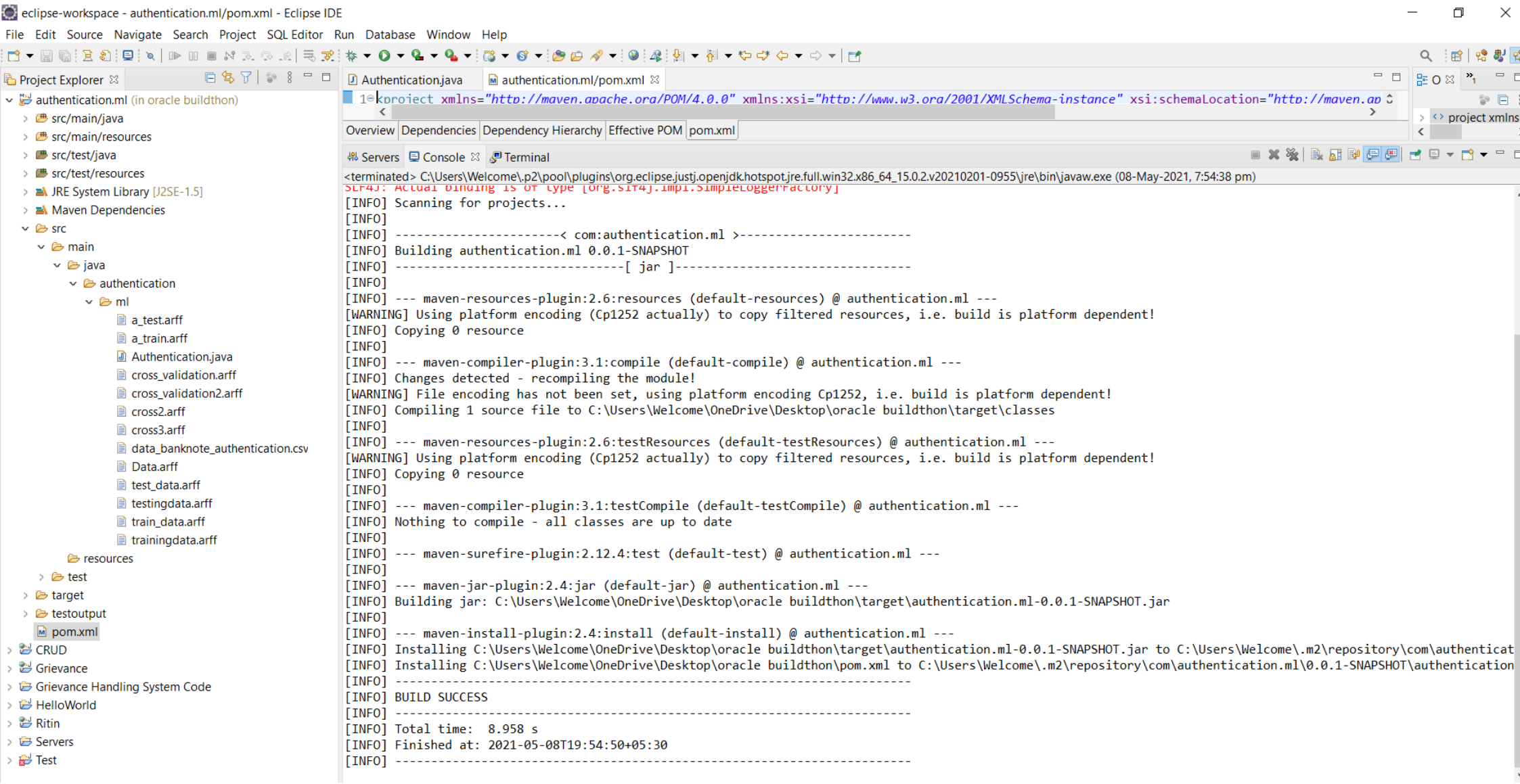
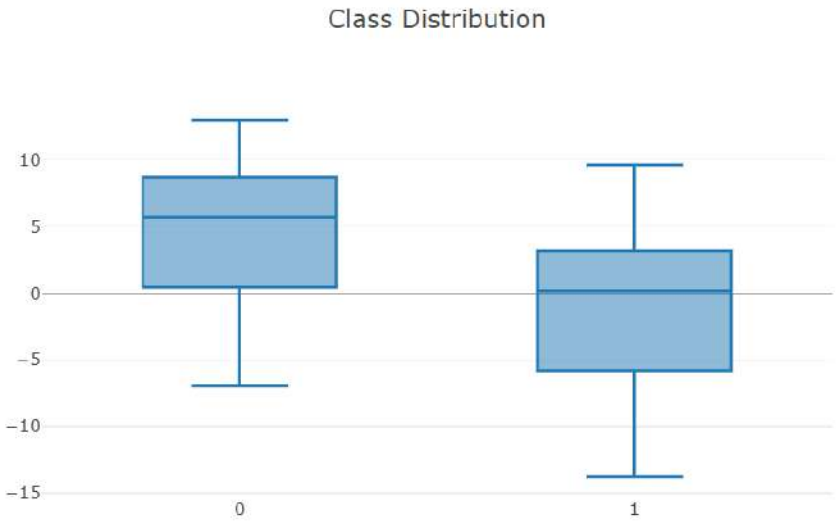
