Practical:-1

Aim:-Study of Data Mining Tool – WEKA

1. Download Weka and Install:

I. Go to http://www.cs.waikato.ac.nz/ml/weka

II. Click the *Download and install* button

III. Choose which one to download:

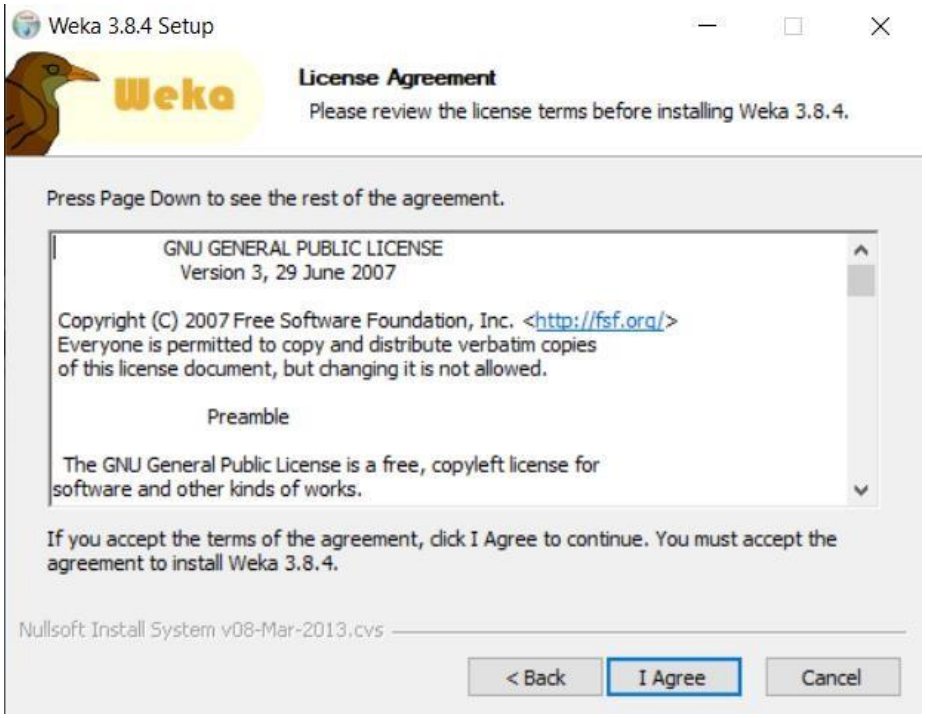
   a. the “stable” version (not the “developer” version)

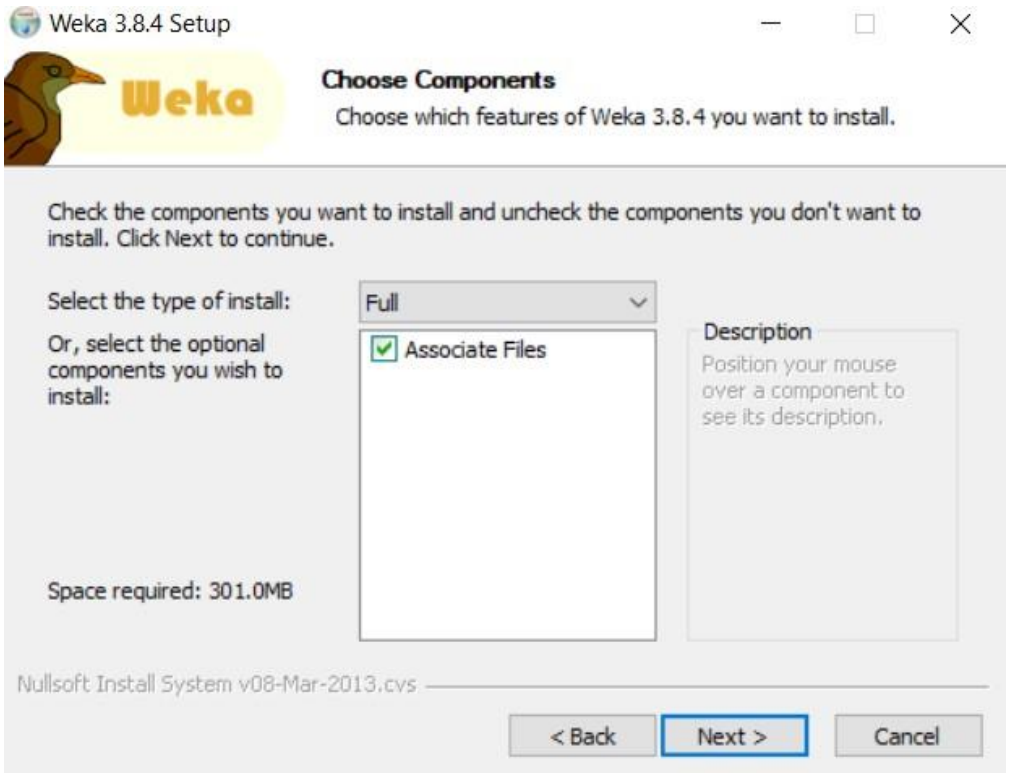
   b. the appropriate version for your computer; Windows, Mac OS, or Linux

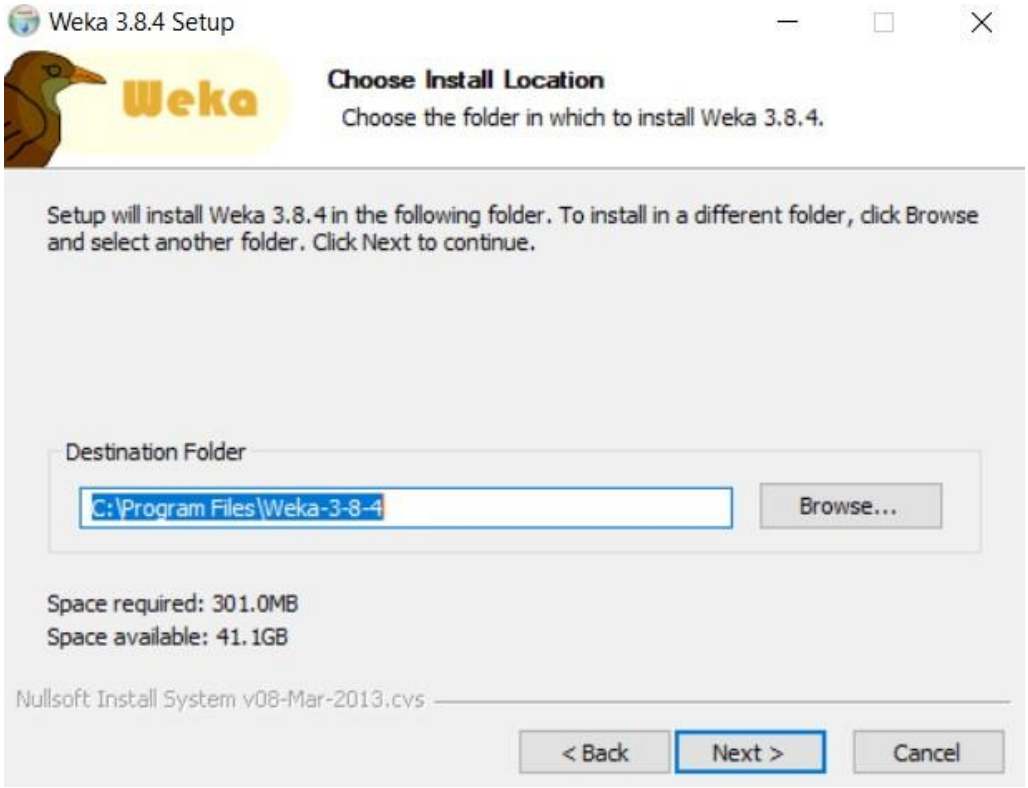
Once it’s downloaded, Ian opens it to get a standard setup “wizard”.

