Artificial Intelligence

Open source analysis

Weka

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What is Weka ?

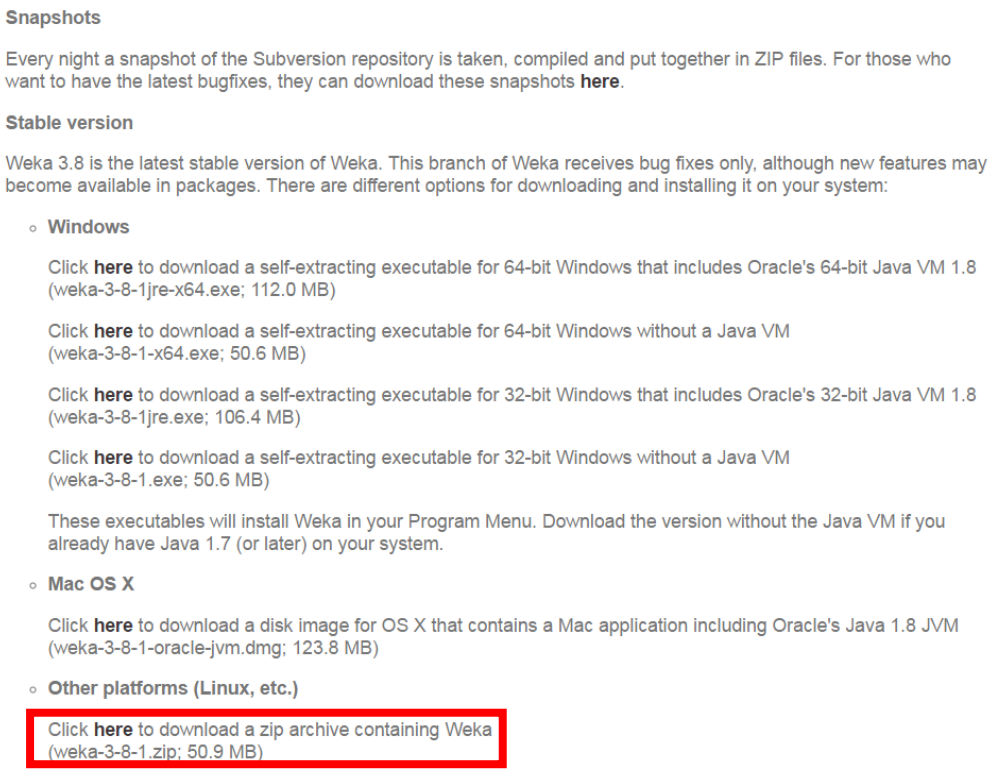
Weka is a collection of machine learning algorithms for data mining tasks.

Weka contains lots of methods:
1) Data pre-processing
2) Classification
3) Regression
4) Clustering
5) Association Rules
6) Visualization

Weka is open source software issued under the GNU General Public License.

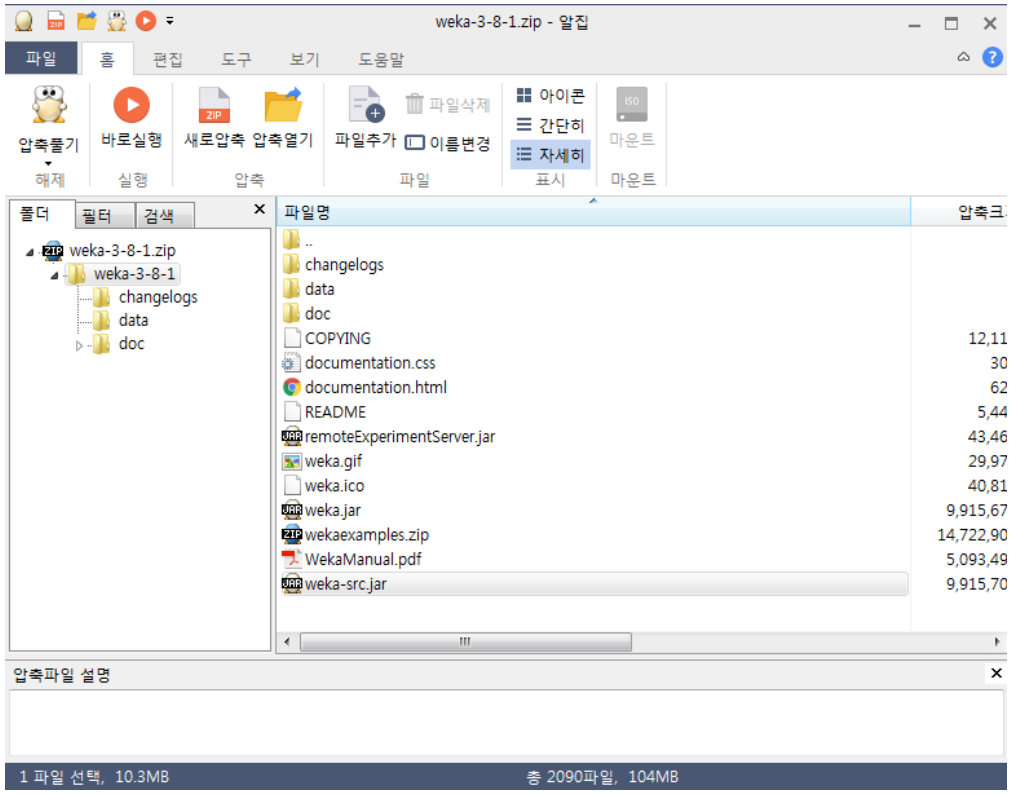
How to Install ?

1. Go to "Download."

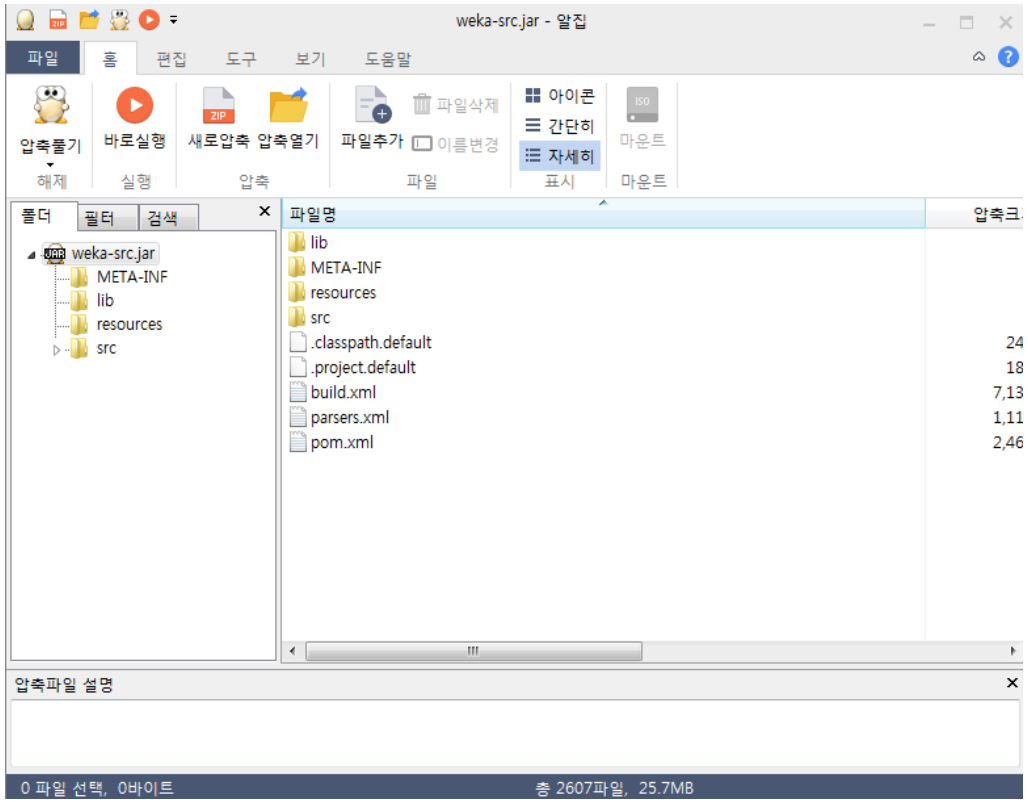


2. Download weka-3-8-1.zip.

How to Install ?

