



Project Explorer

- org.ml
 - src/main/java
 - src/main/resources
 - src/test/java
 - src/test/resources
 - JRE System Library [J2SE-1.5]
 - Maven Dependencies
 - src
 - main
 - java
 - org
 - ml
 - ml.arff
 - resources
 - test
 - target
 - testoutput
 - pom.xml

org.ml/pom.xml | DataAnalysis.java | LinearReg.java | LogisticReg.java

```
1<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
2  <modelVersion>4.0.0</modelVersion>
3  <groupId>com</groupId>
4  <artifactId>org.ml</artifactId>
5  <version>0.0.1-SNAPSHOT</version>
6  <dependencies>
7  <dependency>
```

Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

Markers | Properties | Servers | Data Source Explorer | Snippets | Console

<terminated> C:\Program Files\Java\jdk-14.0.2\bin\javaw.exe (08-May-2021, 7:58:46 pm)

```
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ org.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) @ org.ml ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ org.ml ---
[INFO]
[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ org.ml ---
[INFO] Building jar: C:\Users\sange\Desktop\eclipse 2\org.ml\target\org.ml-0.0.1-SNAPSHOT.jar
[INFO]
[INFO] --- maven-install-plugin:2.4:install (default-install) @ org.ml ---
[INFO] Installing C:\Users\sange\Desktop\eclipse 2\org.ml\target\org.ml-0.0.1-SNAPSHOT.jar to C:\Users\sange\.m2\repository\com\org\ml\org.ml-0.0.1-SNAPSHOT.jar
[INFO] Installing C:\Users\sange\Desktop\eclipse 2\org.ml\pom.xml to C:\Users\sange\.m2\repository\com\org\ml\org.ml-0.0.1-SNAPSHOT\org.ml-0.0.1-SNAPSHOT.pom
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 1.503 s
[INFO] Finished at: 2021-05-08T19:58:49+05:30
[INFO]
```

Writable

Smart Insert

16:17:658

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Project Explorer

org.ml

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org.ml/pom.xml

DataAnalysis.java

LinearReg.java

LogisticReg.java

Outline

Task List

org.ml

- DataAnalysis
 - main(String[]) : void

Markers Properties Servers Data Source Explorer Snippets Console

<terminated> DataAnalysis [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\javaw.exe (08-May-2021, 8:02:00 pm – 8:02:03 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

