UNIVERSIDAD NACIONAL DE LOJA

FACULTAD DE LA ENERGÍA, LAS INDUSTRIAS Y LOS RECURSOS NATURALES NO RENOVABLES

CARRERA EN COMPUTACIÓN

1859

PASOS PARA LA APLICACIÓN DEL ALGORITMO DECISION STUMP EN WEKA

Carrera: Ingeniería en Sistemas “A”

Fecha: 6 de febrero de 2022

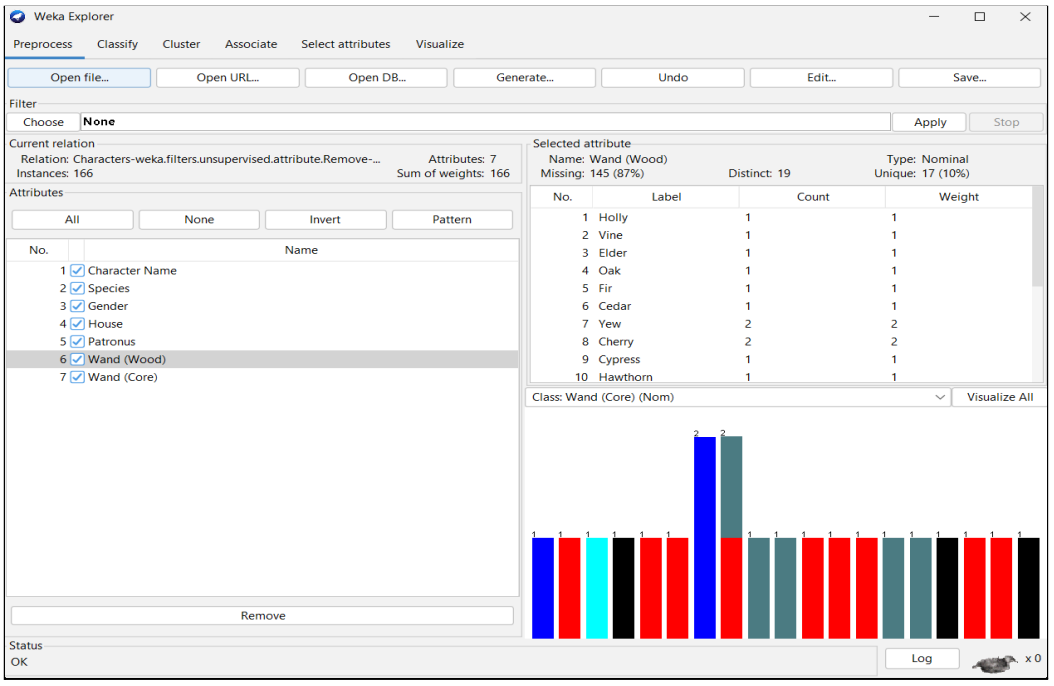
Materia: Inteligencia Artificial

Integrantes:

- Francisco Agreda Sánchez
- Israel Campoverde Peñaherrera
- Eduardo Leon Castillo
- Josué Ortega Jaramillo

Preprocess:

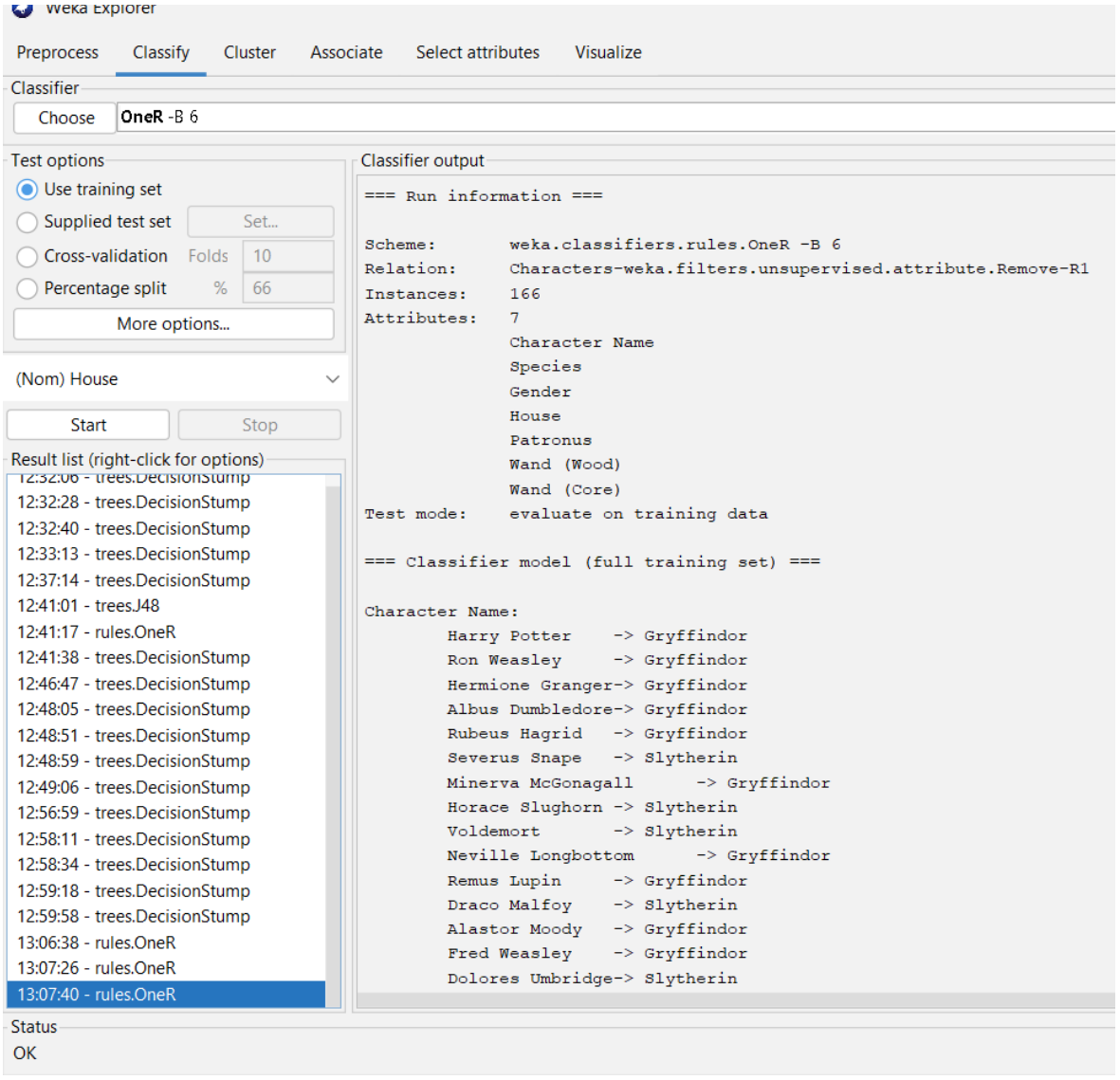
Para abrir el archivo seleccionamos el archivo con extensión .arff**.** Nos mostrará los atributos que consta nuestra base de datos como: Species, Gender, Patronus, Character name, Etc.