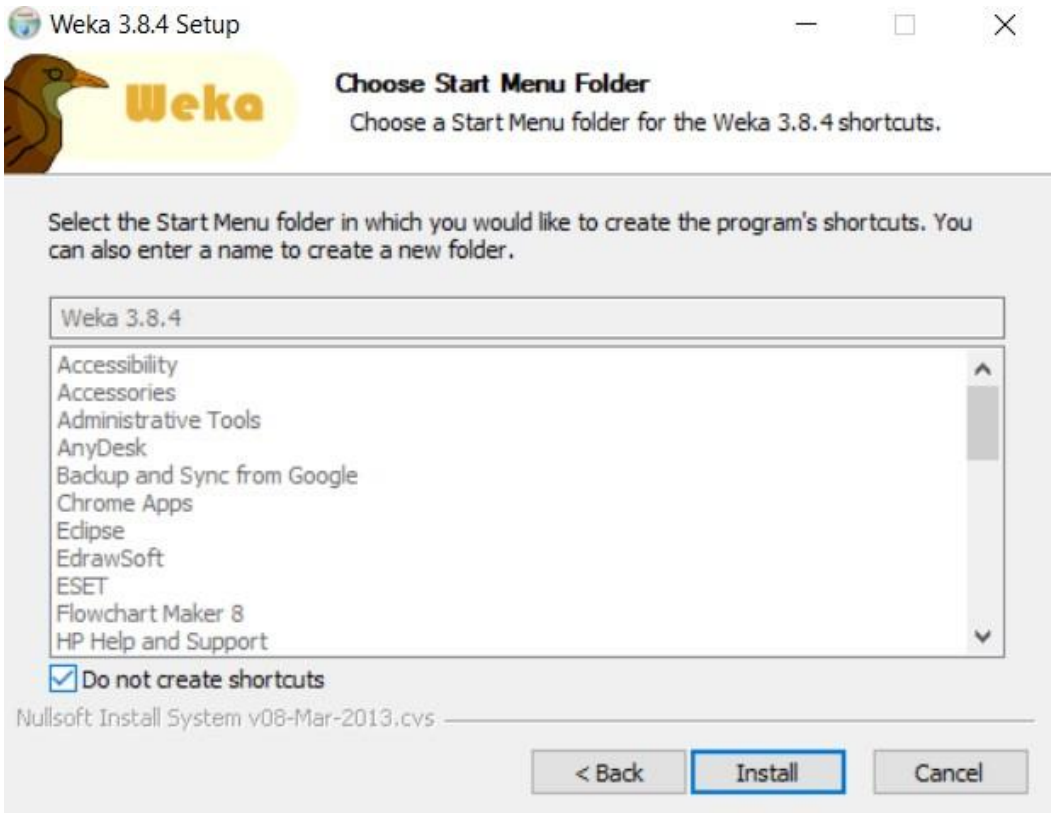
IV. Just keep clicking “Next”! Install it in the default place – and remember the name of that place!

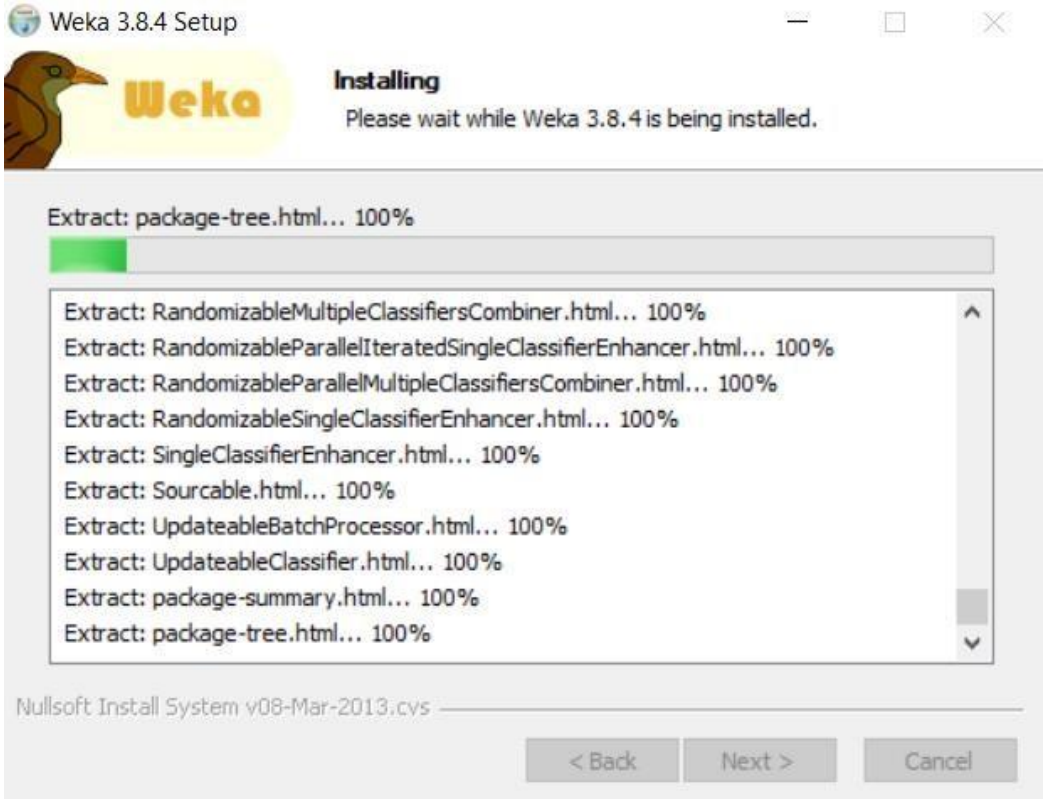

Weka 3.8.4 Setup
Welcome to the Weka 3.8.4 Setup Wizard
This wizard will guide you through the installation of Weka 3.8.4.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

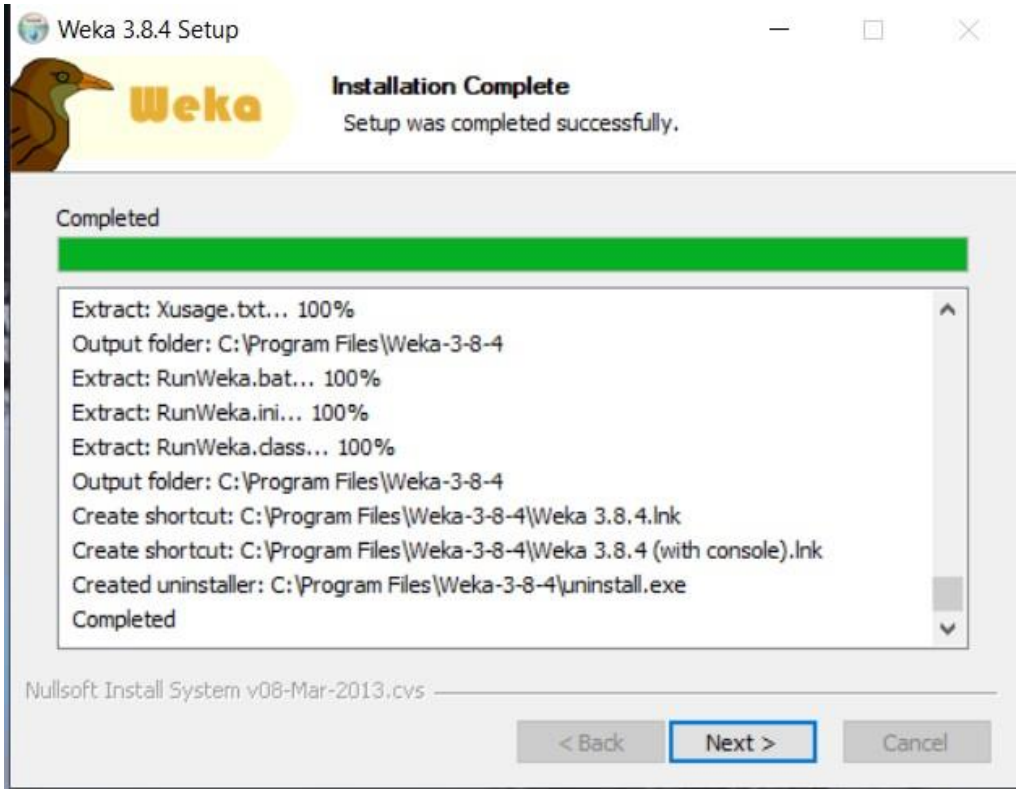

Weka 3.8.4 Setup
Weka
License Agreement
Please review the license terms before installing Weka 3.8.4.
Press Page Down to see the rest of the agreement.
GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007
Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.
Preamble
The GNU General Public License is a free, copyleft license for
software and other kinds of works.
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Weka 3.8.4.
Nullsoft Install System v08-Mar-2013.cvs
< Back
I Agree
Cancel