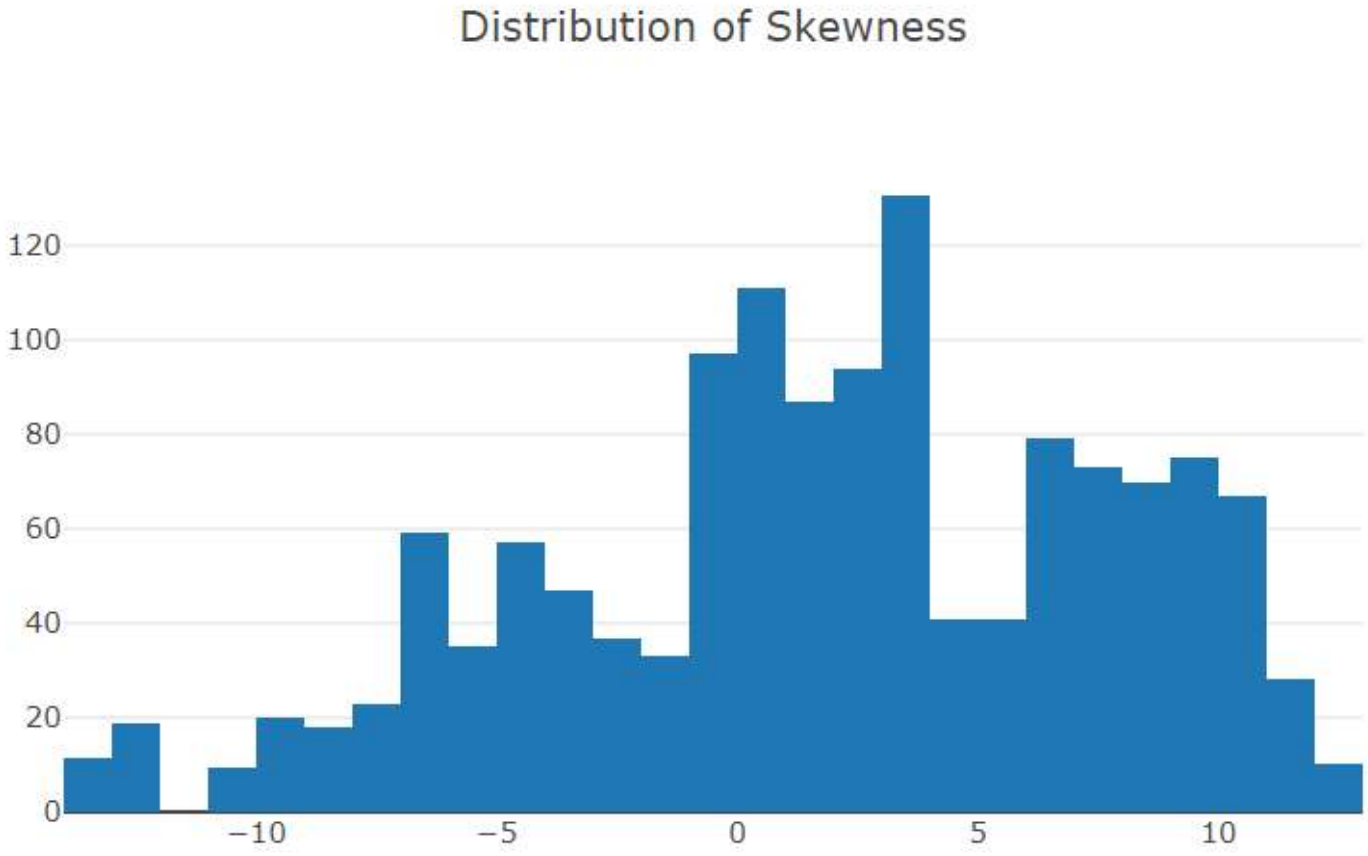
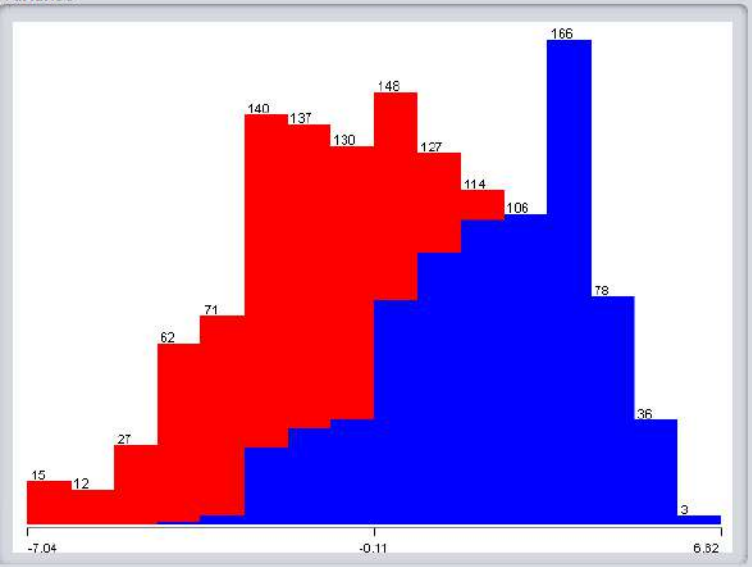