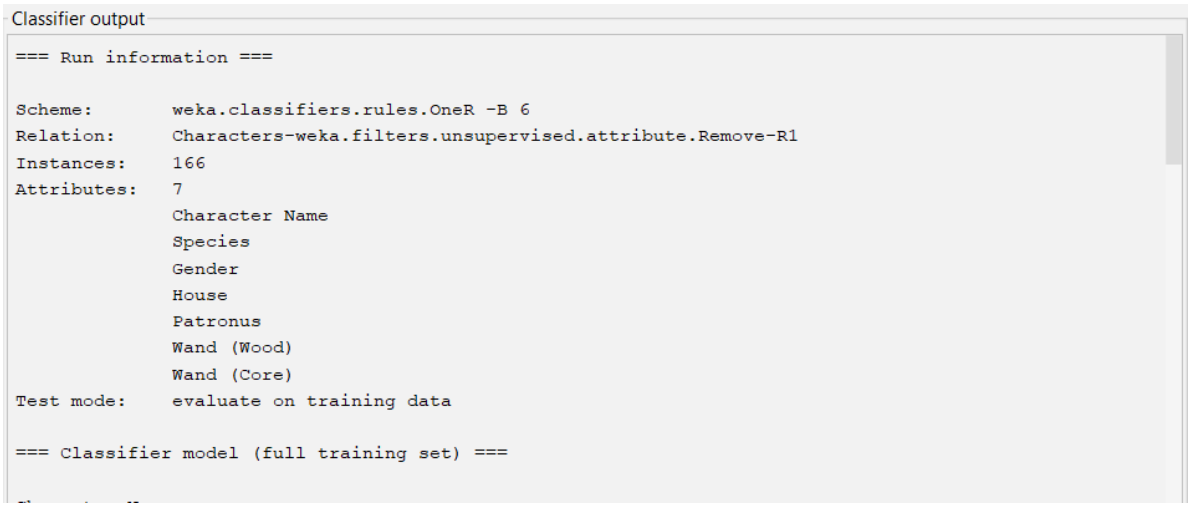


Classification:

Nos permite seleccionar el algoritmo, el cual hemos visto conveniente utilizar el algoritmo **OneR**. Luego en Test options hemos escogido Use training set porque nos permite utilizar todos los registros que se cargaron en WEKA.

El (Nom) House nos ayuda a que el atributo según su clasificación, en este caso estoy escogiendo que haga el proceso de clasificado según las casas.





```
=== Classifier model (full training set) ===

Character Name:
        Harry Potter    -> Gryffindor
        Ron Weasley     -> Gryffindor
        Hermione Granger-> Gryffindor
        Albus Dumbledore-> Gryffindor
        Rubeus Hagrid   -> Gryffindor
        Severus Snape   -> Slytherin
        Minerva McGonagall      -> Gryffindor
        Horace Slughorn -> Slytherin
        Voldemort       -> Slytherin
        Neville Longbottom      -> Gryffindor
        Remus Lupin     -> Gryffindor
        Draco Malfoy    -> Slytherin
        Alastor Moody   -> Gryffindor
        Fred Weasley    -> Gryffindor
        Dolores Umbridge-> Slytherin
        Arthur Weasley  -> Gryffindor
        Cornelius Fudge -> Gryffindor
        Sirius Black    -> Gryffindor
        George Weasley  -> Gryffindor
        Ginny Weasley   -> Gryffindor
        Vernon Dursley  -> Gryffindor
        Bellatrix Lestrange     -> Slytherin
        Lucius Malfoy   -> Slytherin
        Tom Riddle      -> Slytherin
        Luna Lovegood   -> Ravenclaw
        Molly Weasley   -> Gryffindor
        Dobby   -> Gryffindor
        Gilderoy Lockhart       -> Ravenclaw
        Seamus Finnigan -> Gryffindor
```