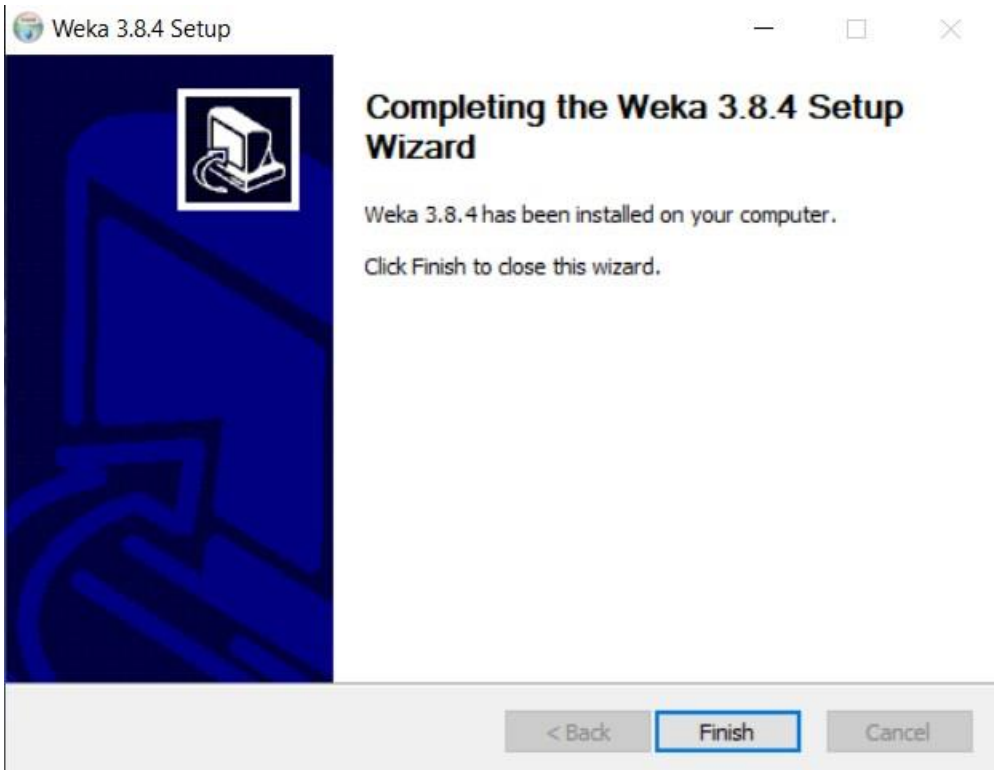

Weka 3.8.4 Setup
Weka
Choose Components
Choose which features of Weka 3.8.4 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select the type of install:
Full
Or, select the optional components you wish to install:
Associate Files
Description
Position your mouse over a component to see its description.
Space required: 301.0MB
Nullsoft Install System v08-Mar-2013.cvs
< Back
Next >
Cancel


Weka 3.8.4 Setup
Weka
Choose Install Location
Choose the folder in which to install Weka 3.8.4.
Setup will install Weka 3.8.4 in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Program Files\Weka-3-8-4
Browse...
Space required: 301.0MB
Space available: 41.1GB
Nullsoft Install System v08-Mar-2013.cvs
< Back
Next >
Cancel


Weka 3.8.4 Setup
Weka
Choose Start Menu Folder
Choose a Start Menu folder for the Weka 3.8.4 shortcuts.
Select the Start Menu folder in which you would like to create the program's shortcuts. You can also enter a name to create a new folder.
Weka 3.8.4
Accessibility
Accessories
Administrative Tools
AnyDesk
Backup and Sync from Google
Chrome Apps
Eclipse
EdrawSoft
ESET
Flowchart Maker 8
HP Help and Support
Do not create shortcuts
Nullsoft Install System v08-Mar-2013.cvs
< Back
Install
Cancel


Weka 3.8.4 Setup
Weka
Installing
Please wait while Weka 3.8.4 is being installed.
Extract: package-tree.html... 100%
Extract: RandomizableMultipleClassifiersCombiner.html... 100%
Extract: RandomizableParallelIteratedSingleClassifierEnhancer.html... 100%
Extract: RandomizableParallelMultipleClassifiersCombiner.html... 100%
Extract: RandomizableSingleClassifierEnhancer.html... 100%
Extract: SingleClassifierEnhancer.html... 100%
Extract: Sourcable.html... 100%
Extract: UpdateableBatchProcessor.html... 100%
Extract: UpdateableClassifier.html... 100%
Extract: package-summary.html... 100%
Extract: package-tree.html... 100%
Nullsoft Install System v08-Mar-2013.cvs
< Back
Next >
Cancel

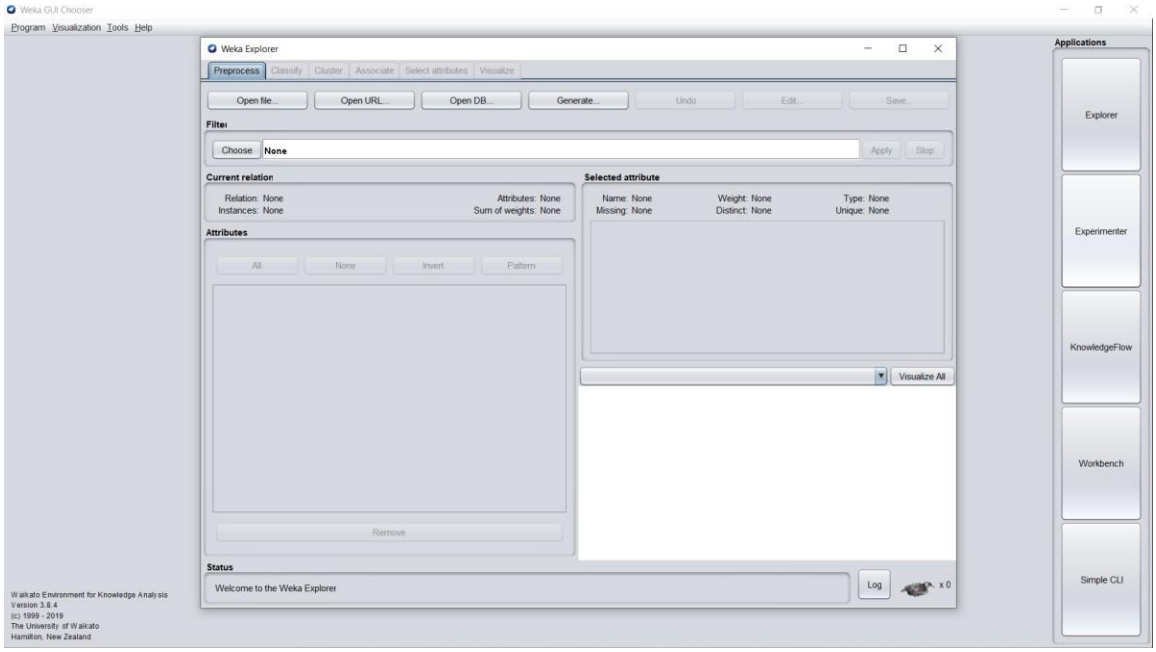

Weka 3.8.4 Setup
Weka
Installation Complete
Setup was completed successfully.
Completed
Extract: Xusage.txt... 100%
Output folder: C:\Program Files\Weka-3-8-4
Extract: RunWeka.bat... 100%
Extract: RunWeka.ini... 100%
Extract: RunWeka.class... 100%
Output folder: C:\Program Files\Weka-3-8-4
Create shortcut: C:\Program Files\Weka-3-8-4\Weka 3.8.4.lnk
Create shortcut: C:\Program Files\Weka-3-8-4\Weka 3.8.4 (with console).lnk
Created uninstaller: C:\Program Files\Weka-3-8-4\uninstall.exe
Completed
Nullsoft Install System v08-Mar-2013.cvs
< Back
Next >
Cancel


Weka 3.8.4 Setup
Completing the Weka 3.8.4 Setup Wizard
Weka 3.8.4 has been installed on your computer.
Click Finish to close this wizard.
< Back
Finish
Cancel

- After installation, uncheck the box that says “Start Weka” and click “Finish”.
- Then go to where Weka was installed and
    - create a shortcut to the Weka program and put it on the desktop for future use.

2. Start Weka:

- Start Weka. This may involve finding it in program launcher or double clicking on the weka.jar file. This will start the Weka GUI Chooser.
- Click the “***Explorer***” button to launch the Weka Explorer.


Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: None
Instances: None
Attributes: None
Sum of weights: None
Selected attribute
Name: None
Missing: None
Weight: None
Distinct: None
Type: None
Unique: None
Attributes
All None Invert Pattern
Remove
Visualize All
Status
Welcome to the Weka Explorer
Log
x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
Waikato Environment for Knowledge Analysis
Version 3.8.4
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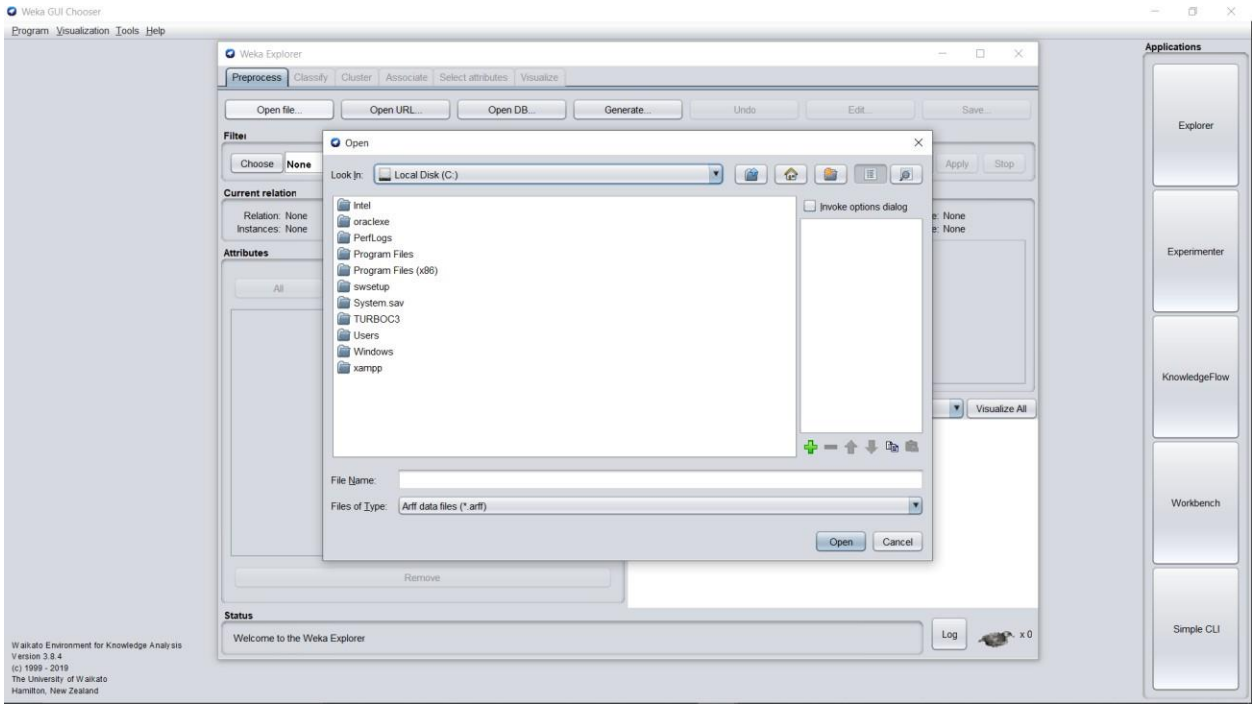
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: None
Instances: None
Attributes
All
Remove
Visualize All
Open
Look In: Local Disk (C:)
Intel
oraclexe
PerfLogs
Program Files
Program Files (x86)
swsetup
System.sav
TURBOC3
Users
Windows
xampp
Invoke options dialog
File Name:
Files of Type: Arff data files (*.arff)
Open
Cancel
Status
Welcome to the Weka Explorer
Log
x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
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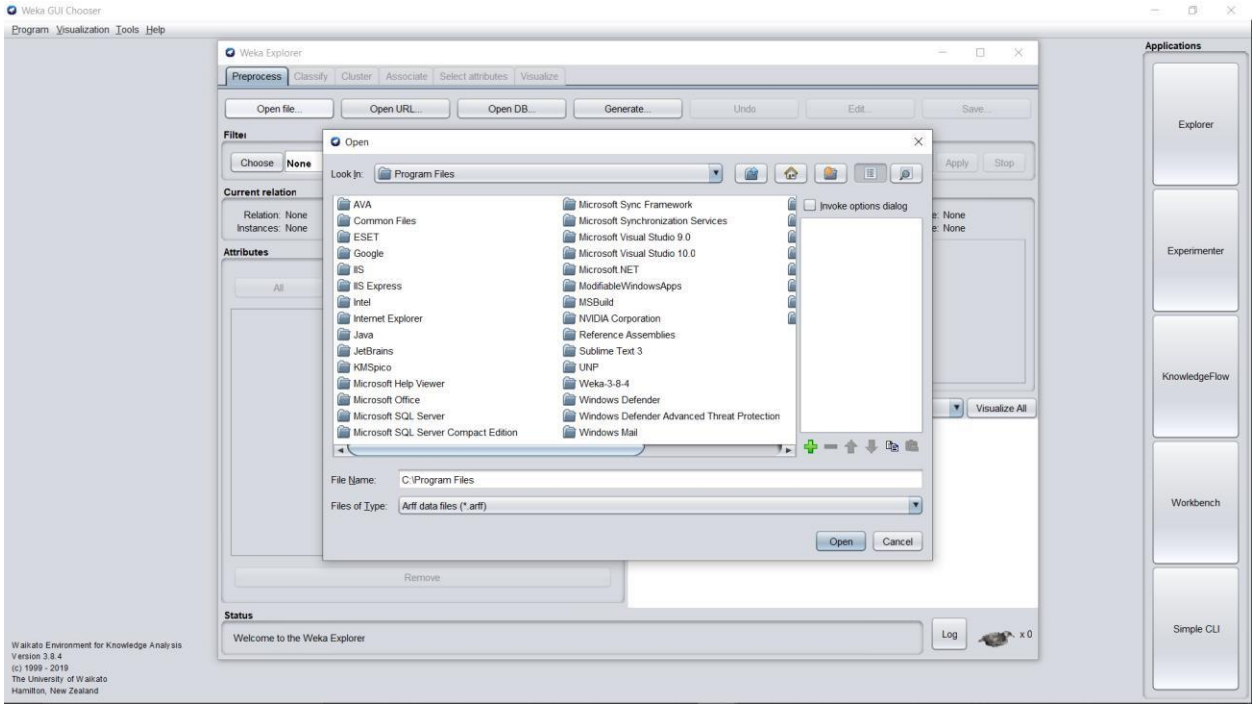
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None
Current relation
Relation: None
Instances: None
Attributes
All
Remove
Open
Look In: Program Files
AVA
Common Files
ESET
Google
IIS
IIS Express
Intel
Internet Explorer
Java
JetBrains
KMSpico
Microsoft Help Viewer
Microsoft Office
Microsoft SQL Server
Microsoft SQL Server Compact Edition
Microsoft Sync Framework
Microsoft Synchronization Services
Microsoft Visual Studio 9.0
Microsoft Visual Studio 10.0
Microsoft.NET
ModifiableWindowsApps
MSBuild
NVIDIA Corporation
Reference Assemblies
Sublime Text 3
UNP
Weka-3-8-4
Windows Defender
Windows Defender Advanced Threat Protection
Windows Mail
Invoke options dialog
File Name: C:\Program Files
Files of Type: Arff data files (*.arff)
Open Cancel
Apply Stop
Visualize All
Status
Welcome to the Weka Explorer
Log x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
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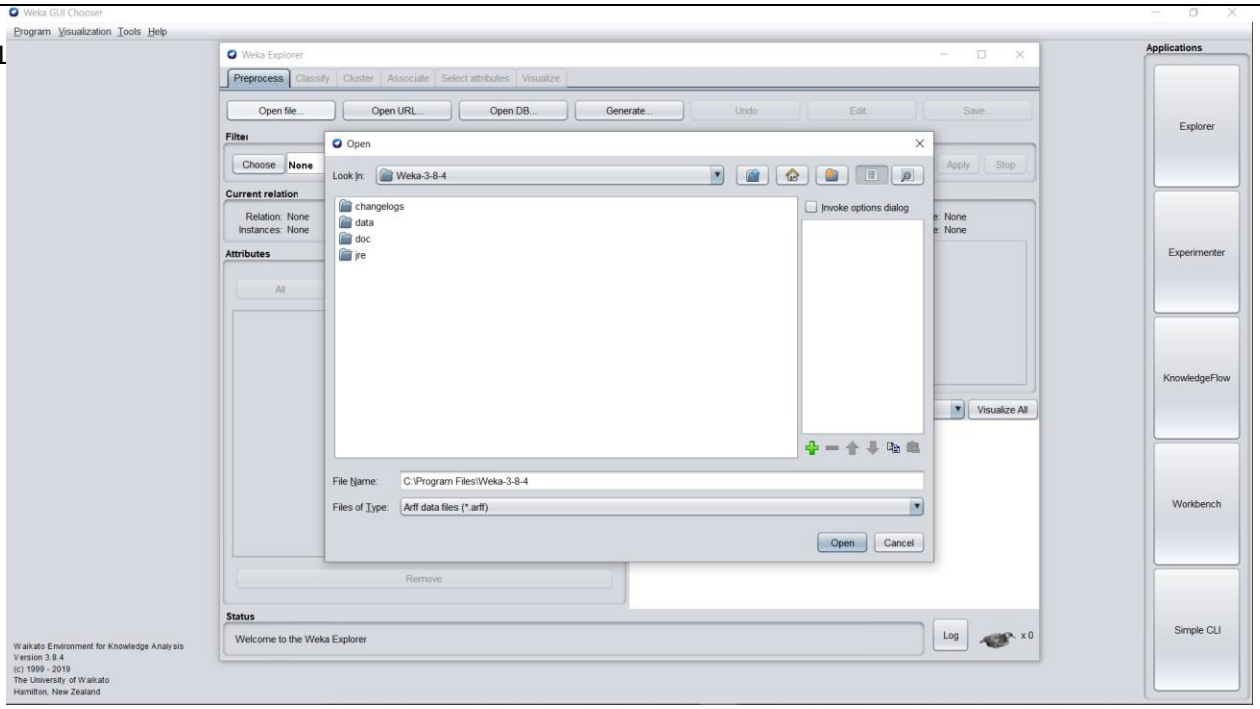
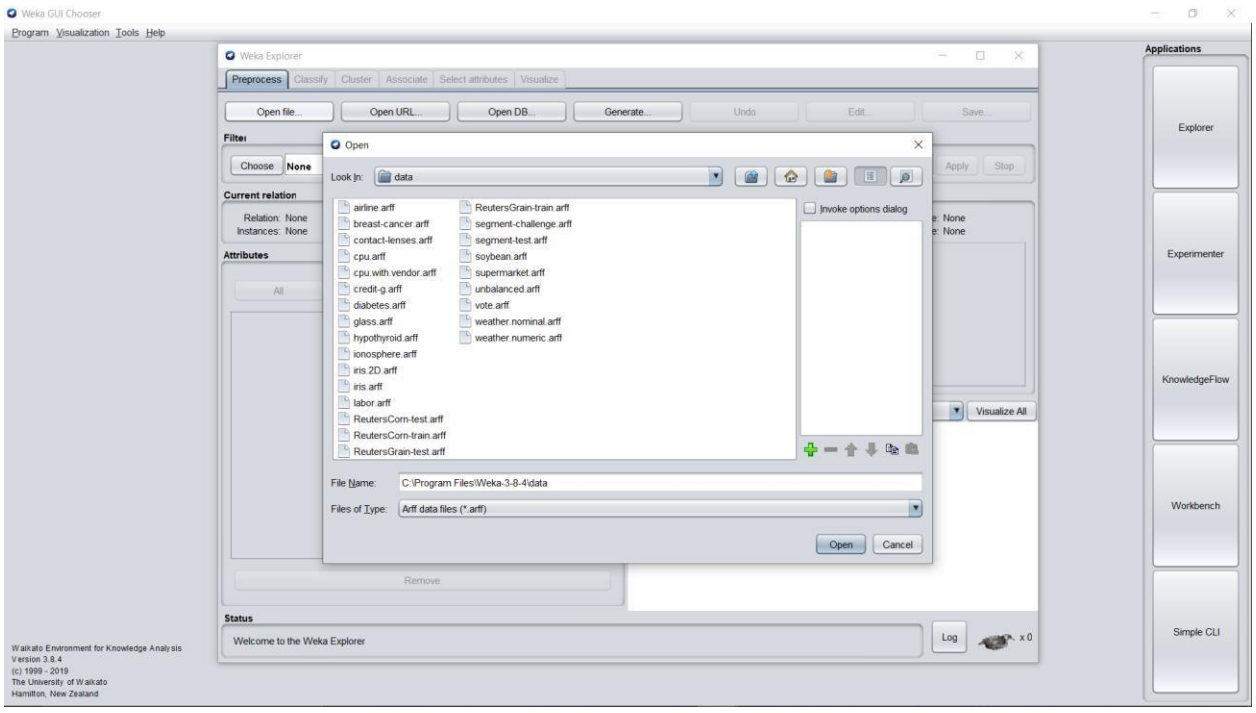