eclipse-workspace - authentication.ml/pom.xml - Eclipse IDE
File Edit Source Navigate Search Project SQL Editor Run Database Window Help
Project Explorer
authentication.ml (in oracle buildthon)
src/main/java
src/main/resources
src/test/java
src/test/resources
JRE System Library [J2SE-1.5]
Maven Dependencies
src
main
java
authentication
ml
a_test.arff
a_train.arff
Authentication.java
cross_validation.arff
cross_validation2.arff
cross2.arff
cross3.arff
data_banknote_authentication.csv
Data.arff
test_data.arff
testingdata.arff
train_data.arff
trainingdata.arff
resources
test
target
testoutput
pom.xml
CRUD
Grievance
Grievance Handling System Code
HelloWorld
Ritin
Servers
Test
Authentication.java
authentication.ml/pom.xml
1<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.ap
Overview
Dependencies
Dependency Hierarchy
Effective POM
pom.xml
Servers
Console
Terminal
<terminated> C:\Users\Welcome\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v20210201-0955\jre\bin\javaw.exe (08-May-2021, 7:54:38 pm)
SLF4J: Actual binding is of type [org.slf4j.impl.SimpleLoggerFactory]
[INFO] Scanning for projects...
[INFO]
[INFO] ----------------------< com:authentication.ml >-----------------------
[INFO] Building authentication.ml 0.0.1-SNAPSHOT
[INFO] --------------------------------[jar]---------------------------------
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ authentication.ml ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ authentication.ml ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 1 source file to C:\Users\Welcome\OneDrive\Desktop\oracle buildthon\target\classes
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ authentication.ml ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ authentication.ml ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ authentication.ml ---
[INFO]
[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ authentication.ml ---
[INFO] Building jar: C:\Users\Welcome\OneDrive\Desktop\oracle buildthon\target\authentication.ml-0.0.1-SNAPSHOT.jar
[INFO]
[INFO] --- maven-install-plugin:2.4:install (default-install) @ authentication.ml ---
[INFO] Installing C:\Users\Welcome\OneDrive\Desktop\oracle buildthon\target\authentication.ml-0.0.1-SNAPSHOT.jar to C:\Users\Welcome\.m2\repository\com\authenticat
[INFO] Installing C:\Users\Welcome\OneDrive\Desktop\oracle buildthon\pom.xml to C:\Users\Welcome\.m2\repository\com\authentication.ml\0.0.1-SNAPSHOT\authentication
[INFO] --
[INFO] BUILD SUCCESS
[INFO] --
[INFO] Total time: 8.958 s
[INFO] Finished at: 2021-05-08T19:54:50+05:30
[INFO] --