Classifier output

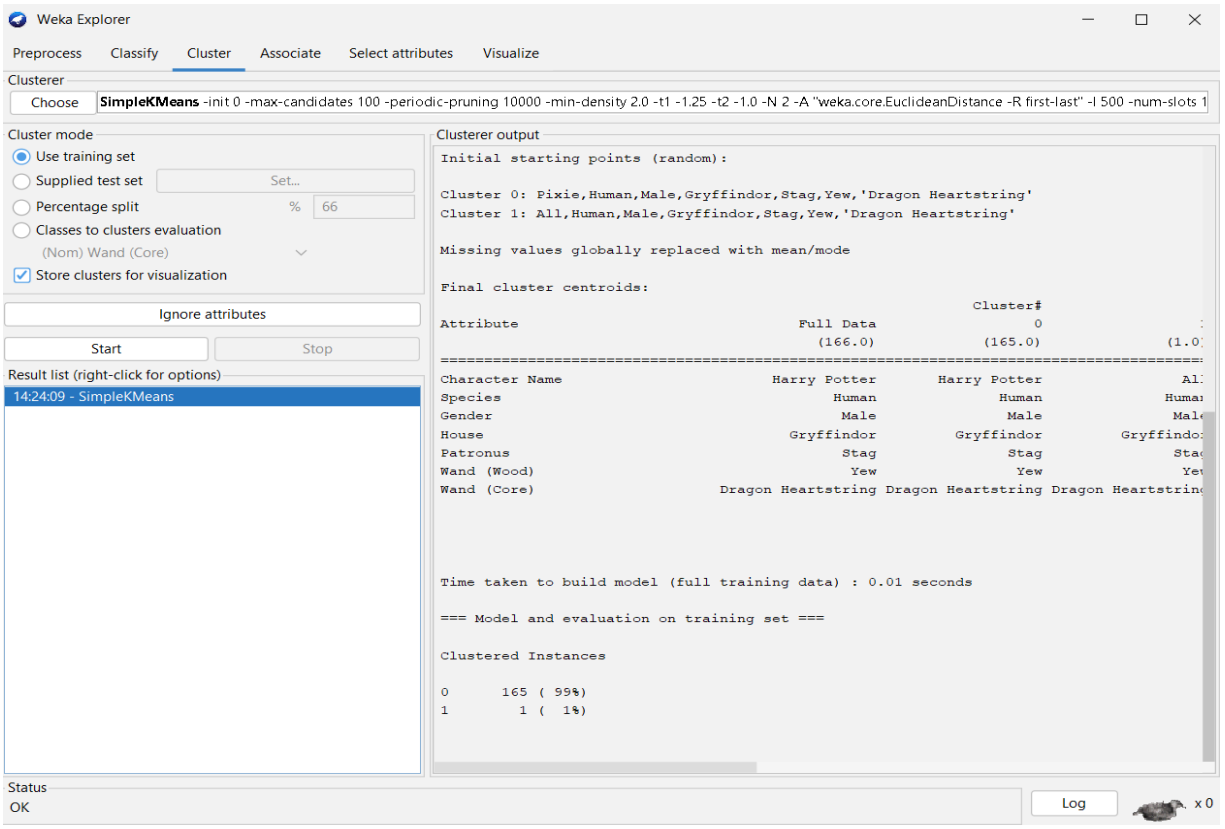
```
Time taken to build model: 0 seconds

=== Evaluation on training set ===

Time taken to test model on training data: 0 seconds

=== Summary ===

Correctly Classified Instances          75               100      %
Incorrectly Classified Instances         0                 0      %
Kappa statistic                          1
Mean absolute error                      0
Root mean squared error                  0
Relative absolute error                  0      %
Root relative squared error              0      %
Total Number of Instances               75
Ignored Class Unknown Instances                 91

=== Detailed Accuracy By Class ===

                 TP Rate  FP Rate  Precision  Recall   F-Measure  MCC      ROC Area  PRC Area  Class
                 1,000    0,000    1,000      1,000    1,000      1,000    0,663     0,254     Gryffind
                 1,000    0,000    1,000      1,000    1,000      1,000    1,000     1,000     Slytheri
                 1,000    0,000    1,000      1,000    1,000      1,000    1,000     1,000     Ravencla
                 1,000    0,000    1,000      1,000    1,000      1,000    1,000     1,000     Hufflepu
                 1,000    0,000    1,000      1,000    1,000      1,000    1,000     1,000     Beauxbat
                 1,000    0,000    1,000      1,000    1,000      1,000    1,000     1,000     Durmstra
Weighted Avg.    1,000    0,000    1,000      1,000    1,000      1,000    0,861     0,692
```

En los resultados de la Matriz de Confusión debemos tener en cuenta que la diagonal debe ser mayor

```
=== Confusion Matrix ===

  a   b   c   d   e   f   <-- classified as
 31   0   0   0   0   0 |   a = Gryffindor
  0  20   0   0   0   0 |   b = Slytherin
  0   0  12   0   0   0 |   c = Ravenclaw
  0   0   0   8   0   0 |   d = Hufflepuff
  0   0   0   0   2   0 |   e = Beauxbatons Academy of Magic
  0   0   0   0   0   2 |   f = Durmstrang Institute
```

Cluster:

Aquí en el momento de darle Start nos permite mostrar el Número de Iteraciones que realiza