3. <u>Open the data/iris.arff Dataset:</u>

- Click the "***Open file…***" button to open a data set and double click on the "***data***" directory.
- Weka provides a number of small common machine learning datasets that you can use to practice on.
- Select the "***iris.arff***" file to load the Iris dataset.


Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: None
Instances: None
Attributes
All
Visualize All
Remove
Status
Welcome to the Weka Explorer
Log x 0
Open
Look In: data
airline.arff
breast-cancer.arff
contact-lenses.arff
cpu.arff
cpu.with.vendor.arff
credit-g.arff
diabetes.arff
glass.arff
hypothyroid.arff
ionosphere.arff
iris.2D.arff
iris.arff
labor.arff
ReutersCorn-test.arff
ReutersCorn-train.arff
ReutersGrain-test.arff
ReutersGrain-train.arff
segment-challenge.arff
segment-test.arff
soybean.arff
supermarket.arff
unbalanced.arff
vote.arff
weather.nominal.arff
weather.numeric.arff
Invoke options dialog
File Name: C:\Program Files\Weka-3-8-4\data
Files of Type: Arff data files (*.arff)
Open Cancel
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
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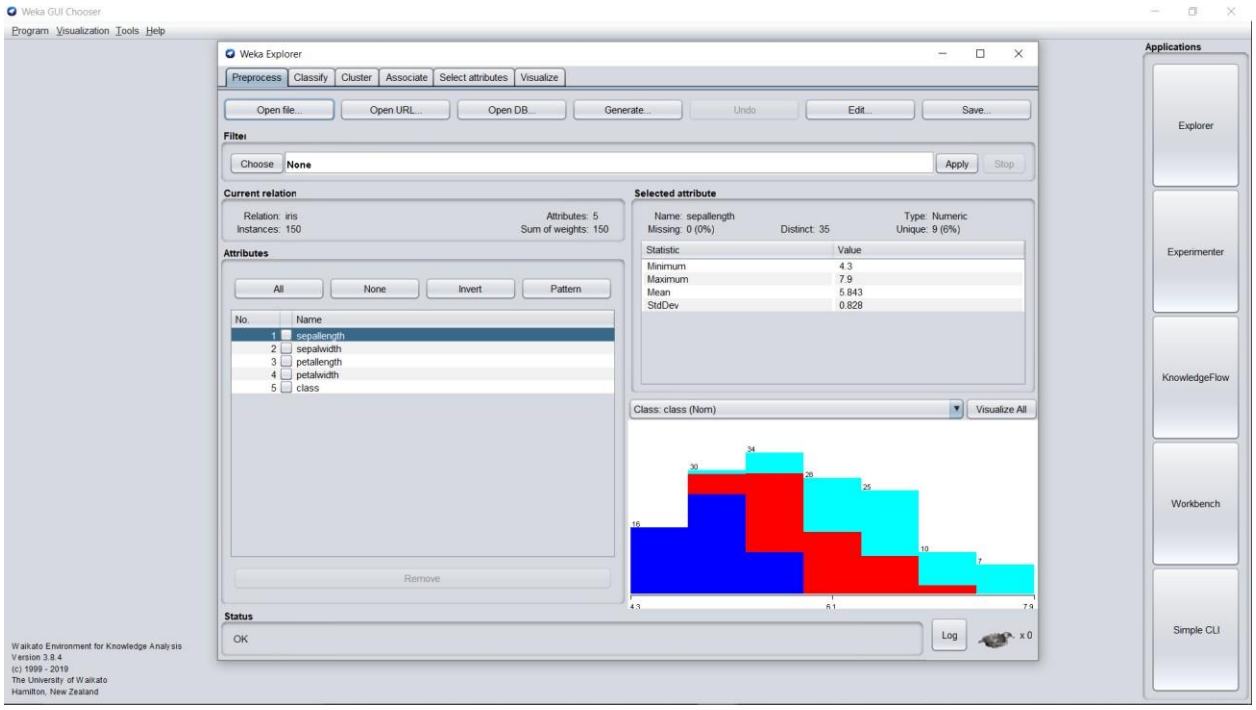
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: iris
Instances: 150
Attributes: 5
Sum of weights: 150
Selected attribute
Name: sepallength
Missing: 0 (0%)
Distinct: 35
Type: Numeric
Unique: 9 (6%)
Statistic Value
Minimum 4.3
Maximum 7.9
Mean 5.843
StdDev 0.828
Attributes
All None Invert Pattern
No. Name
1 sepallength