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

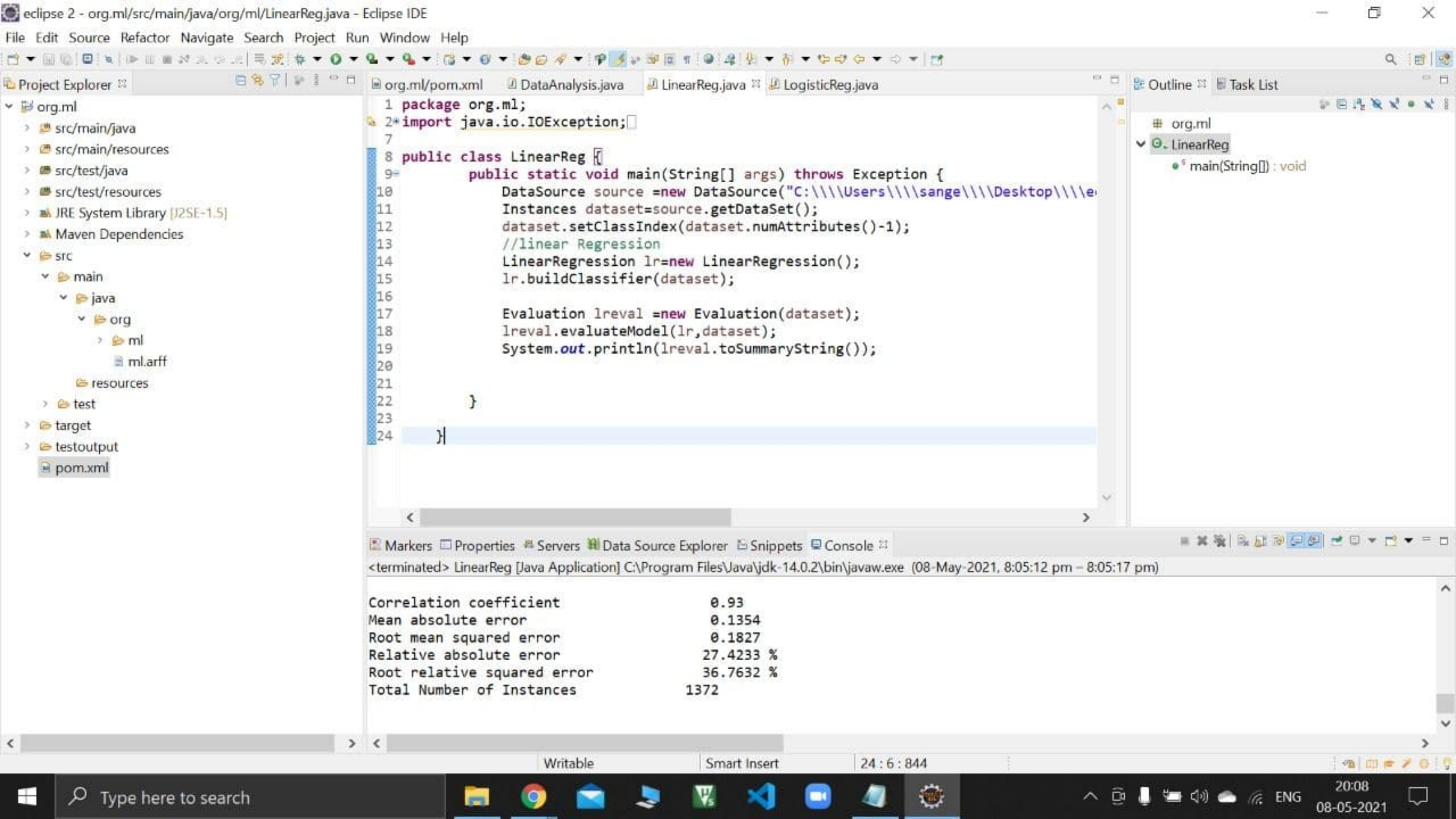
data_banknote_authentication.csv

Summary	Variance	Skewness	Curtosis	Entropy	Class
Count	1372	1372	1372	1372	1372
sum	595.0847726999998	2637.46848152002	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

Type here to search

20:03

08-05-2021



File Edit Source Refactor Navigate Search Project Run Window Help

Project Explorer

org.ml

src/main/java

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JRE System Library [J2SE-1.5]

Maven Dependencies

src

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Markers

Properties

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Data Source Explorer

Snippets

Console

<terminated> LogisticReg [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\javaw.exe (08-May-2021, 8:10:40 pm – 8:10:41 pm)

673

** Logistic Regression Evaluation with Datasets **

Correctly Classified Instances95399.2708 %

Incorrectly Classified Instances70.7292 %

Kappa statistic0.9851

Mean absolute error0.009

Root mean squared error0.0725

Relative absolute error1.8397 %

Root relative squared error14.6259 %

Total Number of Instances960

Confusion matrix:

[542.0, 3.0]

[4.0, 411.0]

Area under the curve

0.9998629379904941

[Correct, Incorrect, Kappa, Total cost, Average cost, KB relative, KB information, Correlation, Complexity 0, Complexity scheme,

Recall :0.99

Precision:0.99

F1 score:0.99

Accuracy:0.99

Predicted label:

1.0

Writable

Smart Insert

36 : 124 : 977

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File Explorer

Google Chrome

Outlook

VS Code

Discord

Telegram

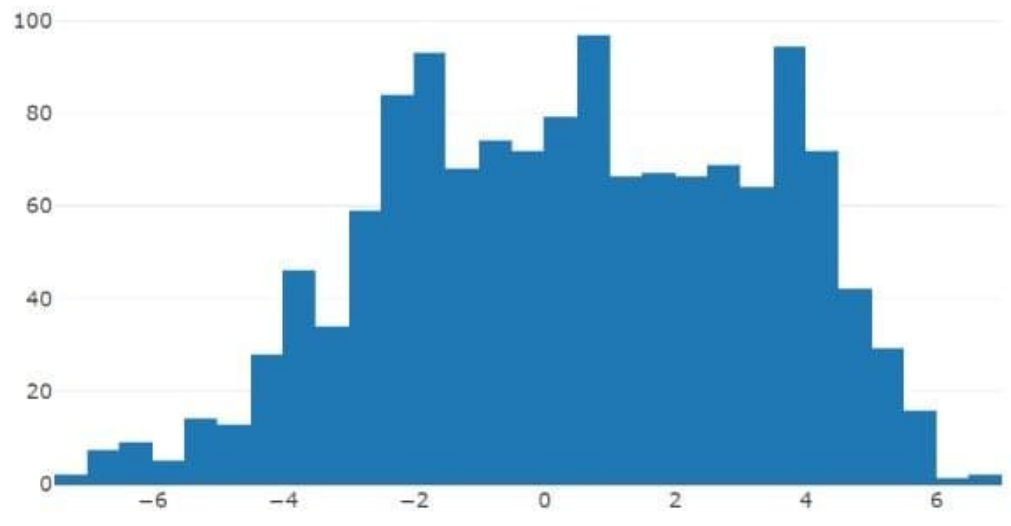
Settings

20:10

08-05-2021

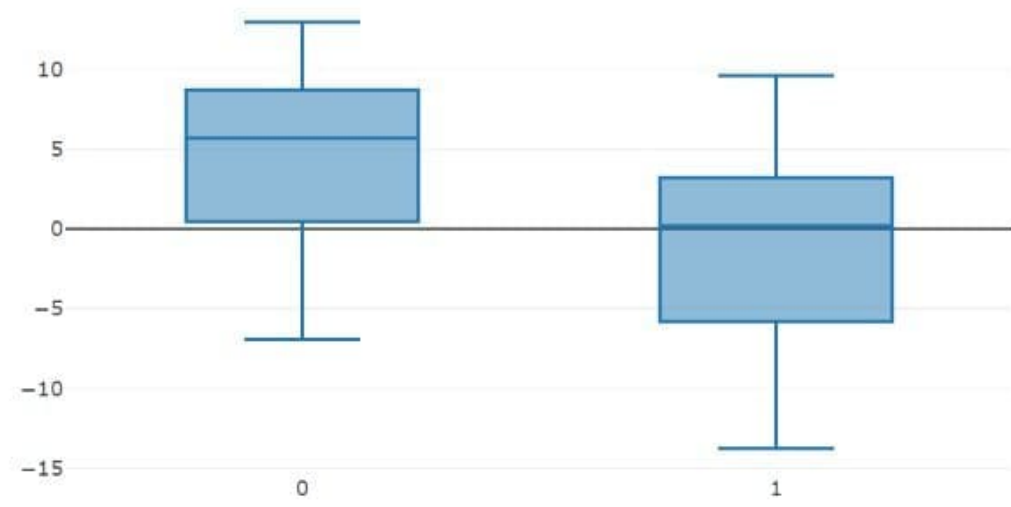


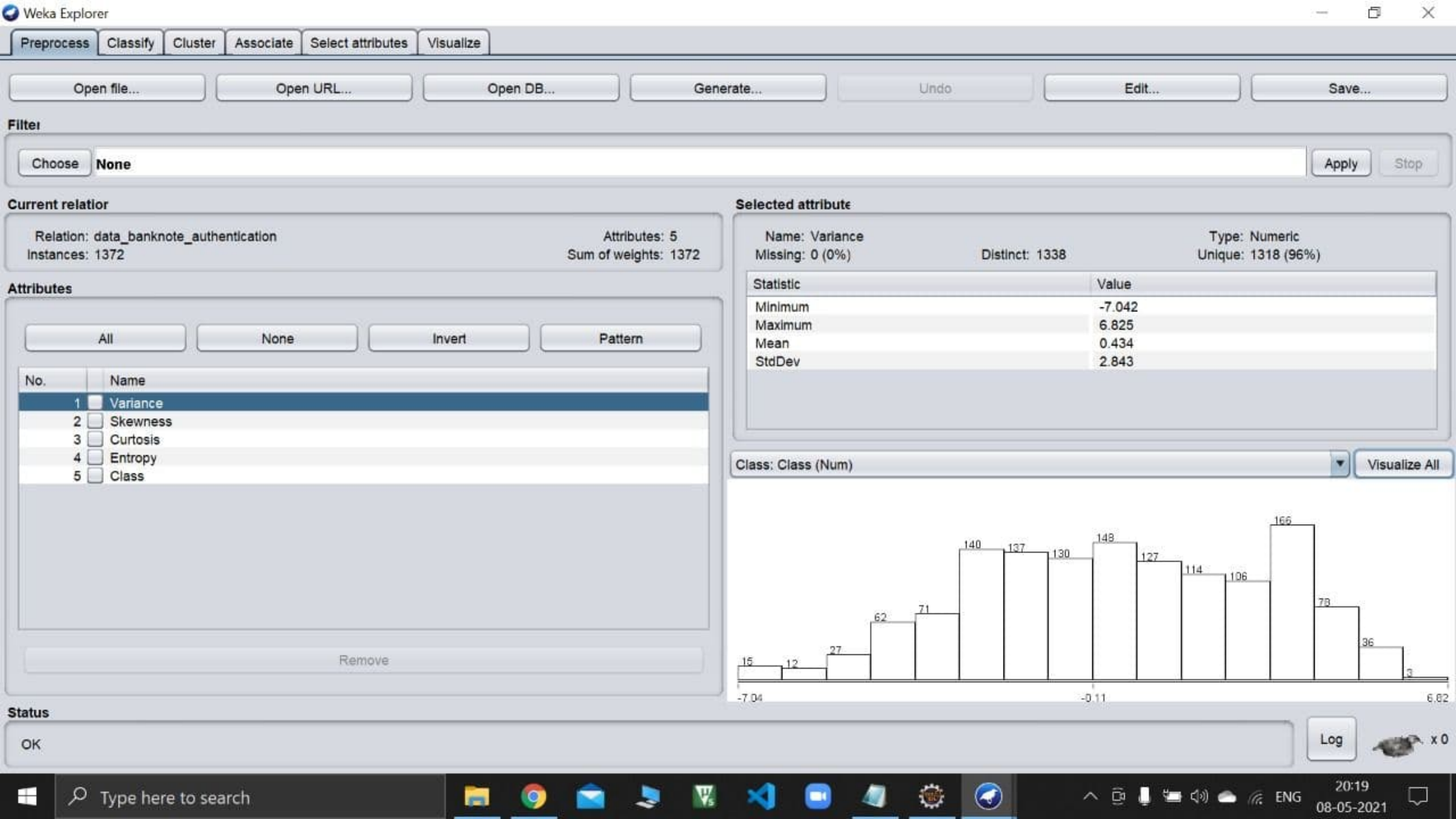
DISTRIBUTION OF VARIANCE



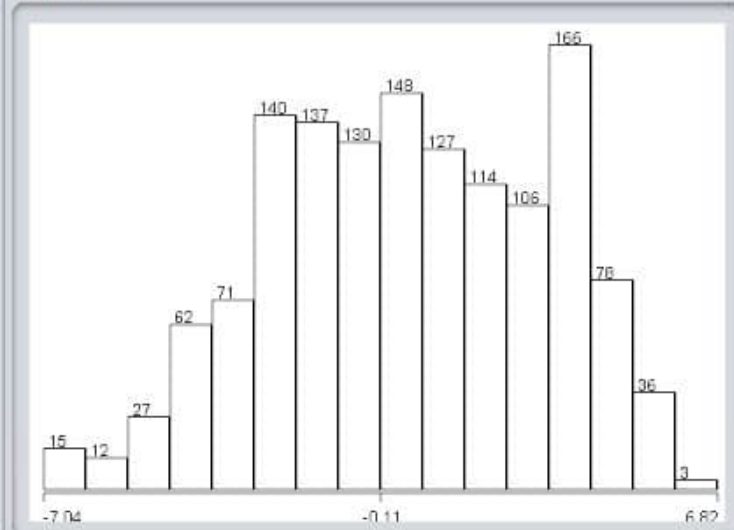


Class Distribution

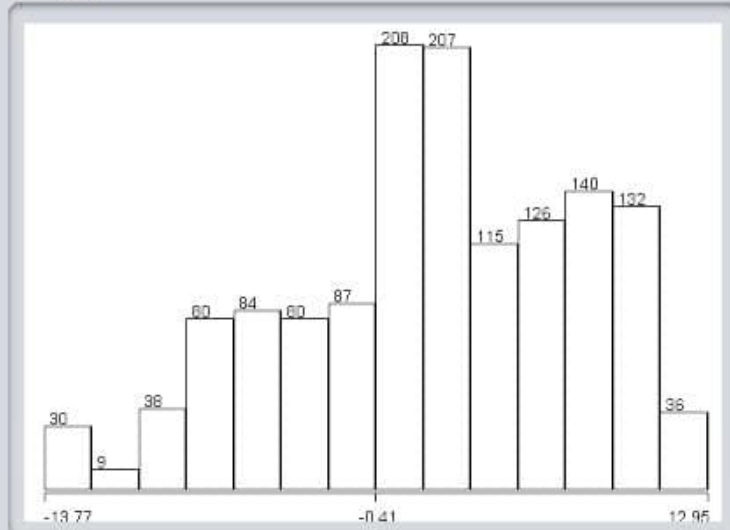