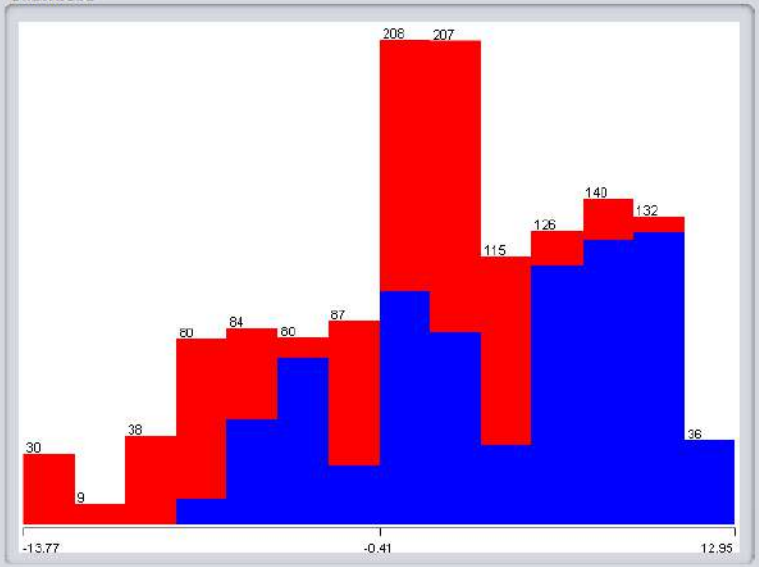

Class Distribution
10
5
0
−5
−10
−15
0
1


Distribution of Skewness
120
100
80
60
40
20
0
−10
−5
0
5
10

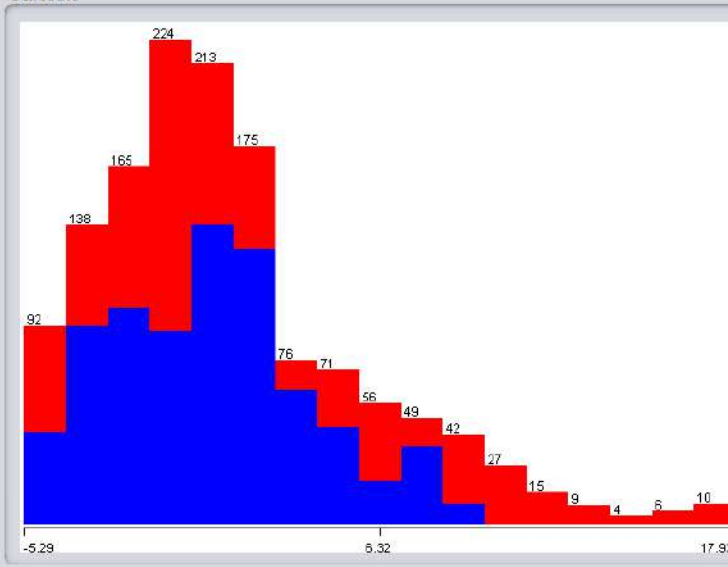
Variance



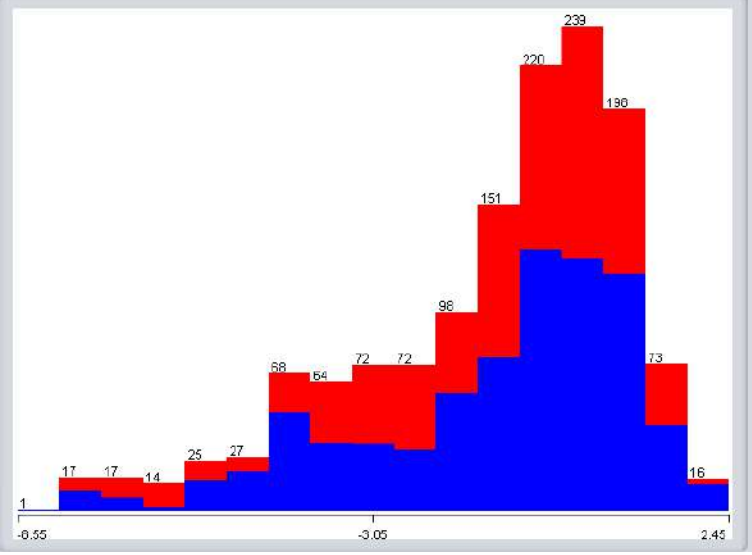
Skewness



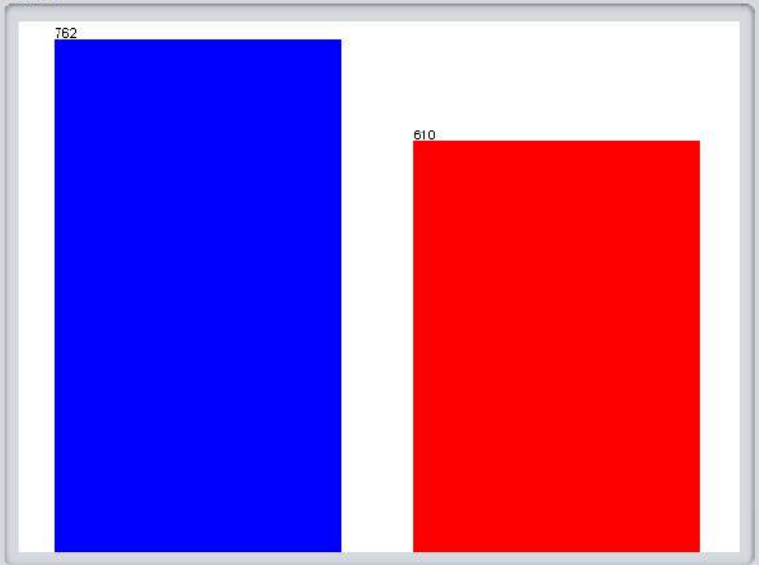
Curtosis



Entropy



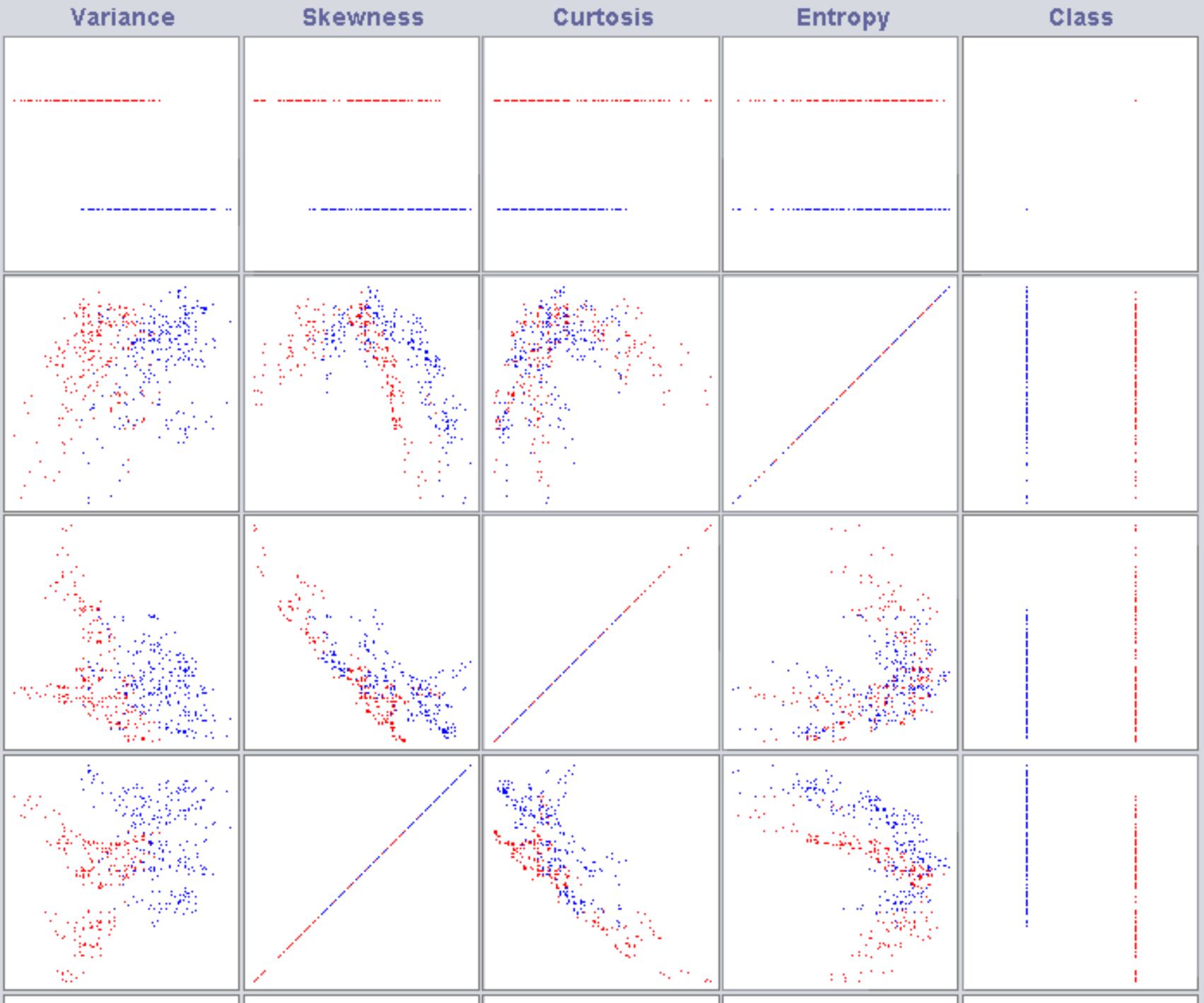
Class



Weka Explorer

Preprocess | Classify | Cluster | Associate | Select attributes | Visualize

Plot Matrix



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

Logistic Regression with ridge parameter of 1.0E-8
Coefficients...
                Class
Variable            0
======================
Variance       7.8594
Skewness        4.191
Curtosis       5.2875
Entropy        0.6053
Intercept      -7.3219


Odds Ratios...
                Class
Variable            0
======================
Variance     2590.0439
Skewness       66.0892
Curtosis      197.8461
Entropy         1.8318
```

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

Correctly Classified Instances        1360               99.1254 %
Incorrectly Classified Instances        12                0.8746 %
Kappa statistic                          0.9823
Mean absolute error                      0.012
Root mean squared error                  0.0814
Relative absolute error                  2.4278 %
Root relative squared error             16.3751 %
Total Number of Instances             1372

=== Detailed Accuracy By Class ===

               TP Rate   FP Rate   Precision   Recall  F-Measure  MCC      ROC Area  PRC Area  Class
               0.992     0.010     0.992      0.992     0.992      0.982    1.000     1.000     0
               0.990     0.008     0.990      0.990     0.990      0.982    1.000     1.000     1
Weighted Avg.  0.991     0.009     0.991      0.991     0.991      0.982    1.000     1.000

=== Confusion Matrix ===

   a   b   <-- classified as
 756   6 |   a = 0
   6 604 |   b = 1
```

eclipse-workspace - authentication.ml/src/main/java/authentication/ml/Authentication.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project SQL Editor Run Database Window Help