2 sepalwidth
3 petallength
4 petalwidth
5 class
Class: class (Nom)
Visualize All
Remove
Status
OK
Log x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
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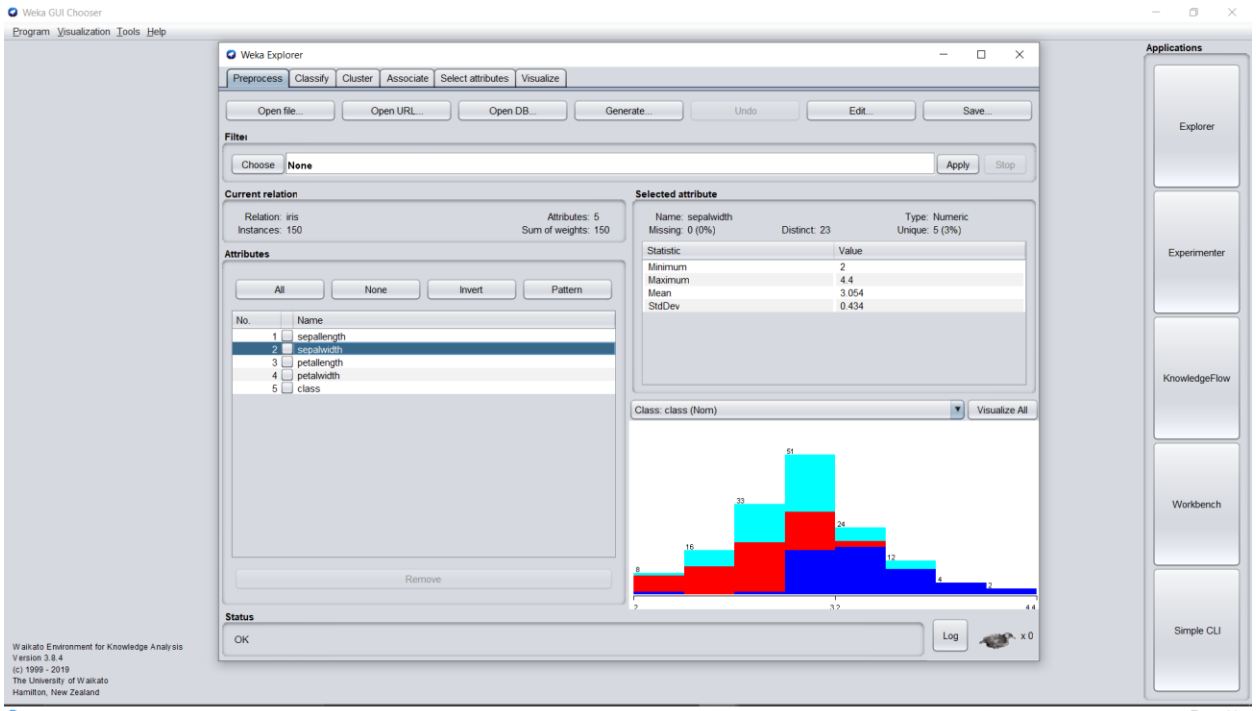
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: iris
Instances: 150
Attributes: 5
Sum of weights: 150
Attributes
All None Invert Pattern
No. Name
1 sepallength
2 sepalwidth
3 petallength
4 petalwidth
5 class
Remove
Selected attribute
Name: sepalwidth
Missing: 0 (0%)
Distinct: 23
Type: Numeric
Unique: 5 (3%)
Statistic Value
Minimum 2
Maximum 4.4
Mean 3.054
StdDev 0.434
Class: class (Nom)
Visualize All
Status
OK
Log
x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
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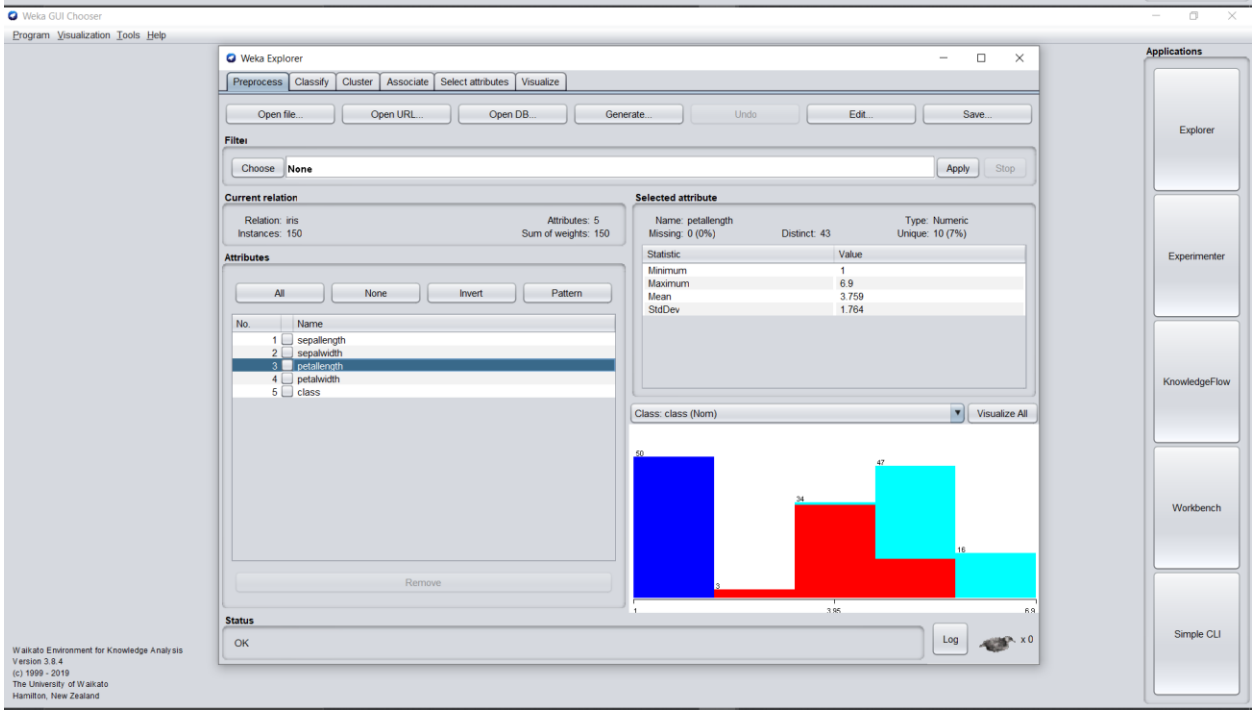
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: iris
Instances: 150
Attributes: 5
Sum of weights: 150
Attributes
All None Invert Pattern
No. Name
1 sepallength
2 sepalwidth
3 petallength
4 petalwidth
5 class
Remove
Selected attribute
Name: petallength
Missing: 0 (0%)
Distinct: 43
Type: Numeric
Unique: 10 (7%)
Statistic Value
Minimum 1
Maximum 6.9
Mean 3.759
StdDev 1.764
Class: class (Nom)
Visualize All
Status
OK
Log
x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
Waikato Environment for Knowledge Analysis
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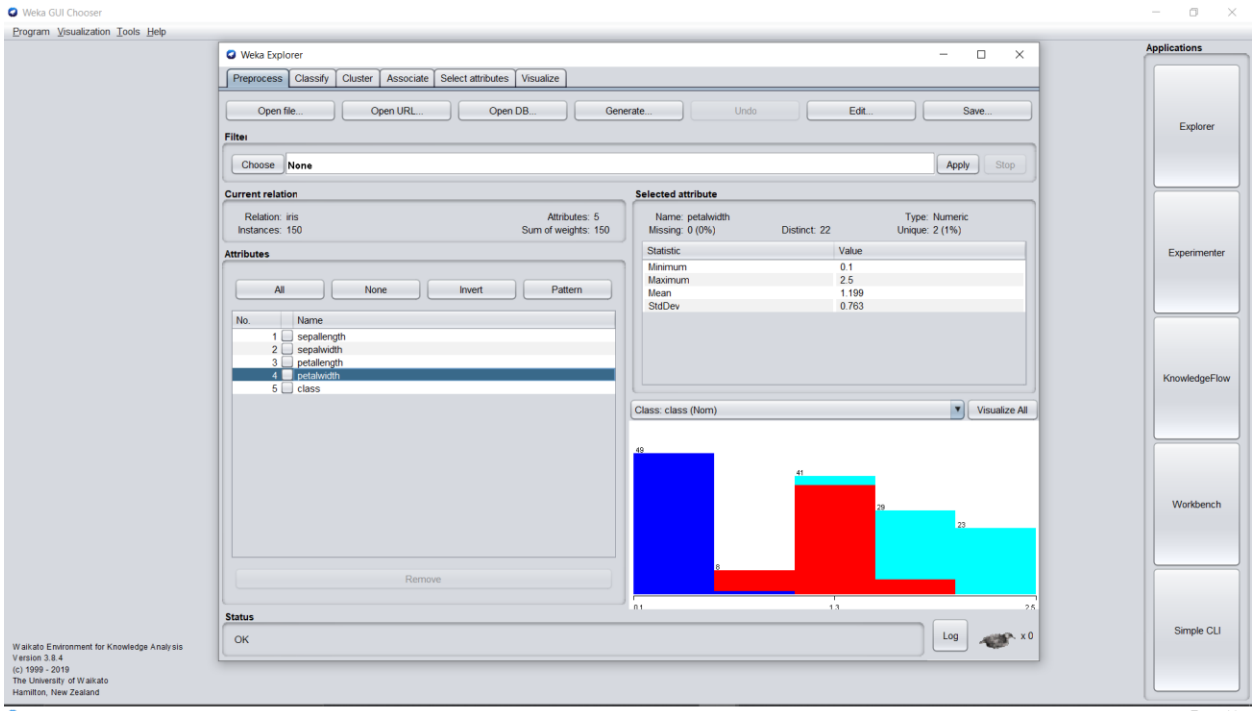
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: iris