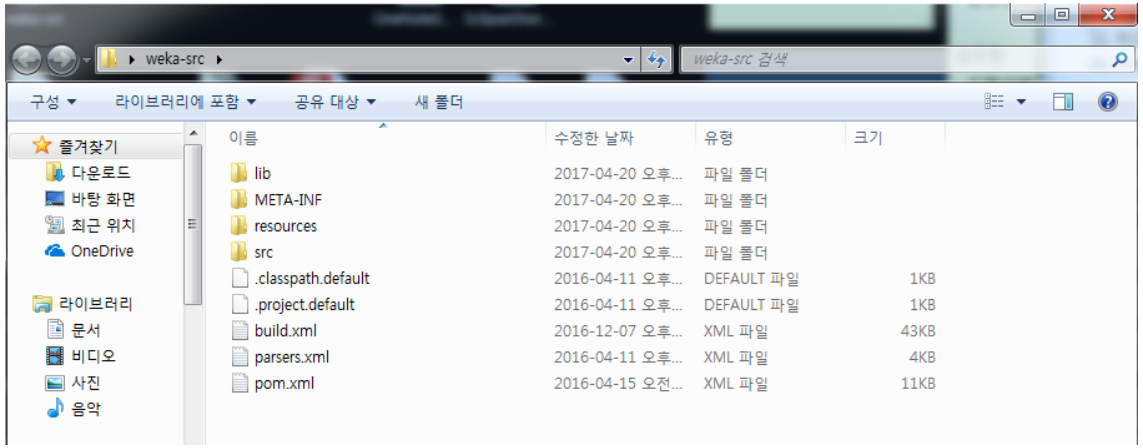


3. Extract weka-src.jar from weka-3-8-1.zip.



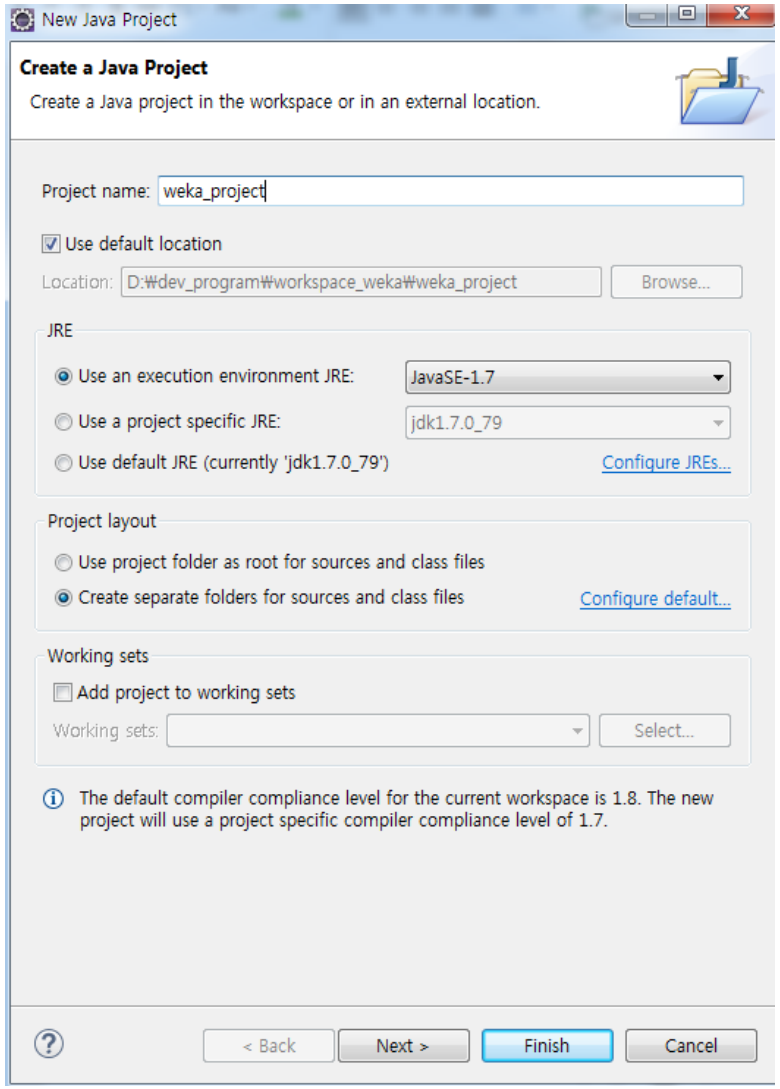
4. Extract all from weka-src.jar

How to Install ?

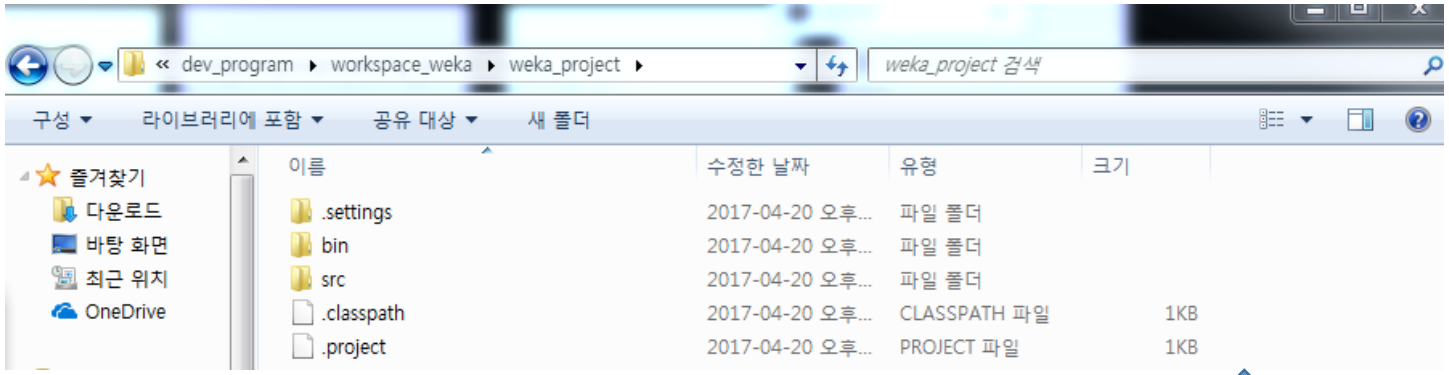


Now you got the above weka-src.

How to Install ?

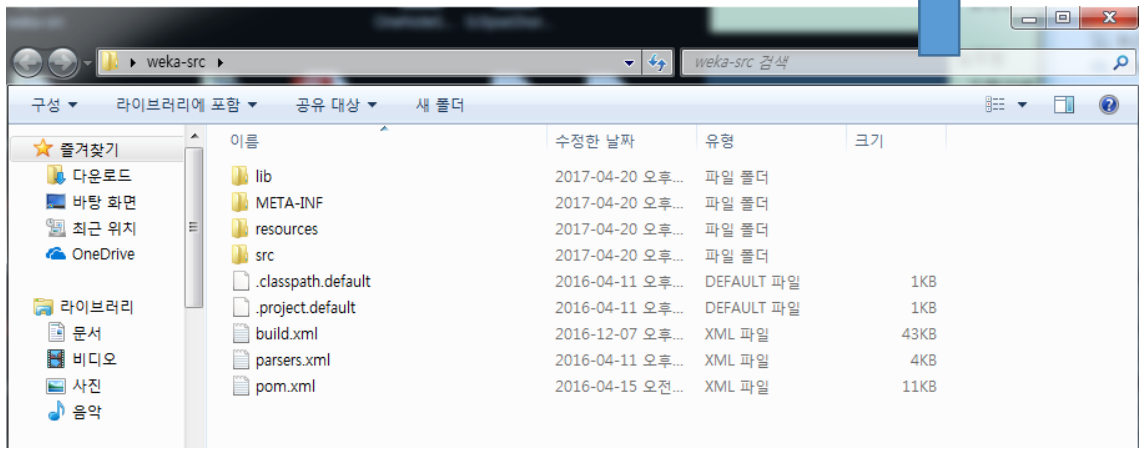


5. Open Eclipse and make a weka project.

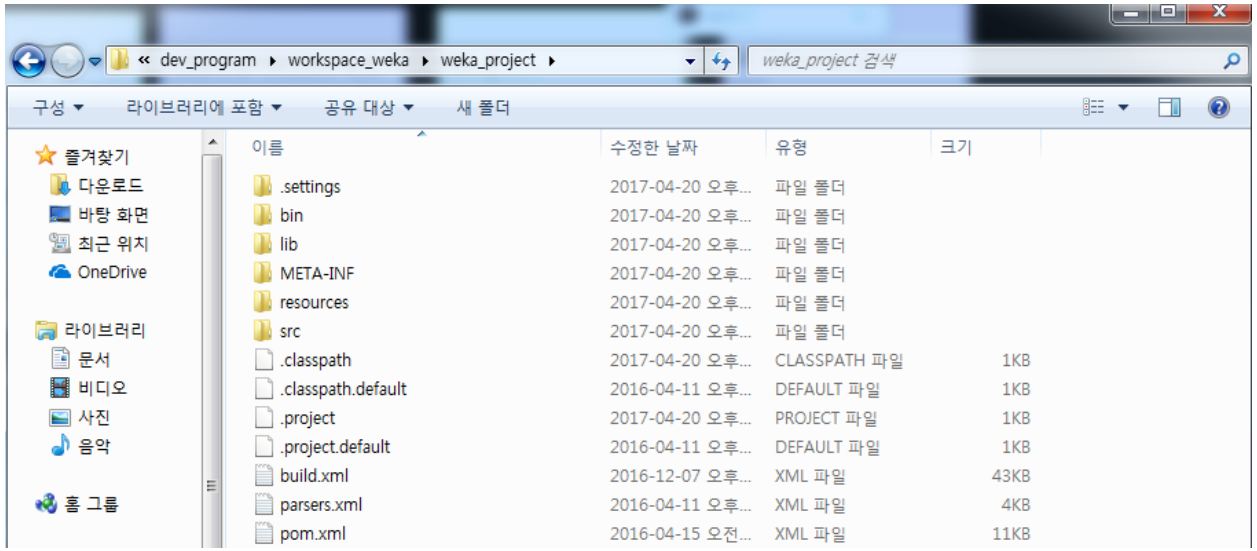


6. Go to the weka project folder
and paste the weka-src into the weka project.

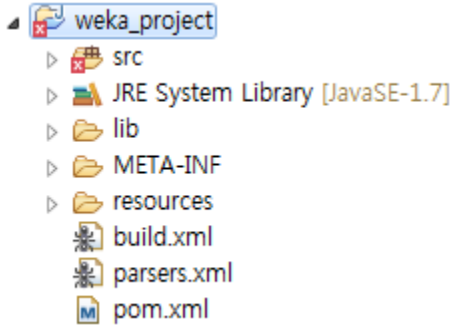
Paste all!



How to Install ?

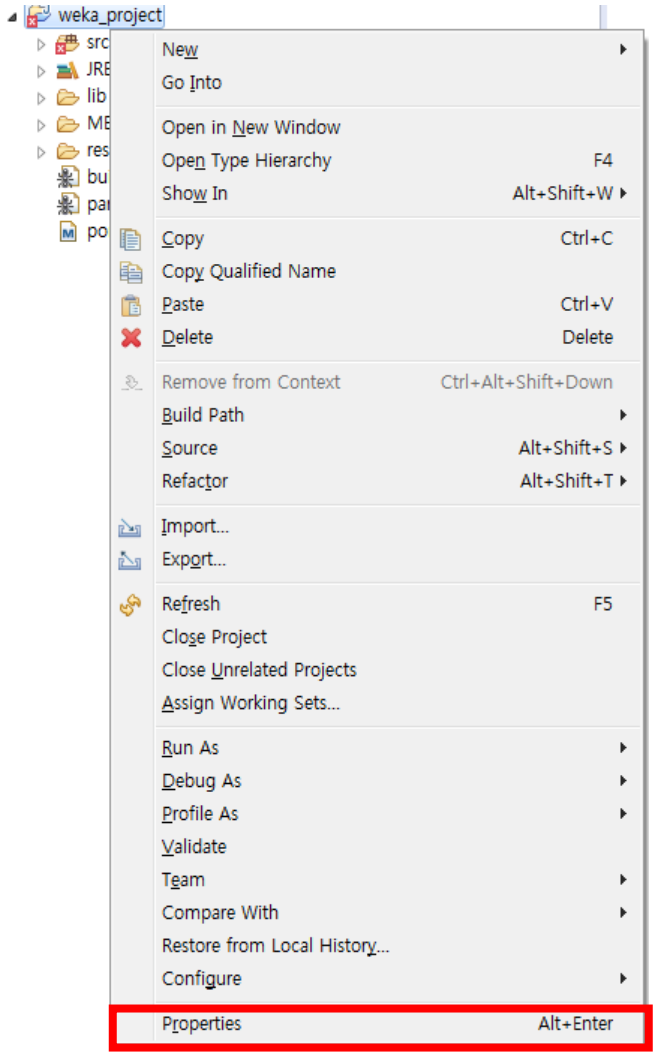


Now you got the weka project folder!

