total Number of Instances 286
=== Detailed Accuracy By Class ===
TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area
0.960 0.729 0.757 0.960 0.846 0.339 0.584 0.736
0.271 0.040 0.742 0.271 0.397 0.339 0.584 0.436
Weighted Avg. 0.755 0.524 0.752 0.755 0.713 0.339 0.584 0.647
=== Confusion Matrix ===
a b <-- classified as
193 8 | a = no-recurrence-events
62 23 | b = recurrence-events
Status

RESULT :