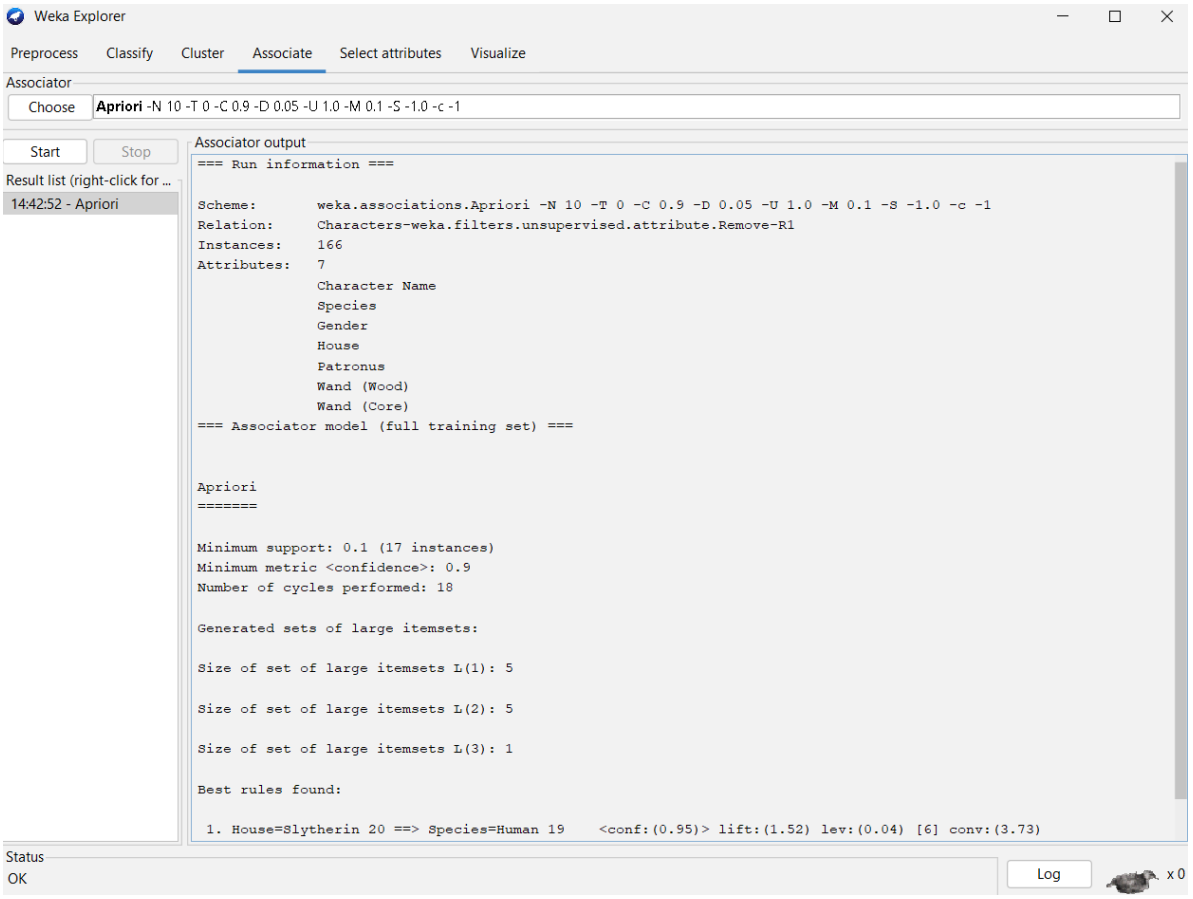
Clusterer output

```
=== Run information ===

Scheme:       weka.clusterers.SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning
Relation:     Characters-weka.filters.unsupervised.attribute.Remove-R1
Instances:    166
Attributes:   7
              Character Name
              Species
              Gender
              House
              Patronus
              Wand (Wood)
              Wand (Core)
Test mode:    evaluate on training data


=== Clustering model (full training set) ===


kMeans
======

Number of iterations: 2
Within cluster sum of squared errors: 318.0
```