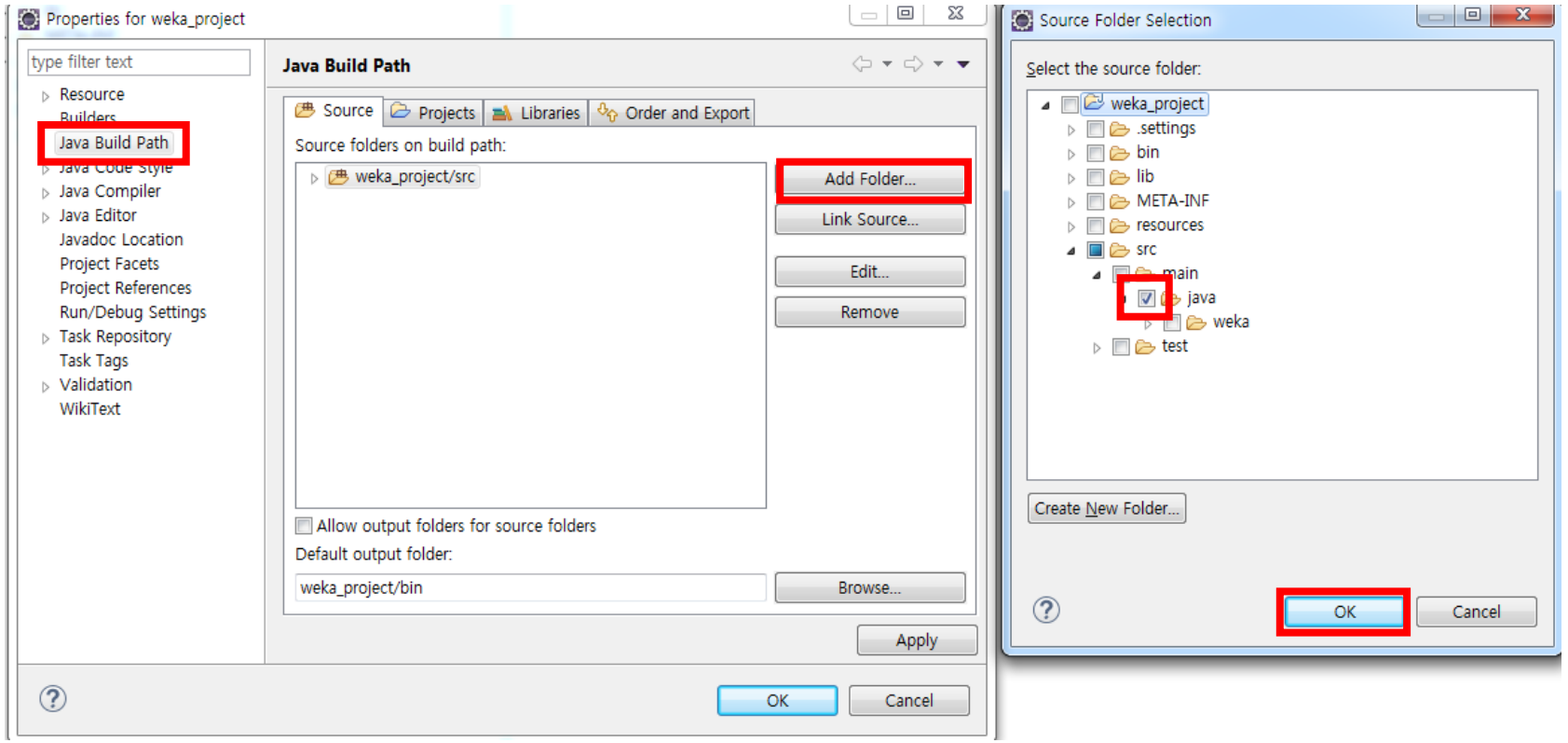


However, your project is something wrong with a path settings...

How to Install ?

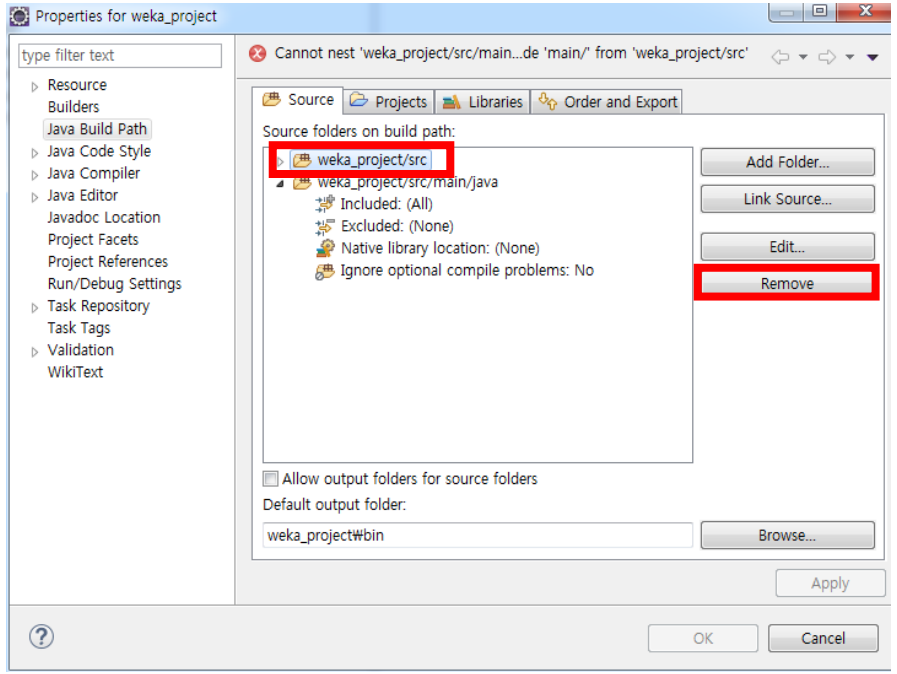


7. Go to "Properties."

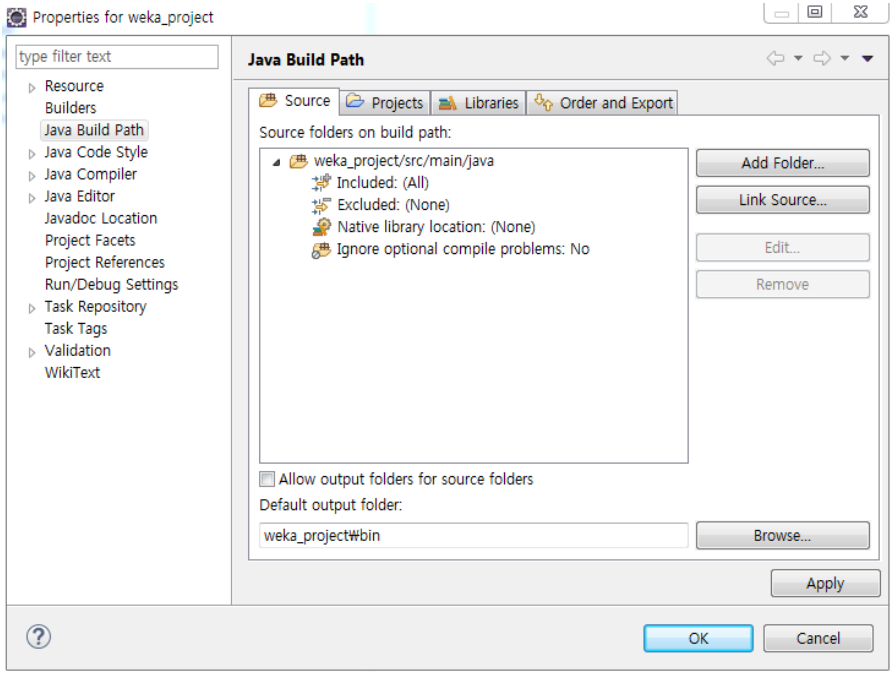


8. Go to "Java Build Path," and then click "Add Folder." check "java" and click "OK."

How to Install ?

