

### Ejercicio 5:

1. ¿Cuántos atributos tiene cada muestra?

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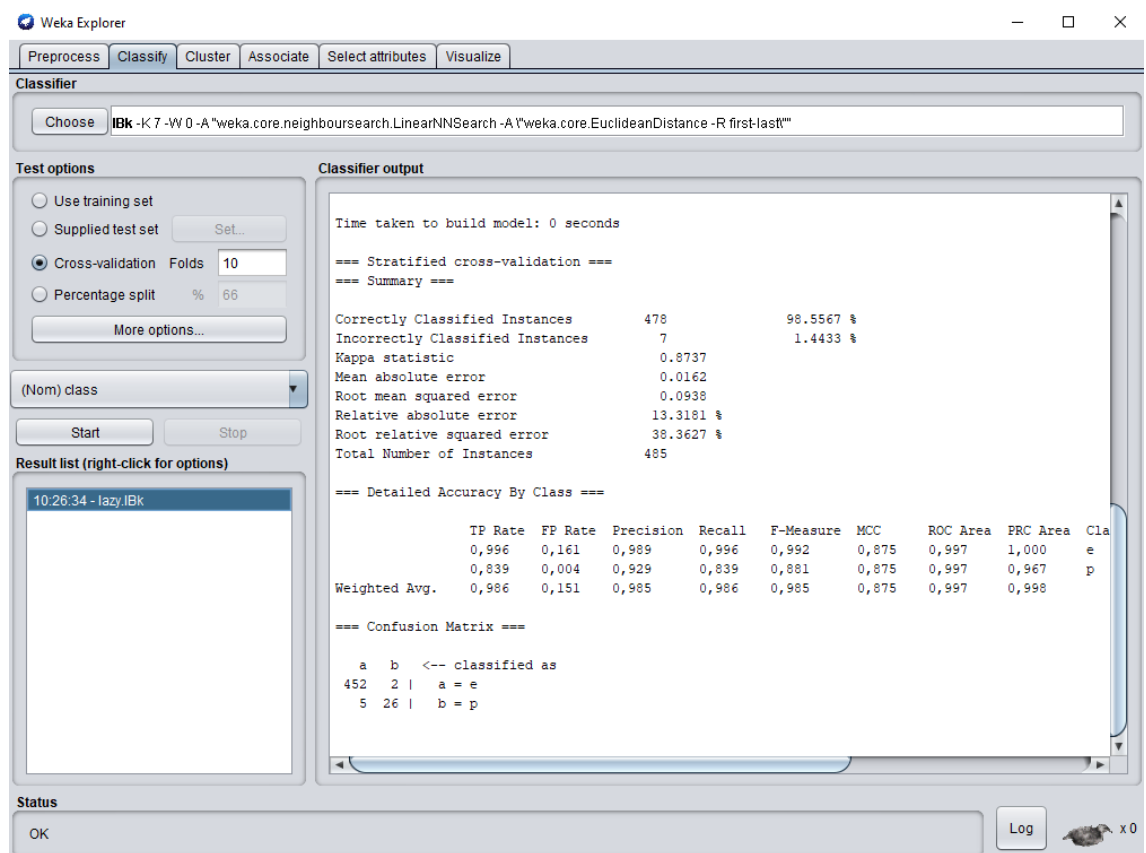
2. ¿Cuántas clases hay en total y cuántas muestras hay de cada una?

Hay 2 Clases (clase e y clase p), de la clase e hay 454 muestras y de la clase p hay 31 muestras.

3. ¿Cuales son los posibles valores del atributo stalk-root?

320, 7, 150, 3

4. ¿Cual es la tasa de aciertos de un algoritmo KNN para  $k = 7$  y utilizado validacion cruzada para  $n = 10$ ? Añade captura donde se vea la configuración:



The screenshot shows the Weka Explorer interface. The 'Classifier' tab is active, and the 'IBK' classifier is selected with the following configuration: `-K 7 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A "weka.core.EuclideanDistance -R first-last"`. The 'Test options' section shows 'Cross-validation' selected with 'Folds' set to 10. The 'Classifier output' window displays the following results:

```
Time taken to build model: 0 seconds

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

Correctly Classified Instances      478           98.5567 %
Incorrectly Classified Instances       7           1.4433 %
Kappa statistic                    0.8737
Mean absolute error                 0.0162
Root mean squared error             0.0938
Relative absolute error             13.3181 %
Root relative squared error         38.3627 %
Total Number of Instances          485

=== Detailed Accuracy By Class ===
```

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0,996	0,161	0,989	0,996	0,992	0,875	0,997	1,000	e
	0,839	0,004	0,929	0,839	0,881	0,875	0,997	0,967	p
Weighted Avg.	0,986	0,151	0,985	0,986	0,985	0,875	0,997	0,998	

```

=== Confusion Matrix ===
 a  b  <-- classified as
452  2  |  a = e
 5 26  |  b = p

```

98.55% de tasa de acierto

5. ¿Cual es la tasa de acierto de un algoritmo arbol de decision utilizando validacion cruzada para  $n = 10$ ? Añade captura donde se vea la configuración:

**Classifier**

Choose **J48 -C 0.25 -M 2**

**Test options**

☐ Use training set  
☐ Supplied test set **Set...**  
☒ Cross-validation **Folds** **10**  
☐ Percentage split **%** **66**  
**More options...**

(Nom) class

**Start** **Stop**

**Result list (right-click for options)**

- 10:26:34 - lazyJbk
- 10:29:29 - trees.J48

**Classifier output**

Time taken to build model: 0.02 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances	480	98.9691 %
Incorrectly Classified Instances	5	1.0309 %
Kappa statistic	0.9068	
Mean absolute error	0.0114	
Root mean squared error	0.0987	
Relative absolute error	9.3871 %	
Root relative squared error	40.3483 %	
Total Number of Instances	485	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	FRC Area	Class
	1,000	0,161	0,989	1,000	0,995	0,911	0,985	0,998	e
	0,839	0,000	1,000	0,839	0,912	0,911	0,985	0,928	p
Weighted Avg.	0,990	0,151	0,990	0,990	0,989	0,911	0,985	0,994	

=== Confusion Matrix ===

a	b	<-- classified as	
454	0	a = e	
5	26	b = p	

**Status**

OK **Log** x0

98,96% de tasa de acierto.