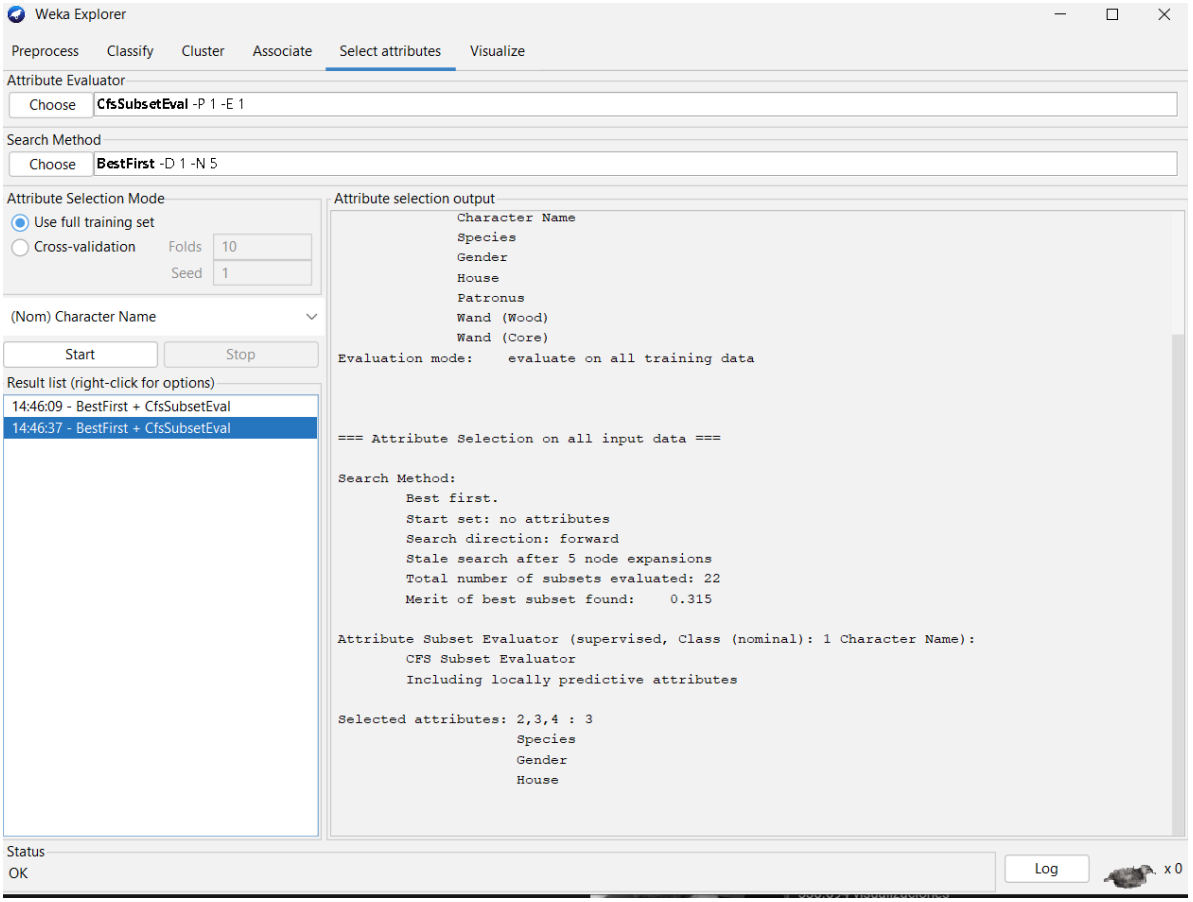
Clusterer output

```
Initial starting points (random):

Cluster 0: Pixie,Human,Male,Gryffindor,Stag,Yew,'Dragon Heartstring'
Cluster 1: All,Human,Male,Gryffindor,Stag,Yew,'Dragon Heartstring'

Missing values globally replaced with mean/mode

Final cluster centroids:
                                                                Cluster#
Attribute                                   Full Data                  0                  1
                                              (166.0)            (165.0)              (1.0)
==================================================================================
Character Name                          Harry Potter       Harry Potter                All
Species                                        Human              Human              Human
Gender                                          Male               Male               Male
House                                     Gryffindor         Gryffindor         Gryffindor
Patronus                                        Stag               Stag               Stag
Wand (Wood)                                      Yew                Yew                Yew
Wand (Core)                       Dragon Heartstring Dragon Heartstring Dragon Heartstring




Time taken to build model (full training data) : 0.01 seconds

=== Model and evaluation on training set ===

Clustered Instances

0       165 ( 99%)
1         1 (  1%)
```