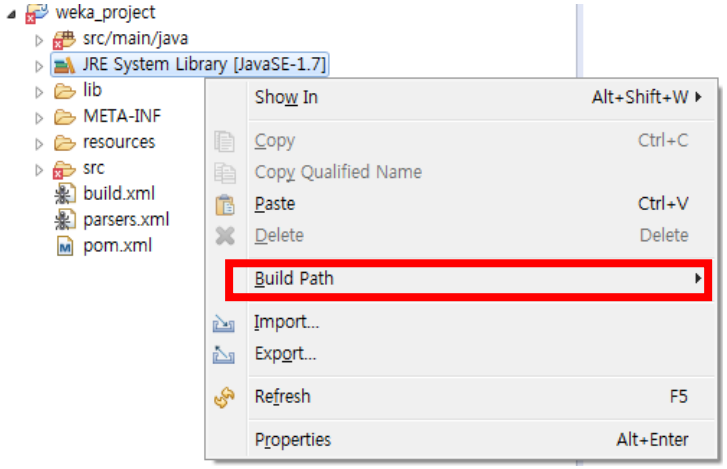


9. Click weka_project/src, and remove it.

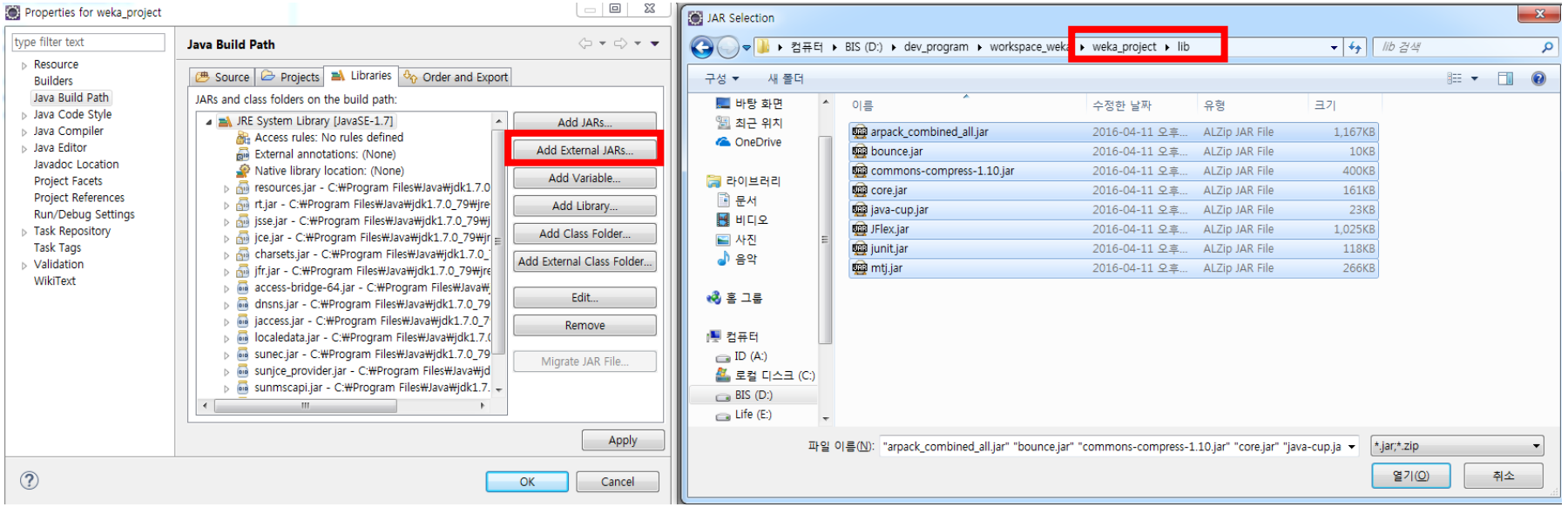


10. Click "OK."

How to Install ?

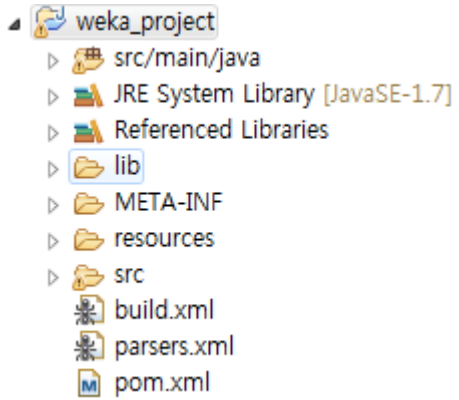


11. Click "Properties," and go to "Configure Build Path."



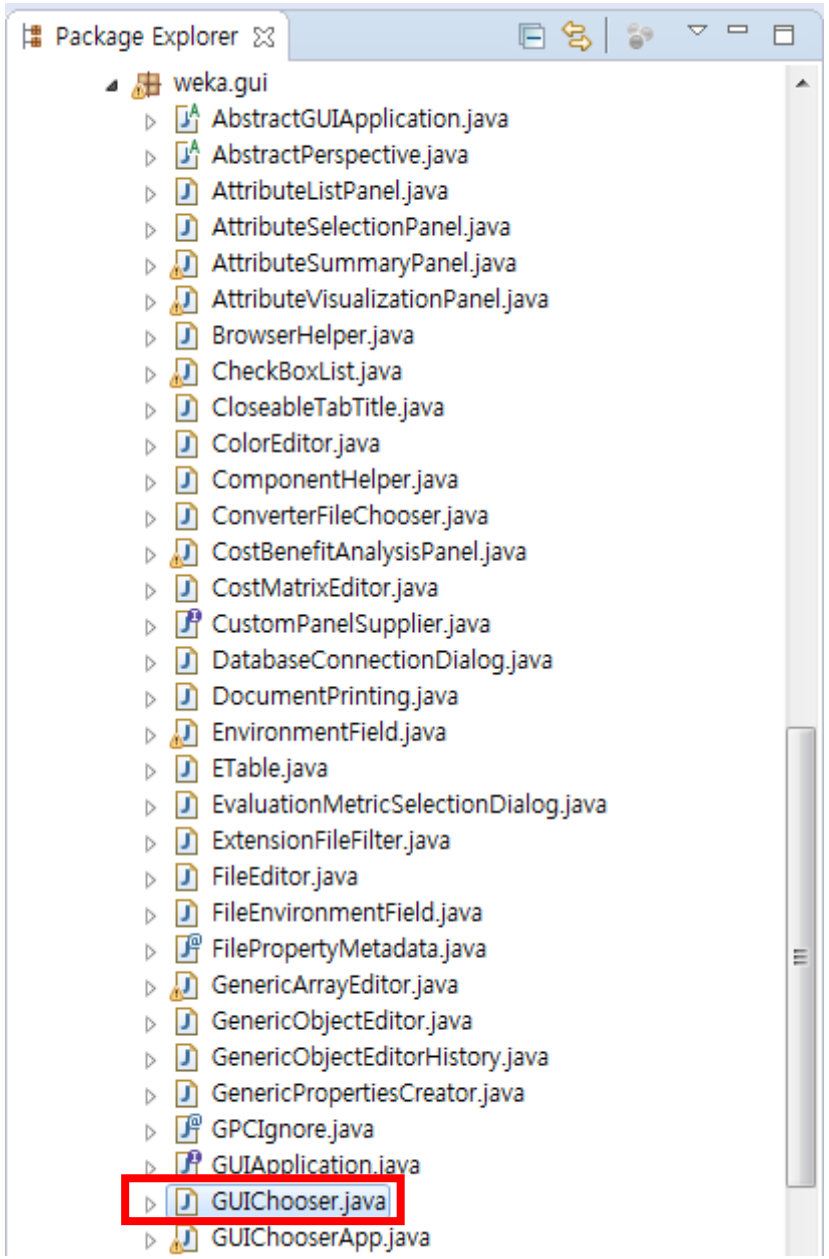
12. Click "Add External JARs," and select all of wek libs (in the lib folder).

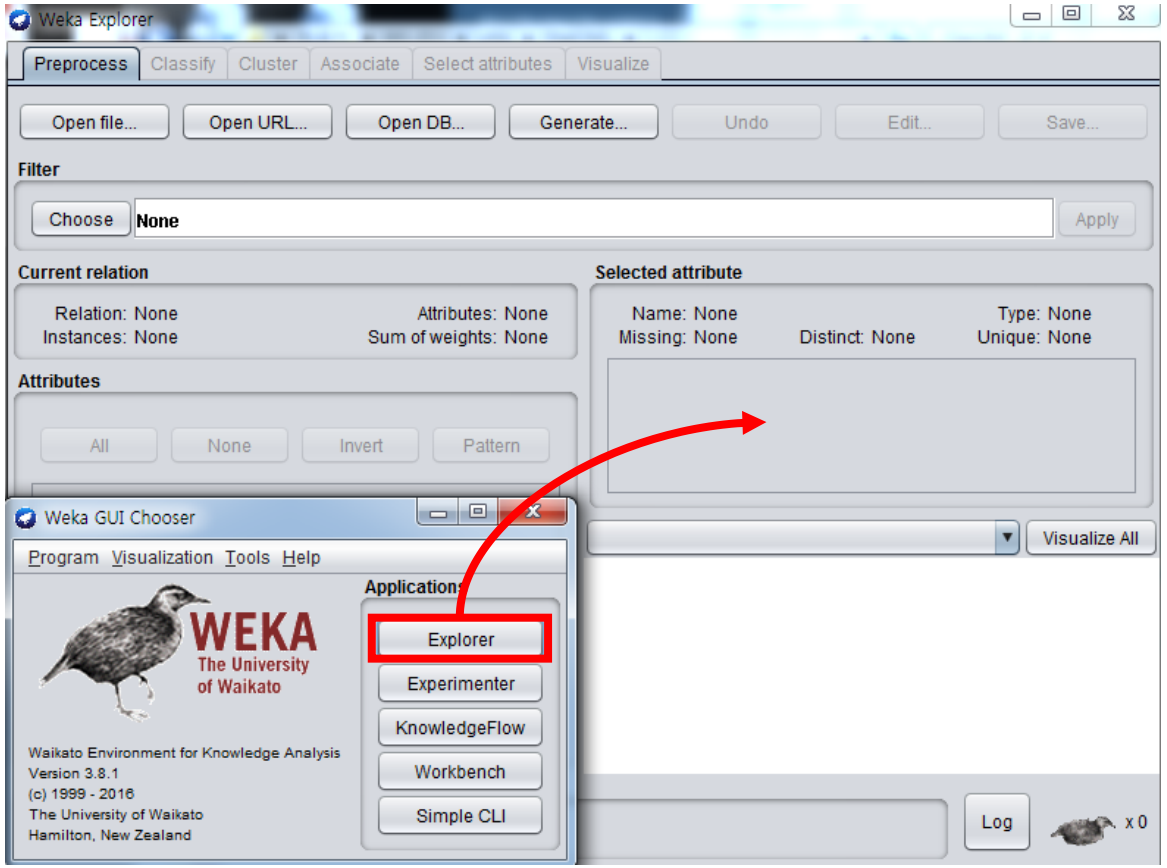
How to Install ?



Finally, you are ready to do HOMEWORK.