Instances: 150
Attributes: 5
Sum of weights: 150
Attributes
All None Invert Pattern
No. Name
1 sepallength
2 sepalwidth
3 petallength
4 petalwidth
5 class
Remove
Selected attribute
Name: petalwidth
Missing: 0 (0%)
Distinct: 22
Type: Numeric
Unique: 2 (1%)
Statistic Value
Minimum 0.1
Maximum 2.5
Mean 1.199
StdDev 0.763
Class: class (Nom)
Visualize All
Status
OK
Log
x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
Waikato Environment for Knowledge Analysis
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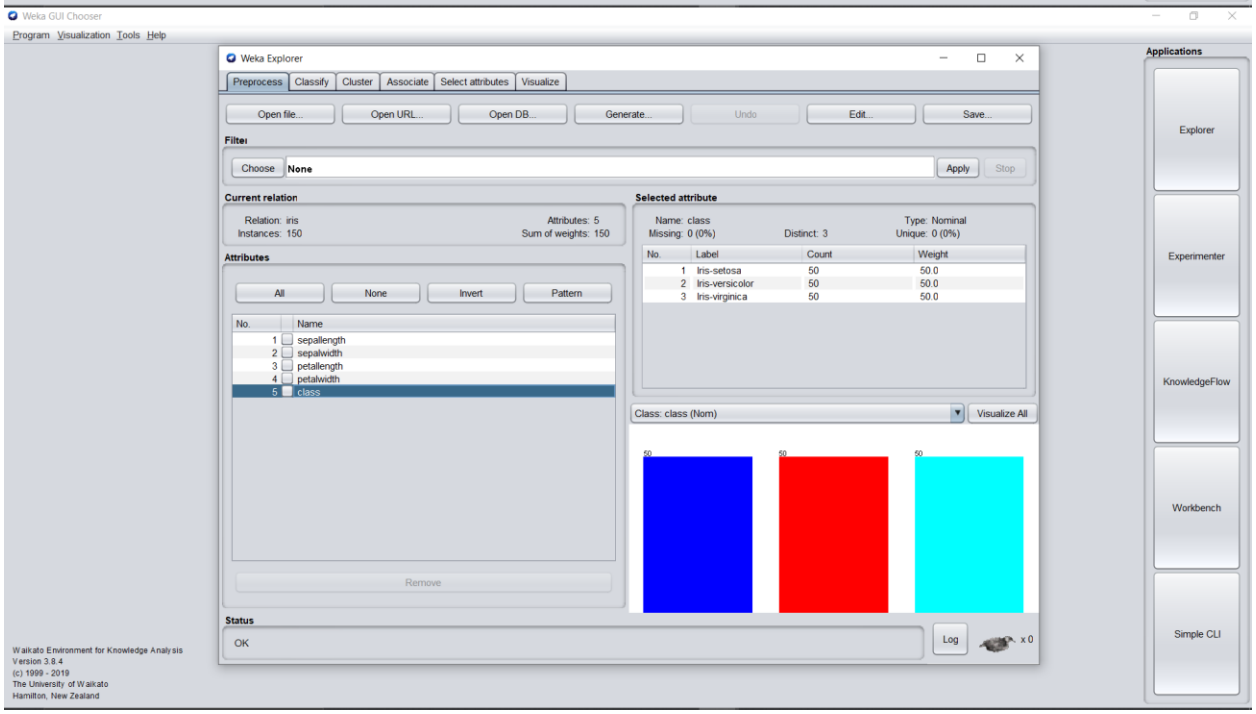
Weka GUI Chooser
Program Visualization Tools Help
Weka Explorer
Preprocess Classify Cluster Associate Select attributes Visualize
Open file... Open URL... Open DB... Generate... Undo Edit... Save...
Filter
Choose None Apply Stop
Current relation
Relation: iris
Instances: 150
Attributes: 5
Sum of weights: 150
Attributes
All None Invert Pattern
No. Name
1 sepallength
2 sepalwidth
3 petallength
4 petalwidth
5 class
Remove
Selected attribute
Name: class
Missing: 0 (0%)
Distinct: 3
Type: Nominal
Unique: 0 (0%)
No. Label Count Weight
1 Iris-setosa 50 50.0
2 Iris-versicolor 50 50.0
3 Iris-virginica 50 50.0
Class: class (Nom)
Visualize All
Status
OK
Log
x 0
Applications
Explorer
Experimenter
KnowledgeFlow
Workbench
Simple CLI
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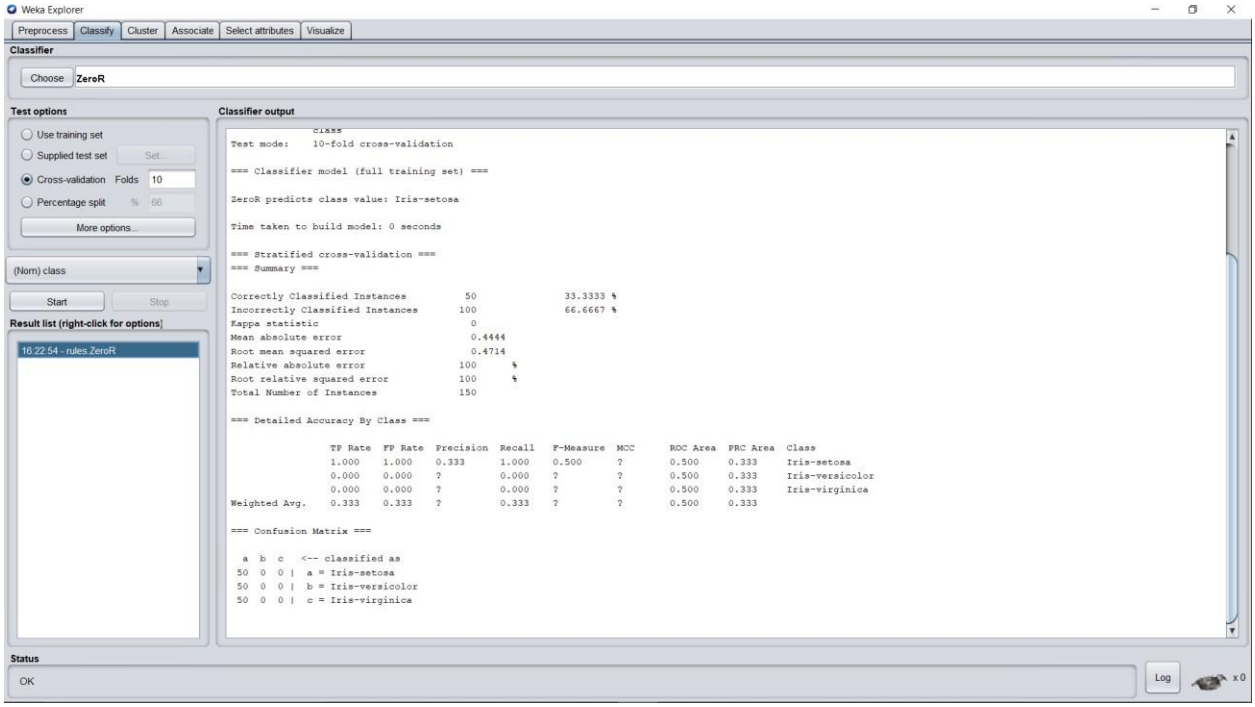
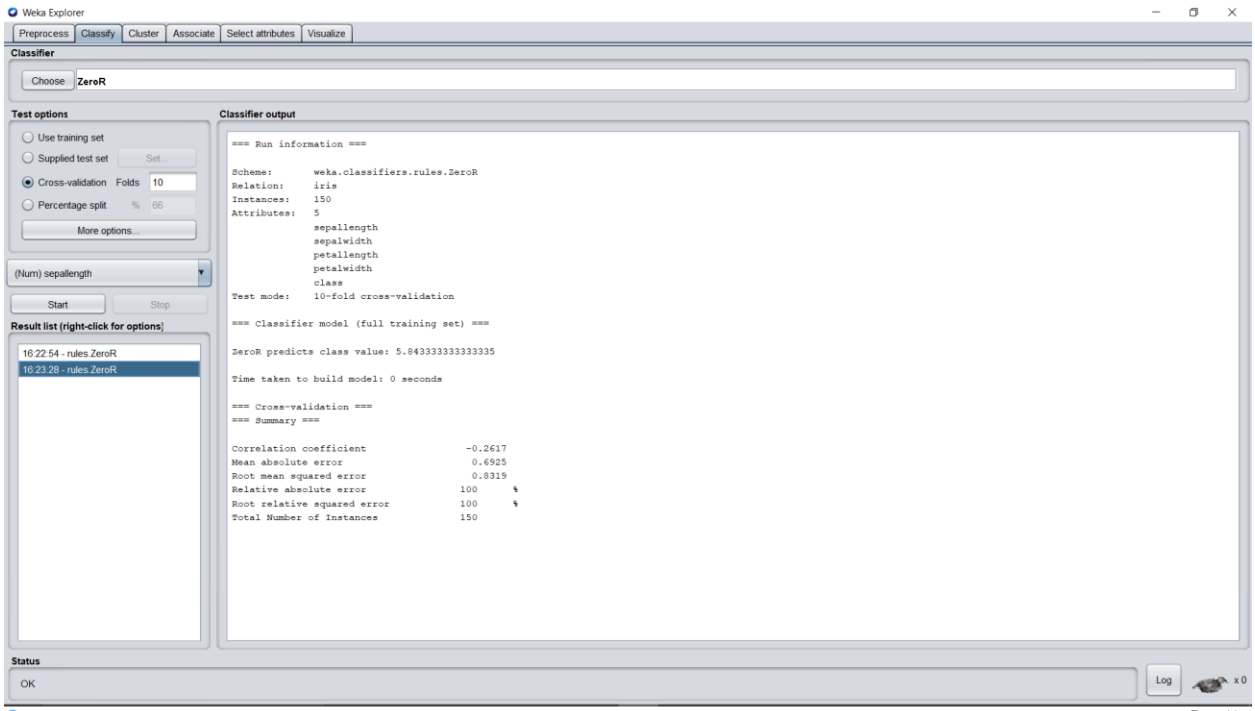
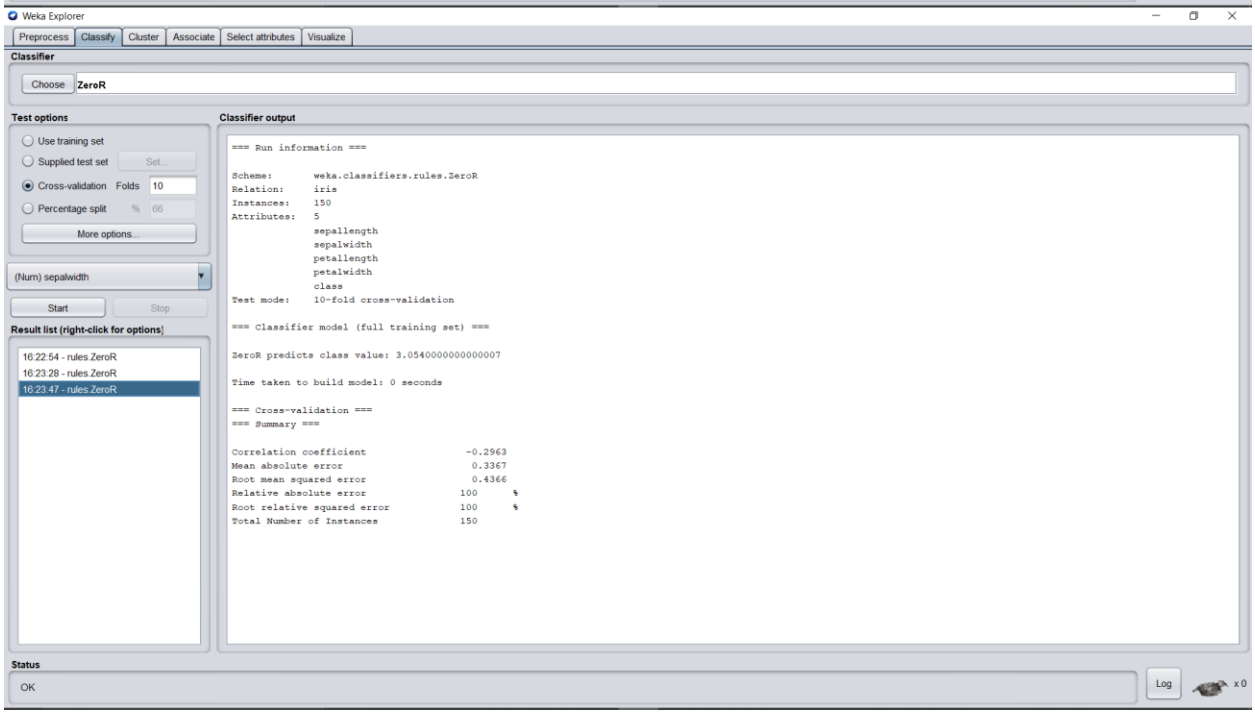
4.Select and Run an Algorithm:

- Now that you have loaded a dataset, it's time to choose a machine learning algorithm to model the problem and make predictions.
- Click the "***Classify***" tab. This is the area for running algorithms against a loaded dataset in Weka.
- You will note that the "***ZeroR***" algorithm is selected by default.
- Click the "***Start***" button to run this algorithm.




Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
ZeroR
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Num) sepallength
Start
Stop
Result list (right-click for options)
16:22:54 - rules.ZeroR
16:23:28 - rules.ZeroR
Classifier output
=== Run information ===
Scheme: weka.classifiers.rules.ZeroR
Relation: iris
Instances: 150
Attributes: 5
sepallength
sepalwidth
petallength
petalwidth
class
Test mode: 10-fold cross-validation
=== Classifier model (full training set) ===
ZeroR predicts class value: 5.843333333333335
Time taken to build model: 0 seconds
=== Cross-validation ===
=== Summary ===
Correlation coefficient -0.2617
Mean absolute error 0.6925
Root mean squared error 0.8319
Relative absolute error 100 %
Root relative squared error 100 %
Total Number of Instances 150
Status
OK
Log
x 0


Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
ZeroR
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Num) sepalwidth
Start
Stop
Result list (right-click for options)
16:22:54 - rules.ZeroR
16:23:28 - rules.ZeroR
16:23:47 - rules.ZeroR
Classifier output
=== Run information ===
Scheme: weka.classifiers.rules.ZeroR
Relation: iris
Instances: 150
Attributes: 5
sepallength
sepalwidth
petallength
petalwidth
class
Test mode: 10-fold cross-validation
=== Classifier model (full training set) ===
ZeroR predicts class value: 3.0540000000000007
Time taken to build model: 0 seconds
=== Cross-validation ===
=== Summary ===
Correlation coefficient -0.2963
Mean absolute error 0.3367
Root mean squared error 0.4366
Relative absolute error 100 %
Root relative squared error 100 %
Total Number of Instances 150
Status
OK
Log
x 0