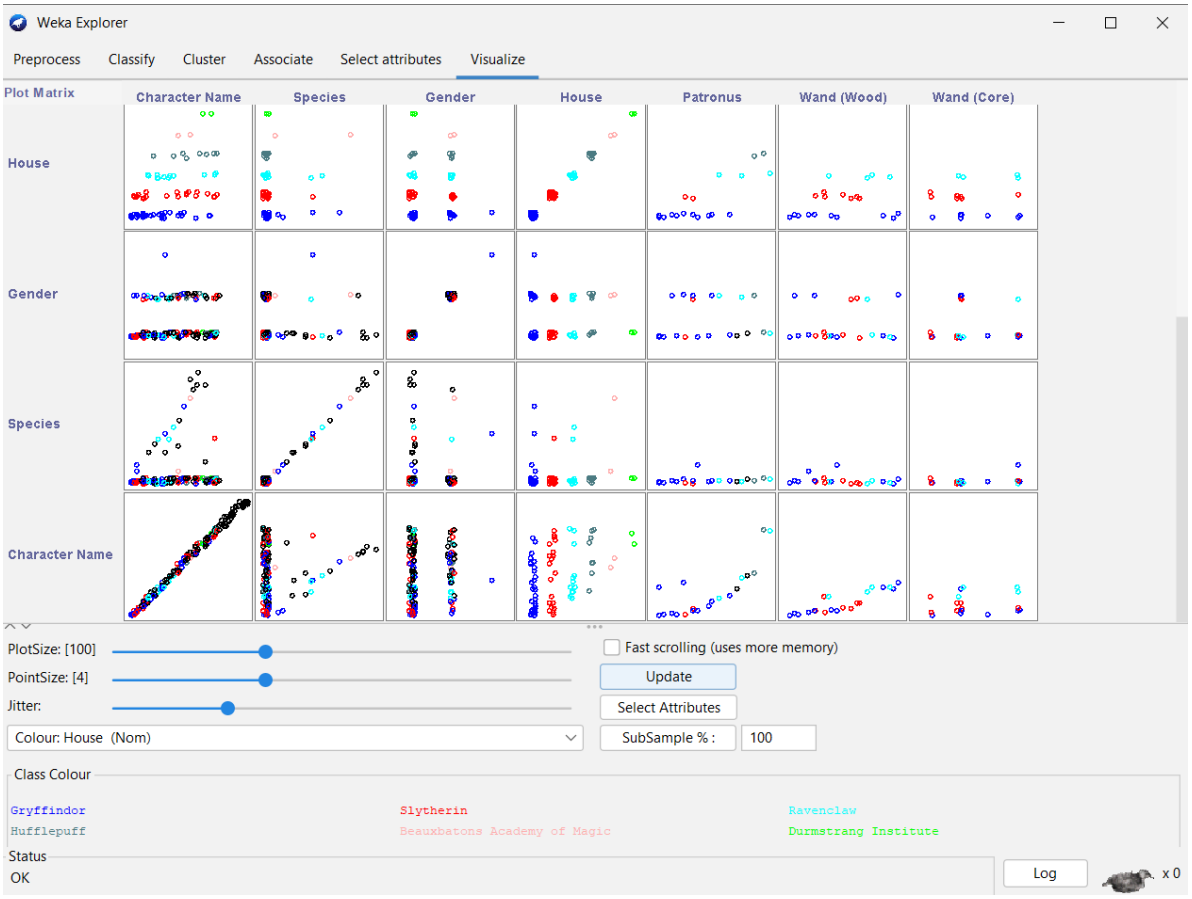
Associate:



Select Attributes:



Visualize:


Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Plot Matrix
Character Name
Species
Gender
House
Patronus
Wand (Wood)
Wand (Core)
House
Gender
Species
Character Name
PlotSize: [100]
PointSize: [4]
Jitter:
Fast scrolling (uses more memory)
Update
Select Attributes
Colour: House (Nom)
SubSample % :
100
Class Colour
Gryffindor
Slytherin
Ravenclaw
Hufflepuff
Beauxbatons Academy of Magic
Durmstrang Institute
Status
OK
Log
x 0