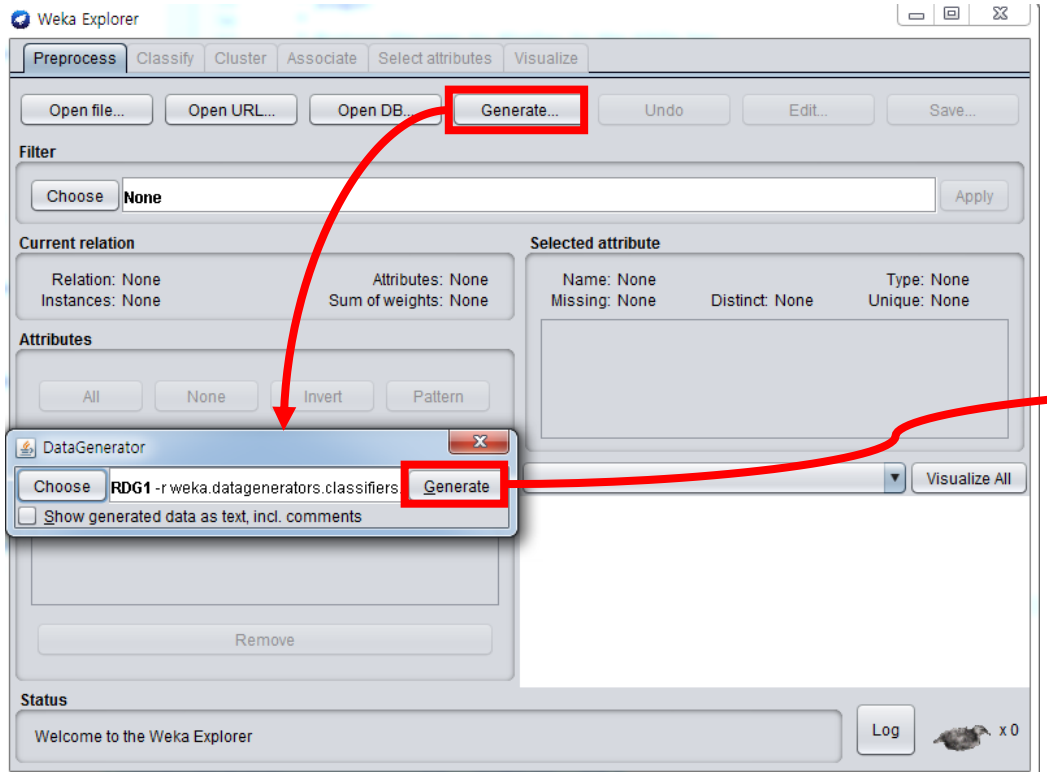
Weka

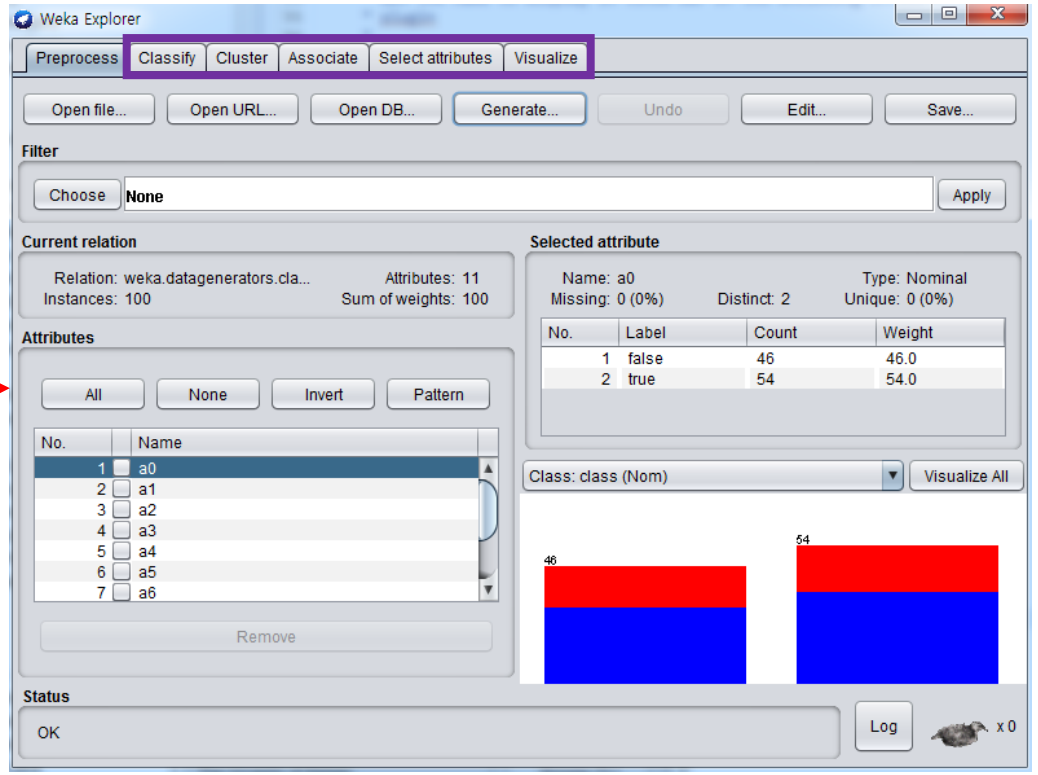




The main class of weka is "GUIChooser.java" in weka.gui package.
If you run the class, you will see the above weka GUI.
After clicking "Explorer" button, you can face with the main process.

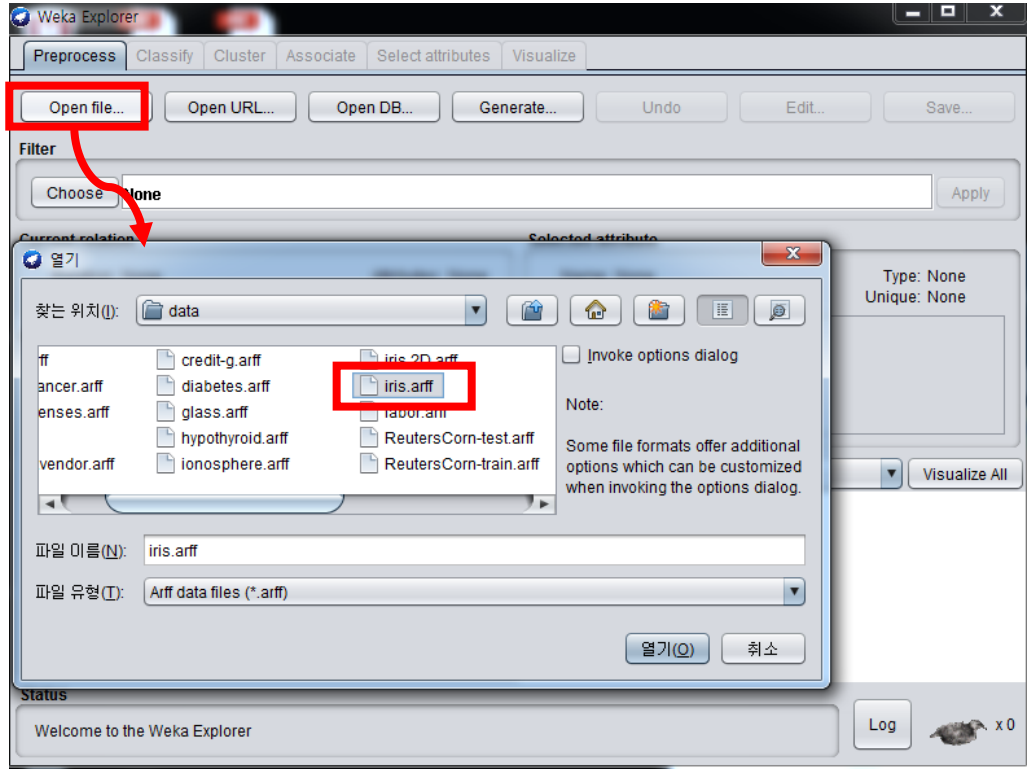
Weka: Loading File





Clicking "Generate" button makes a training set automatically.
Next, you can see that the "Classify," "Cluster," "Associate," "Select attributes," and "Visualize" tab are activated.

Weka: Loading File



Click "Open file" button and select data file.

```
@RELATION iris
```

Data name

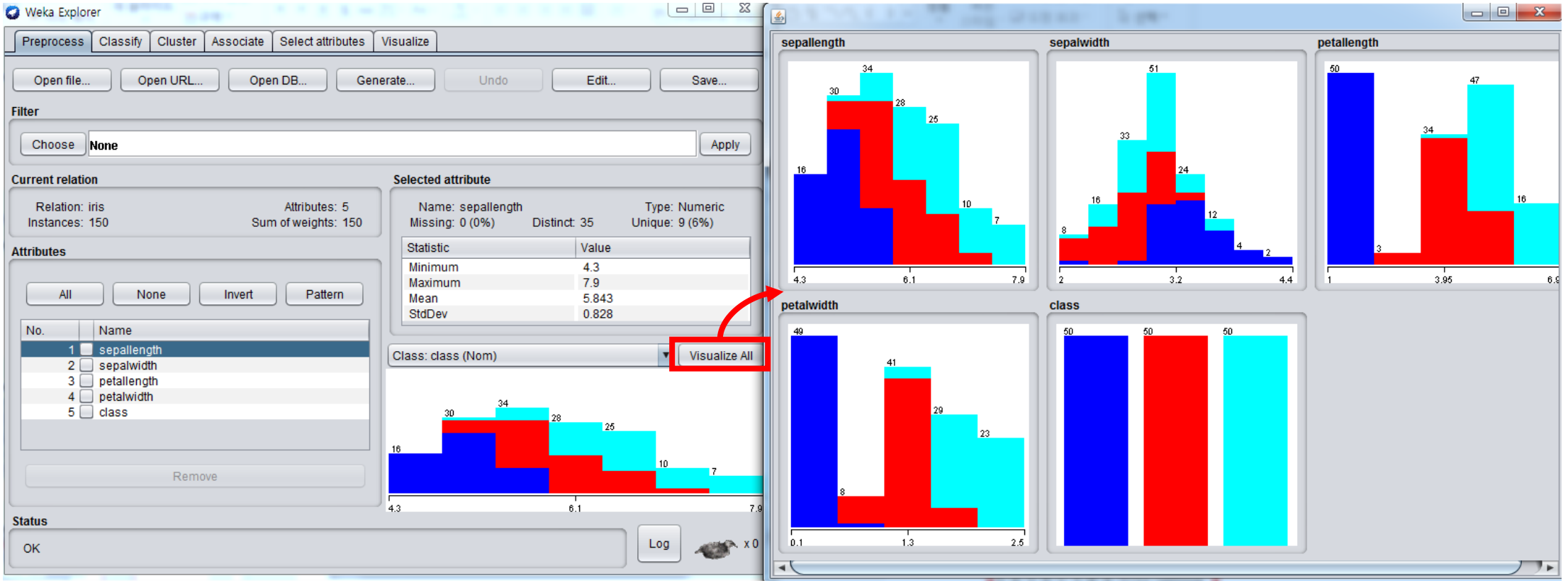
```
@ATTRIBUTE sepallength  REAL
@ATTRIBUTE sepalwidth   REAL
@ATTRIBUTE petallength  REAL
@ATTRIBUTE petalwidth   REAL
@ATTRIBUTE class        {Iris-setosa,Iris-versicolor,Iris-virginica}
```