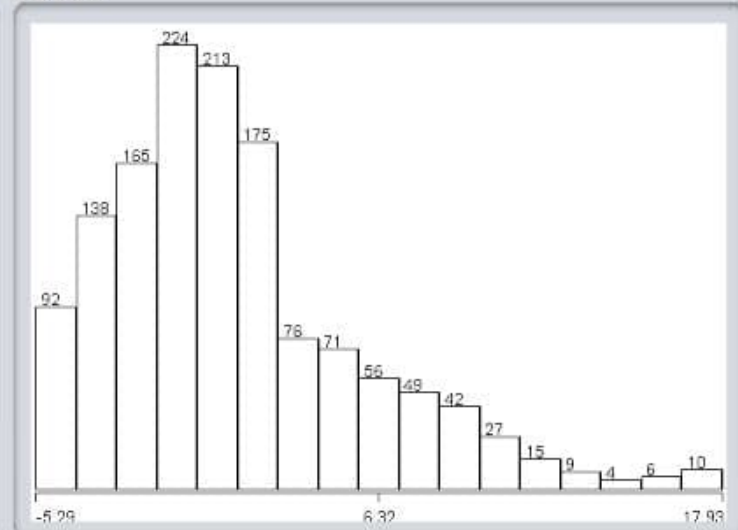
Variance



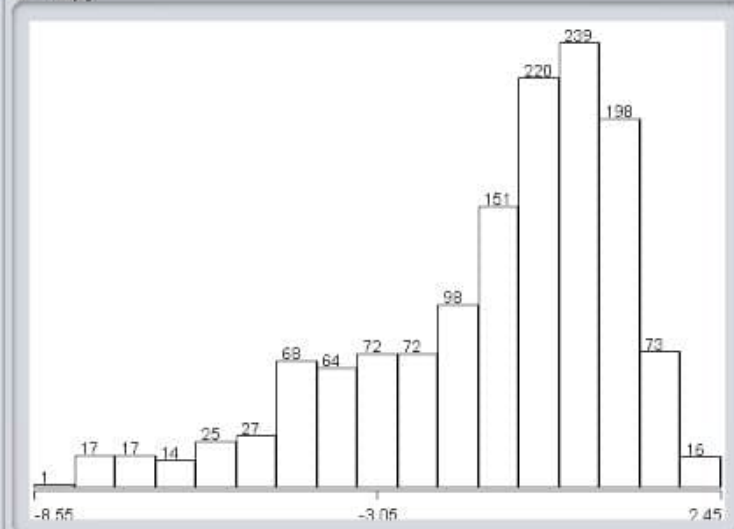
Skewness



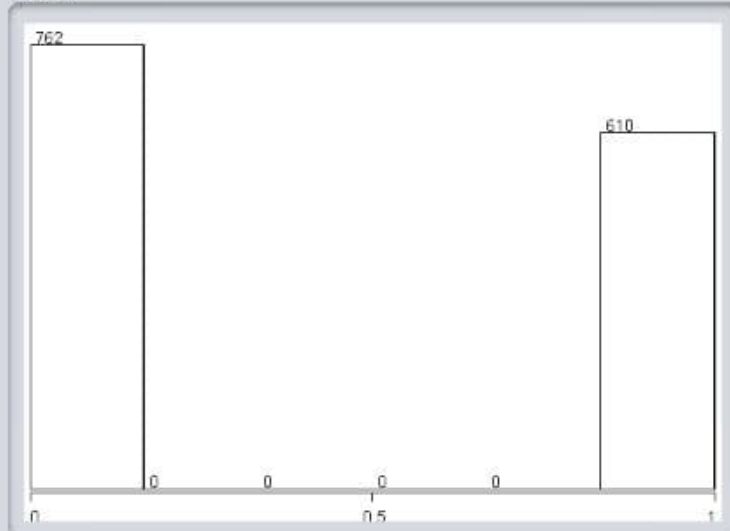
Curtosis

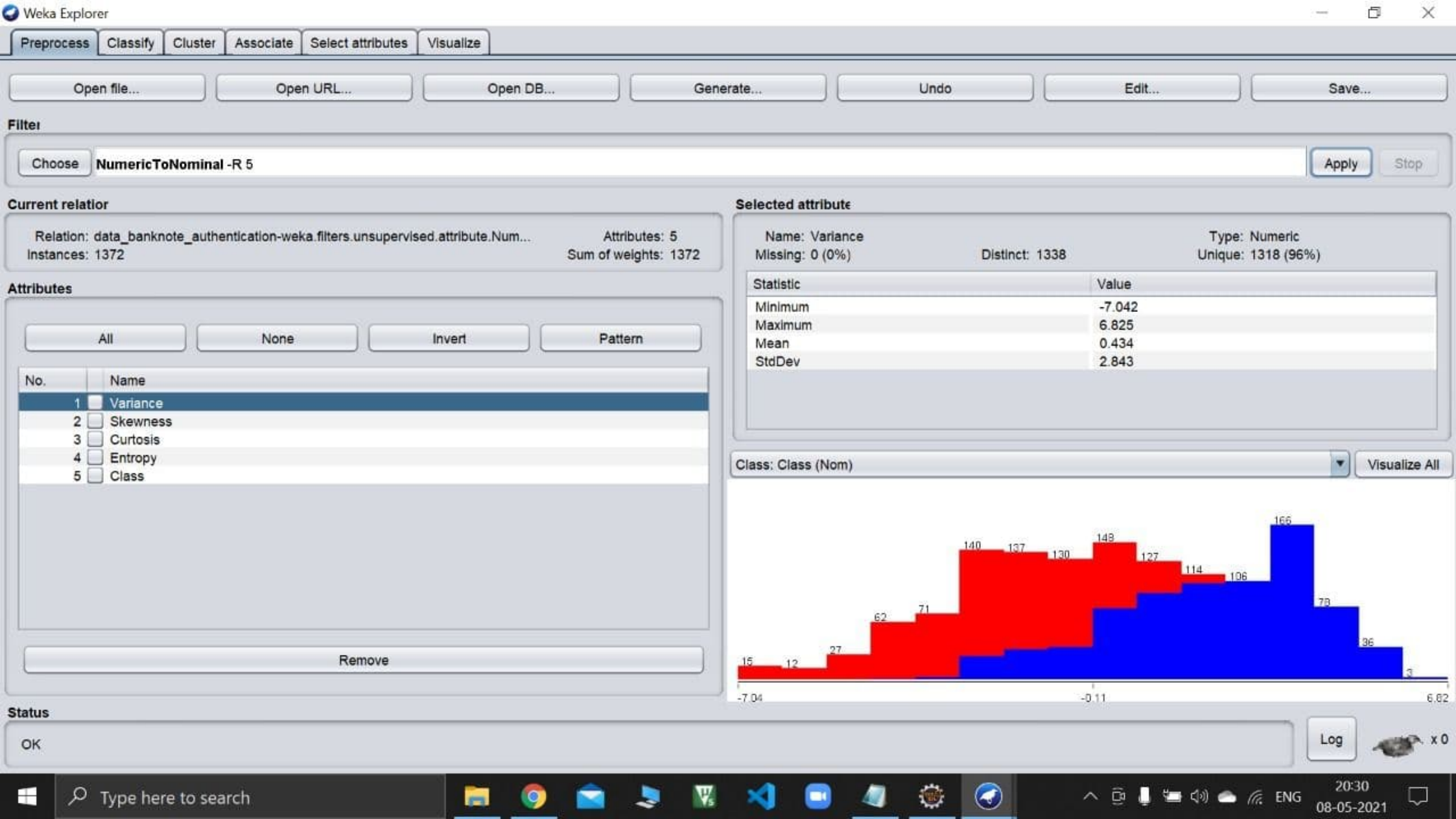


Entropy



Class

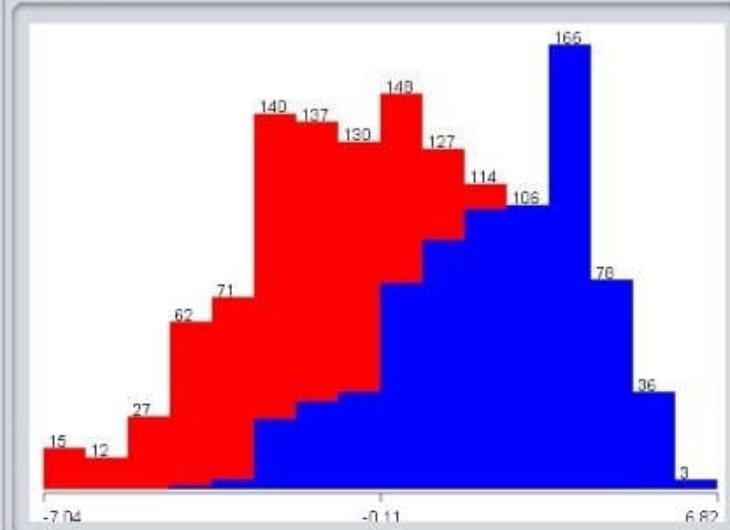




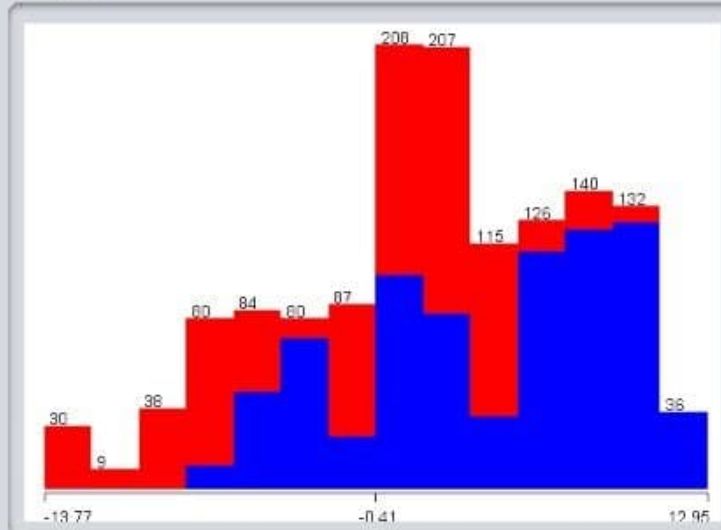
Type here to search

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08-05-2021

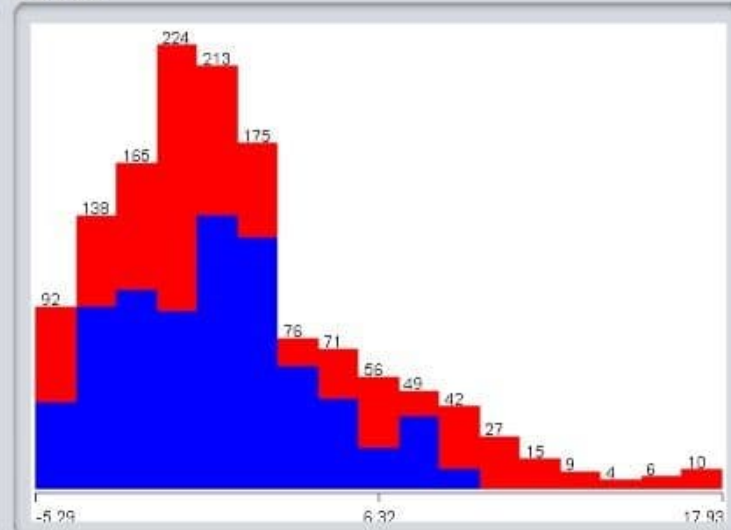
Variance