Project Explorer

- authentication.ml (in oracle buildthon)
- CRUD
- Grievance
- Grievance Handling System Code
- HelloWorld
- Ritin
- Servers
- Test

Authentication.java | authentication.ml/pom.xml

```
30            // TODO Auto-generated catch block
31            e.printStackTrace();
```

Servers | Data Source Explorer | Console

<terminated> Authentication [Java Application] C:\Users\Welcome\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v20210201-0955\jre\bin\javaw.exe (08-May-2021, 8:06:54 pm – 8:06:58 pm)

```
1372 rows X 5 cols
                data_banknote_authentication.csv
 Variance  |  Skewness  |  Curtosis  |  Entropy   |  Class  |
-------------------------------------------------------------
   3.6216  |    8.6661  |   -2.8073  |  -0.44699  |      0  |
   4.5459  |    8.1674  |   -2.4586  |   -1.4621  |      0  |
    3.866  |   -2.6383  |    1.9242  |   0.10645  |      0  |
   3.4566  |    9.5228  |   -4.0112  |   -3.5944  |      0  |
  0.32924  |   -4.4552  |    4.5718  |   -0.9888  |      0  |
                data_banknote_authentication.csv
 Variance  |  Skewness  |  Curtosis  |  Entropy   |  Class  |
-------------------------------------------------------------
  0.40614  |    1.3492  |   -1.4501  |  -0.55949  |      1  |
  -1.3887  |   -4.8773  |    6.4774  |   0.34179  |      1  |
  -3.7503  |  -13.4586  |   17.5932  |   -2.7771  |      1  |
  -3.5637  |   -8.3827  |   12.393   |   -1.2823  |      1  |
  -2.5419  |  -0.65804  |    2.6842  |    1.1952  |      1  |
Structure of data_banknote_authentication.csv
 Index  |  Column Name  |  Column Type  |
-----------------------------------------
     0  |     Variance  |       DOUBLE  |
     1  |     Skewness  |       DOUBLE  |
     2  |     Curtosis  |       DOUBLE  |
     3  |      Entropy  |       DOUBLE  |
     4  |        Class  |      INTEGER  |
                                        data_banknote_authentication.csv
 Summary   |       Variance       |       Skewness       |       Curtosis       |       Entropy        |        Class         |
-----------------------------------------------------------------------------------------------------------------------------------
    Count  |                 1372 |                 1372 |                 1372 |                 1372 |                 1372 |
      sum  |   595.0847726999998  |   2637.468481520002  |  1917.5444048900017  |  -1634.9527454999989 |                  610 |
     Mean  |  0.4337352570699696  |  1.9223531206414035  |  1.3976271172667638  |  -1.1916565200437328 |  0.44460641399416895 |
      Min  |               -7.0421|              -13.7731|               -5.2861|               -8.5482|                     0|
      Max  |                6.8248|               12.9516|               17.9274|                2.4495|                     1|
    Range  |               13.8669|               26.7247|               23.2135|               10.9977|                     1|
 Variance  |   8.081299121945154  |   34.44570967967512  |  18.576359377624264  |   4.414256203357667  |  0.2471116611696257  |
 Std. Dev  |   2.8427625862785577 |    5.86904674369485  |   4.310030090106595  |    2.101013137359609 |   0.4971032701256608 |
-----------------------------------------------------------------------------------------------------------------------------------
```

```
Train dataset size823
** Logistic Regression Evaluation with Datasets **

Correctly Classified Instances         270               98.1818 %
Incorrectly Classified Instances         5                1.8182 %
Kappa statistic                          0.9636
Mean absolute error                      0.0164
Root mean squared error                  0.1057
Relative absolute error                  3.2918 %
Root relative squared error             21.0539 %
Total Number of Instances              275

Confusion matrix:
[139.0, 4.0]
[1.0, 131.0]
--------------------
Area under the curve
0.9995232040686586
--------------------
[Correct, Incorrect, Kappa, Total cost, Average cost, KB relative, KB information, Correlation, Complexity 0, Complexity scheme, Complexity improvement, MAE, R
Recall :0.99
Precision:0.97
F1 score:0.98
Accuracy:0.98
--------------------
Predicted label:
1.0
```