Attribute setting

```
@DATA
5.1,3.5,1.4,0.2,Iris-setosa
4.9,3.0,1.4,0.2,Iris-setosa
4.7,3.2,1.3,0.2,Iris-setosa
4.6,3.1,1.5,0.2,Iris-setosa
5.0,3.6,1.4,0.2,Iris-setosa
5.4,3.9,1.7,0.4,Iris-setosa
4.6,3.4,1.4,0.3,Iris-setosa
5.0,3.4,1.5,0.2,Iris-setosa
4.4,2.9,1.4,0.2,Iris-setosa
4.9,3.1,1.5,0.1,Iris-setosa
5.4,3.7,1.5,0.2,Iris-setosa
4.8,3.4,1.6,0.2,Iris-setosa
4.8,3.0,1.4,0.1,Iris-setosa
4.3,3.0,1.1,0.1,Iris-setosa
5.8,4.0,1.2,0.2,Iris-setosa
5.7,4.4,1.5,0.4,Iris-setosa
5.4,3.9,1.3,0.4,Iris-setosa
5.1,3.5,1.4,0.3,Iris-setosa
5.7,3.8,1.7,0.3,Iris-setosa
5.1,3.8,1.5,0.3,Iris-setosa
```

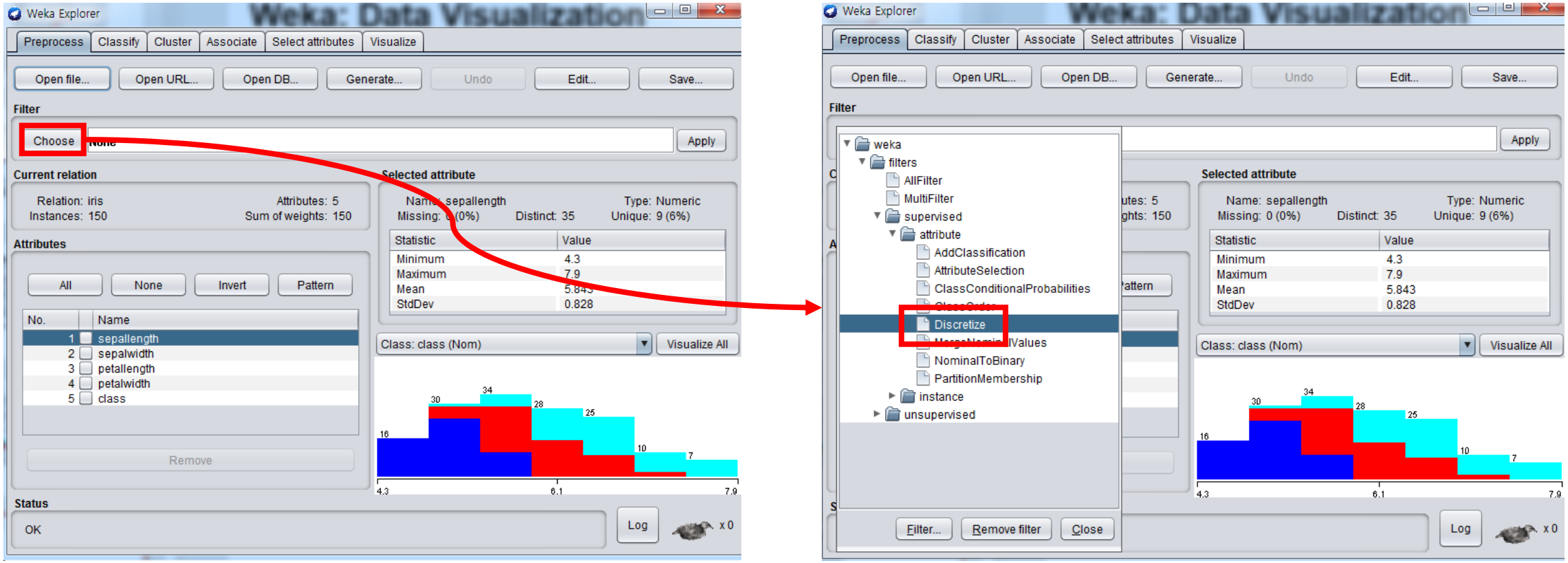
Instances

Weka: Data Visualization



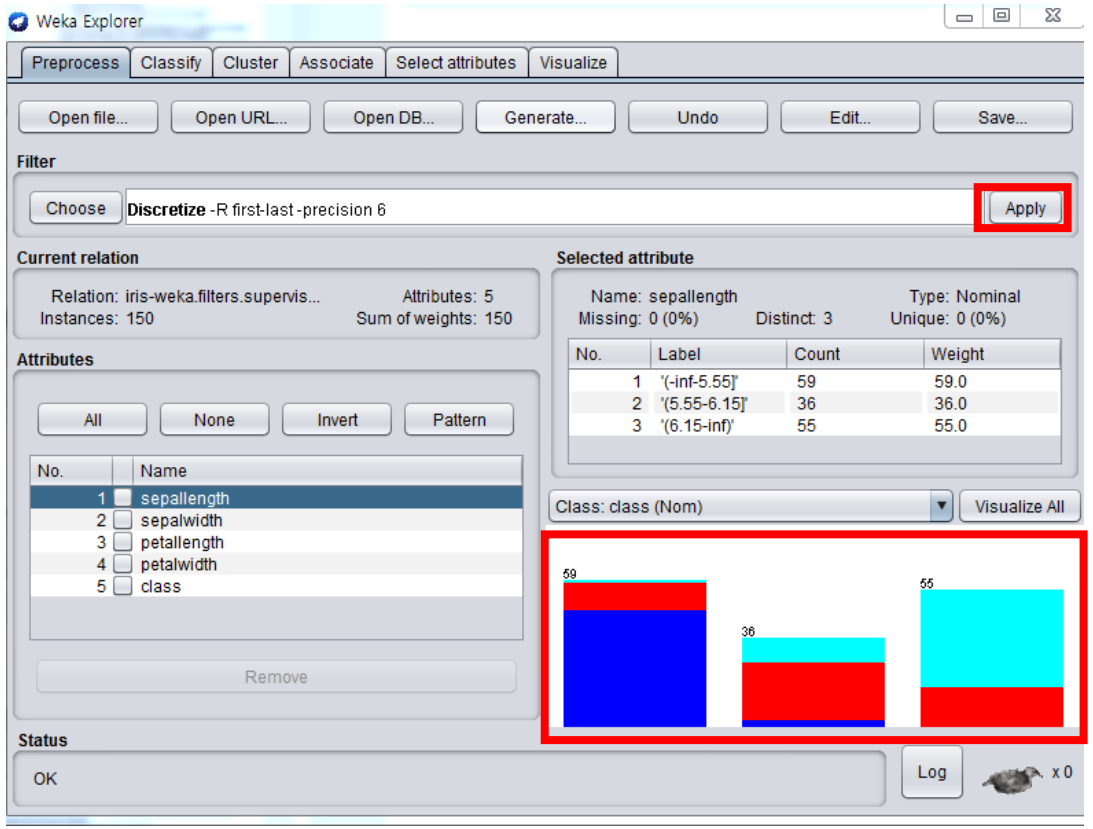
Clicking "Visualize All" button shows overall data distributions.

Weka: Data Preprocessing



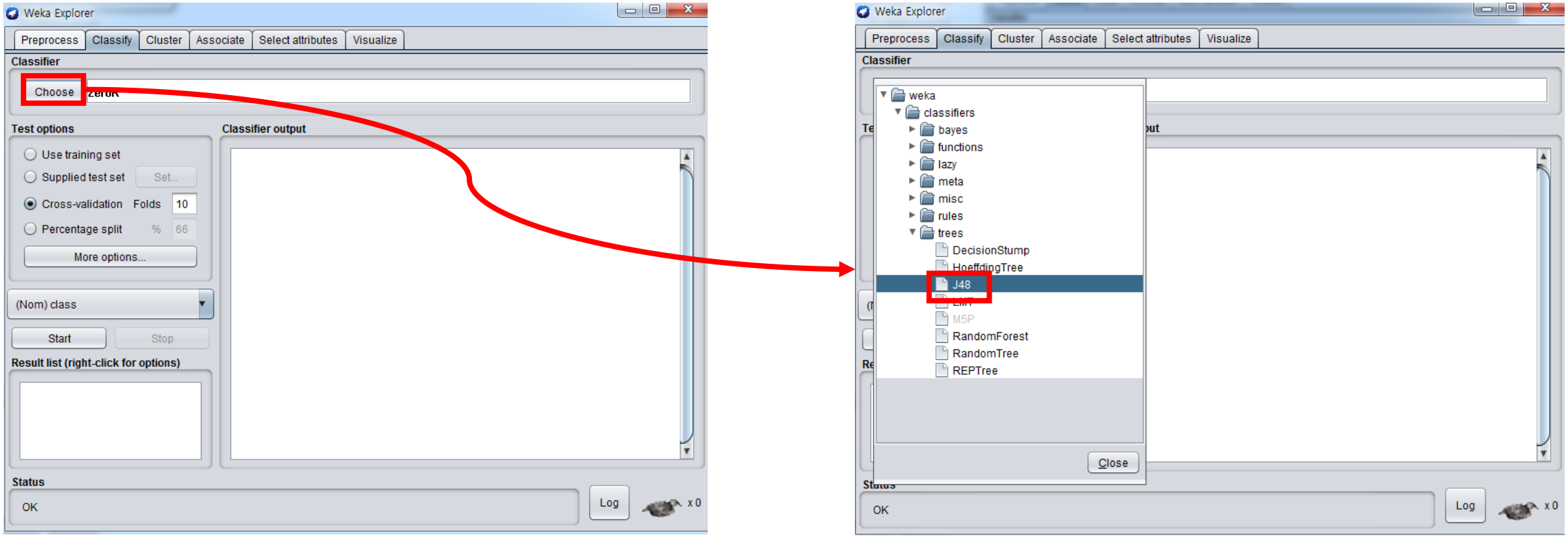
If you want to preprocess the given data set,
then clicking "Choose" button serves several data preprocessing methods.