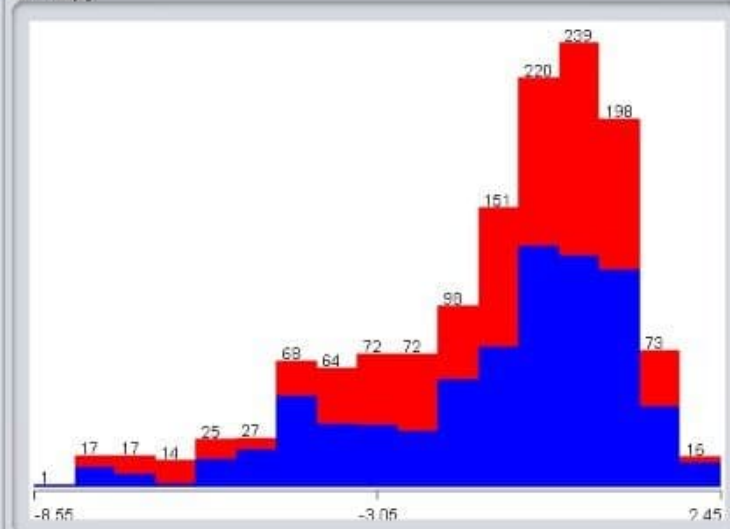
Skewness



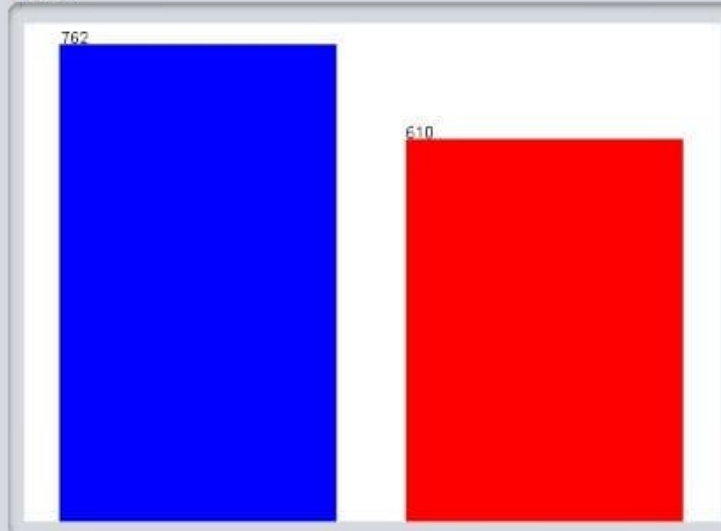
Curtosis



Entropy



Class



Weka Explorer

Preprocess

Classify

Cluster

Associate

Select attributes

Visualize

Classifier

Choose

Logistic -R 1.0E-8 -M -1 -num-decimal-places 4

Test options

☐ Use training set

☐ Supplied test set

☒ Cross-validation

☐ Percentage split

Set...

Folds

%

10

66

More options...

(Nom) Class

Start

Stop

Result list (right-click for options)

20:31:33 - functions.Logistic

Classifier output

=== Run information ===

Scheme: weka.classifiers.functions.Logistic -R 1.0E-8 -M -1 -num-decimal-places 4

Relation: data_banknote_authentication-weka.filters.unsupervised.attribute.NumericToNominal-R5

Instances: 1372

Attributes: 5

Variance

Skewness

Curtosis

Entropy

Class

Test mode: 10-fold cross-validation

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

Logistic Regression with ridge parameter of 1.0E-8

Coefficients...

Variable	Class
Variance	7.8594
Skewness	4.191
Curtosis	5.2875
Entropy	0.6053
Intercept	-7.3219

Status

OK

Log

x 0

Type here to search

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Preprocess

Classify

Cluster

Associate

Select attributes

Visualize

Classifier

Choose

Logistic -R 1.0E-8 -M -1 -num-decimal-places 4

Test options

Use training set

Supplied test set

Cross-validation

Folds10

Percentage split

%66

More options...

(Nom) Class

Start

Stop

Result list (right-click for options)

20:31:33 - functions.Logistic

Classifier output

=== 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

Status

OK

Log

x 0

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File Explorer

Google Chrome

Outlook

VS Code

Zoom

Settings

Task View

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