Weka: Data Preprocessing



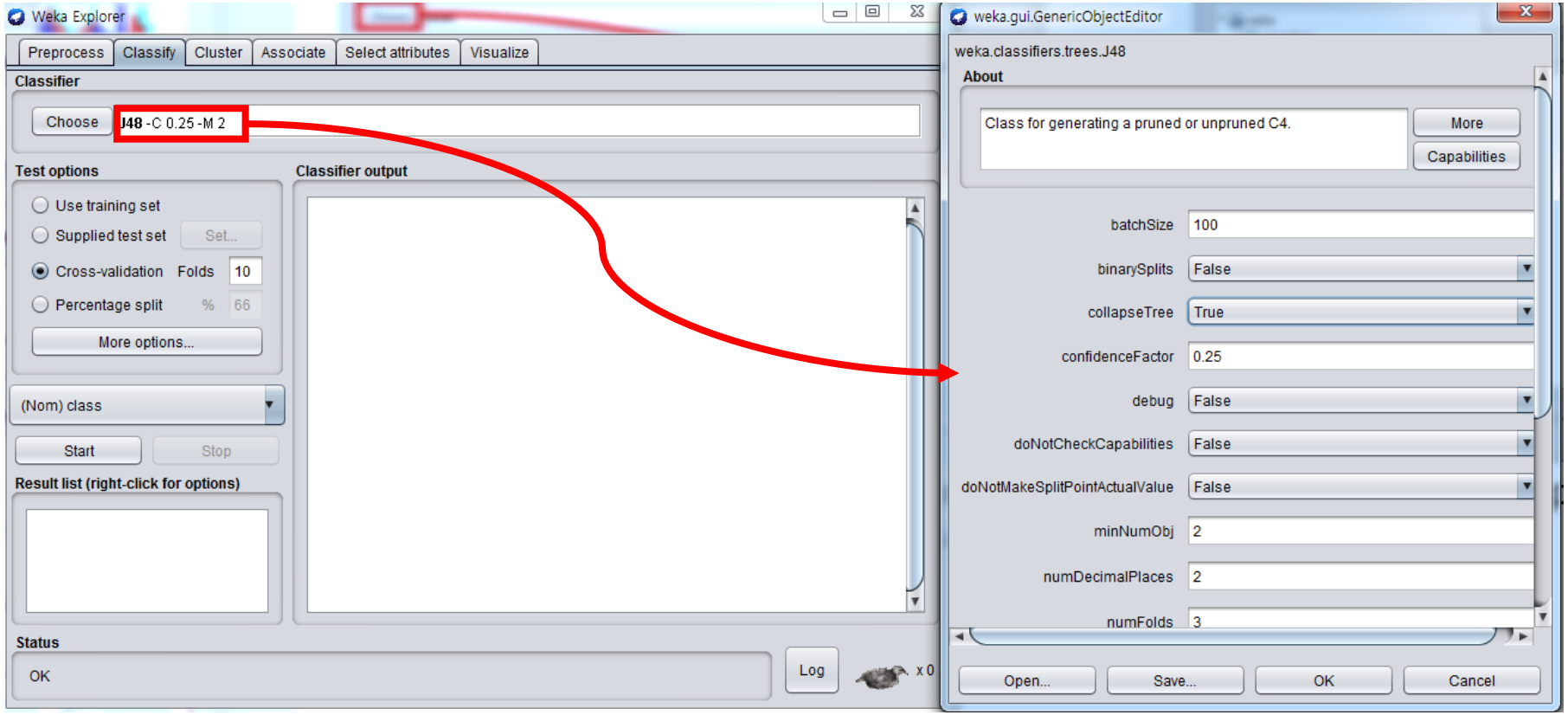
Clicking "Apply" button shows applied data set.

Weka: Classifier



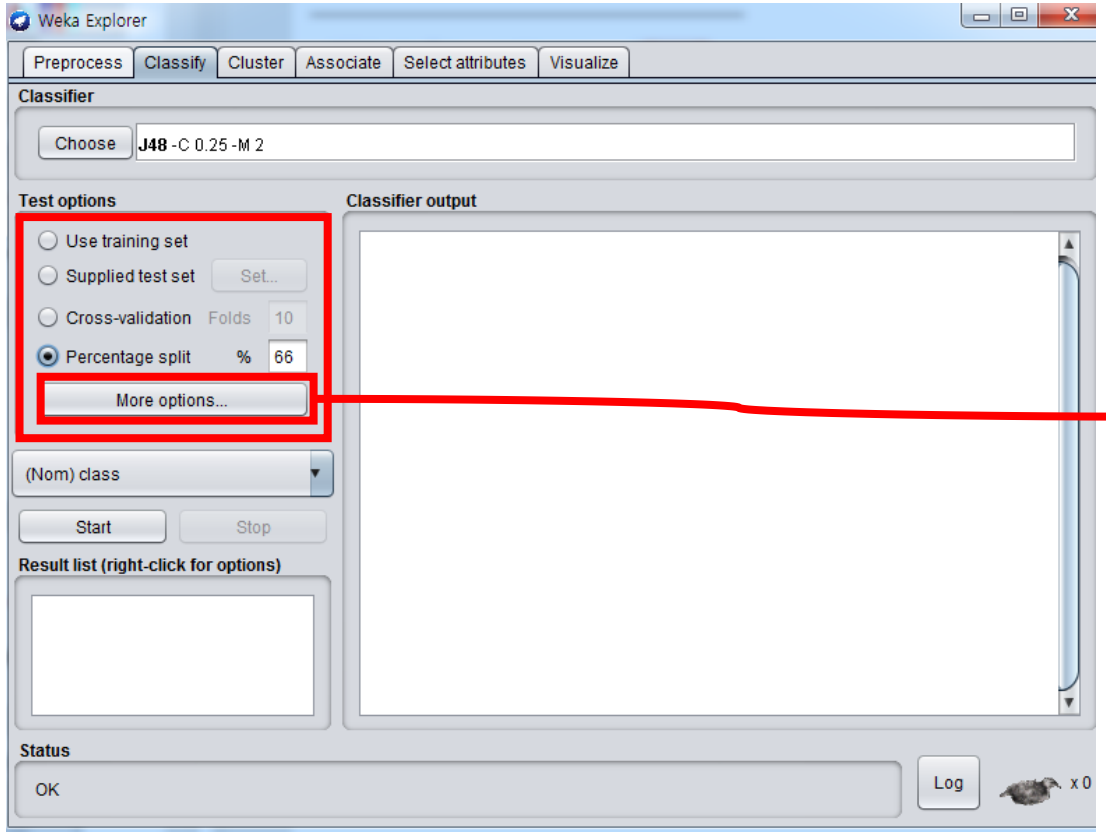
Weka provides several classifiers, for example, decision tree, and multilayer perceptron and so on. Clicking "Choose" button will show you lots of classifiers.

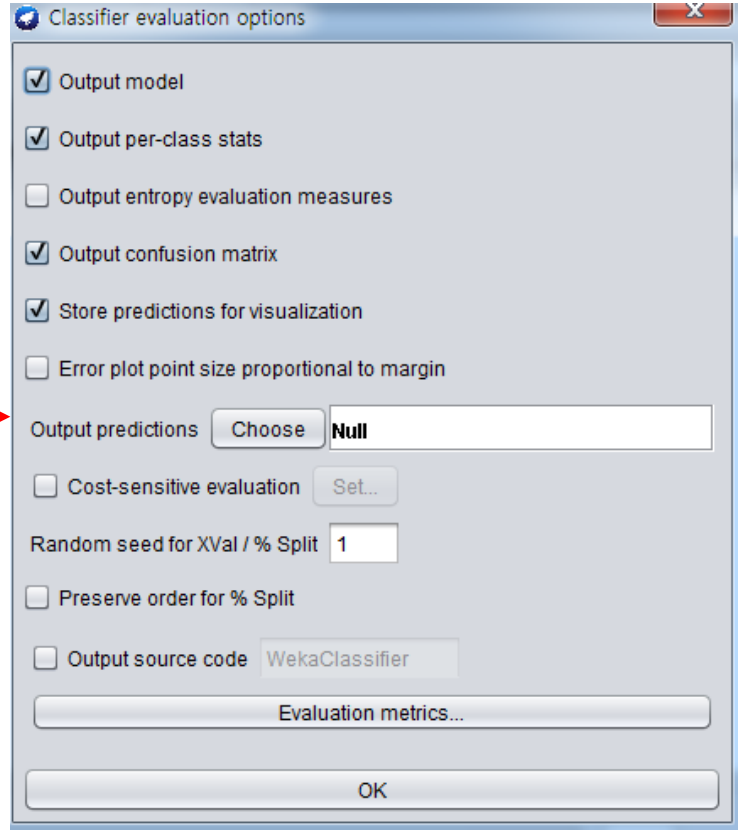
Weka: Classifier



Clicking the above red mark shows detail options.
You can set the details that you want to apply the given classifier.

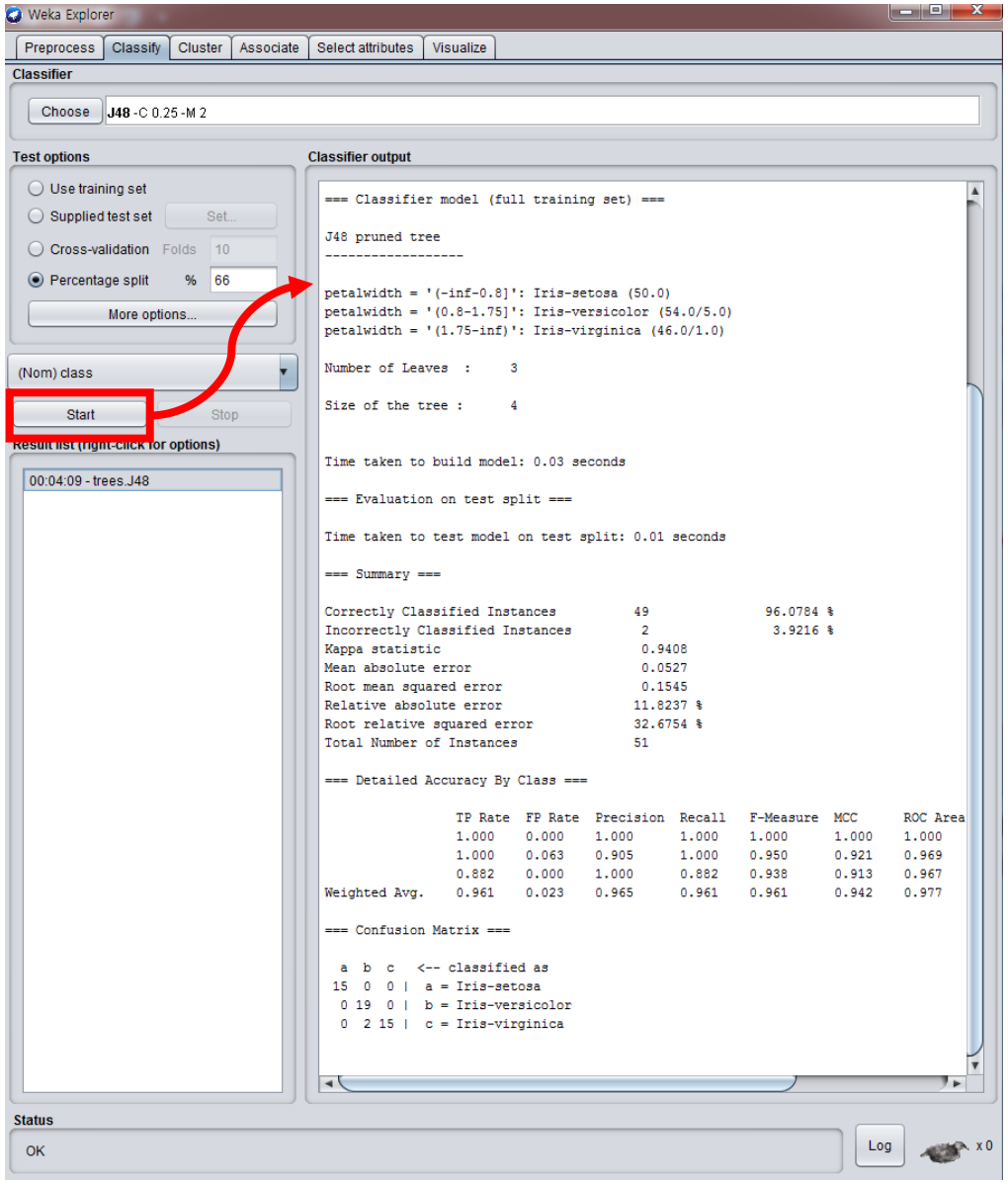
Weka: Classifier





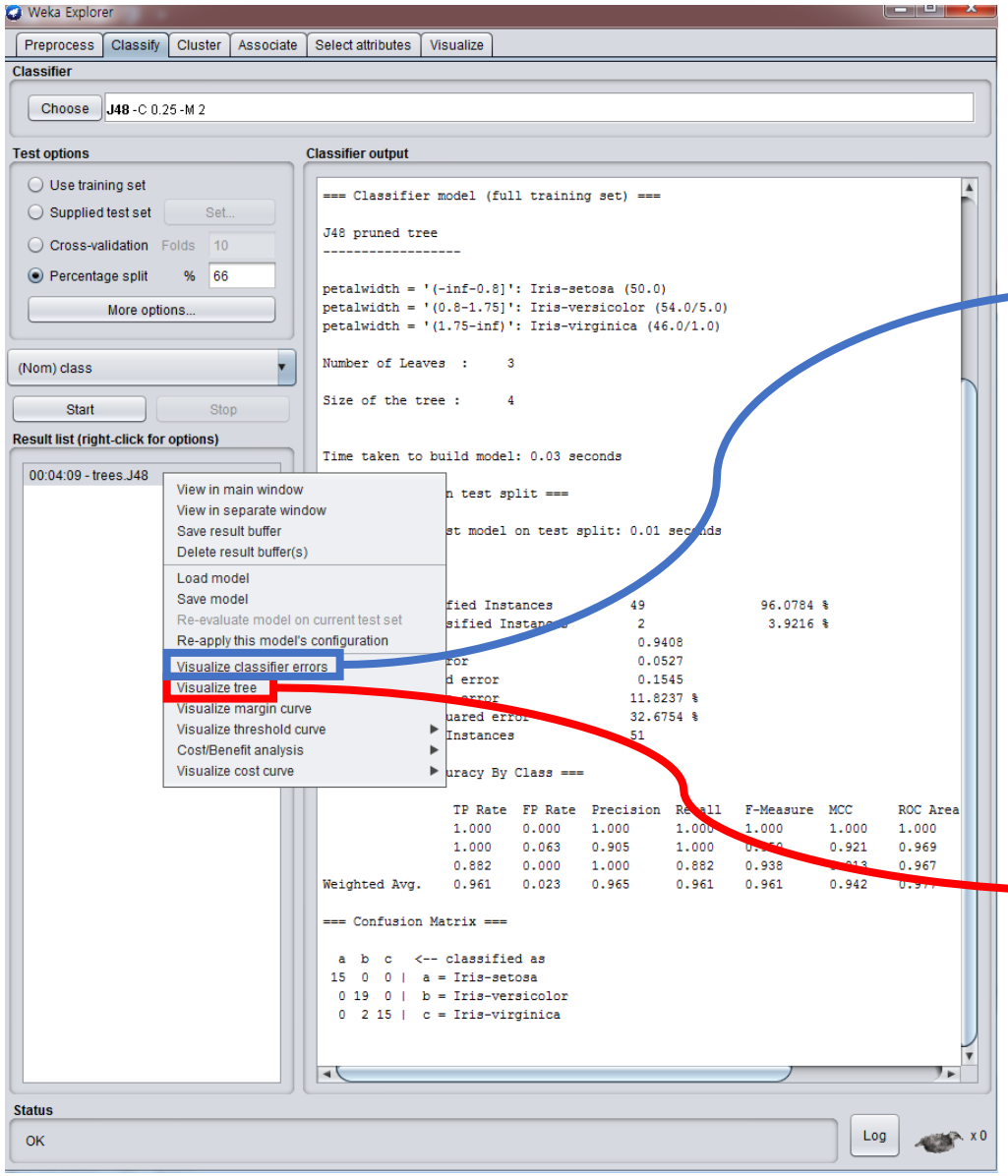
When training the classifier, it provides test option using the given training data.
If you want to set more details, than clicking "More options" derives you detail setting window.

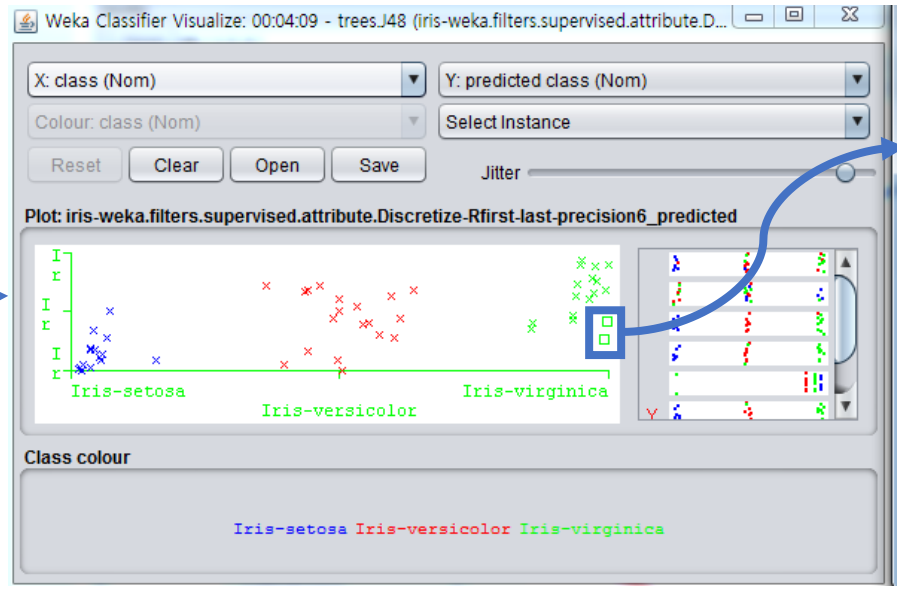
Weka: Classifier

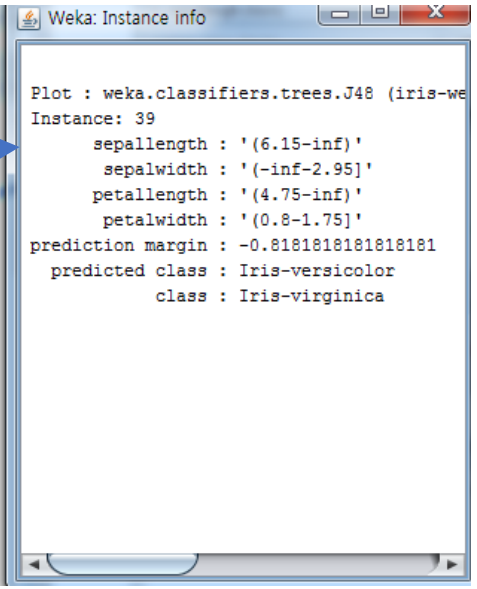


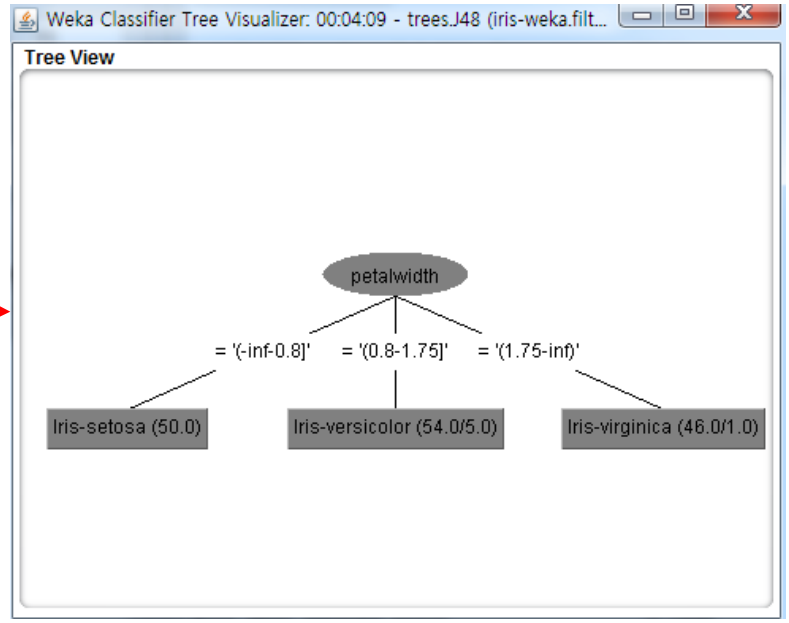
Clicking "Start" button runs the algorithm and prints options (you sat before), processing, and results.

Weka: Classifier









Thanks-