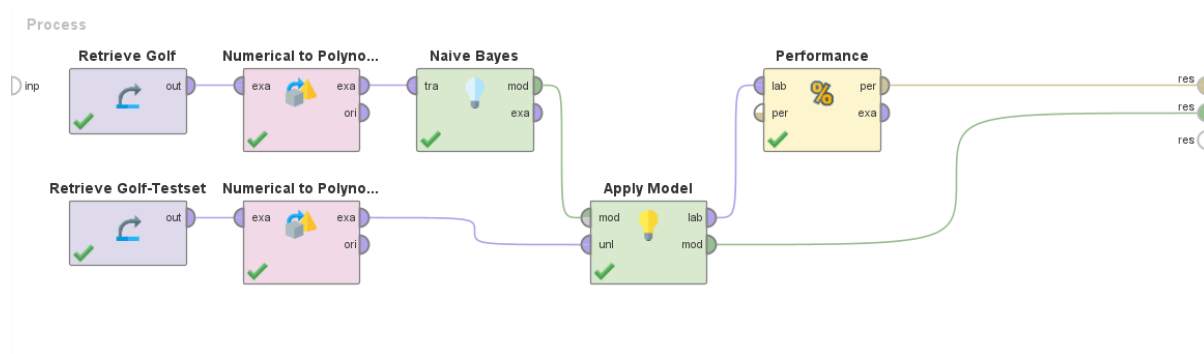


## Trabajo de Aplicación 5 – Ej 1

### - Numerical to Polynomial



Nominal values

| Index | Nominal value | Absolute count | Fraction |
|-------|---------------|----------------|----------|
| 1     | 72            | 2              | 0.143    |
| 2     | 75            | 2              | 0.143    |
| 3     | 64            | 1              | 0.071    |
| 4     | 65            | 1              | 0.071    |
| 5     | 68            | 1              | 0.071    |
| 6     | 69            | 1              | 0.071    |
| 7     | 70            | 1              | 0.071    |
| 8     | 71            | 1              | 0.071    |
| 9     | 66            | 1              | 0.071    |

Close

Podemos ver que convirtiendo los atributos numéricos en atributos polinomiales se genera una clase por cada valor único y los que se repiten se agrupan con ese mismo.

# SimpleDistribution

Distribution model for label attribute Play

Class no (0.357)  
4 distributions

Class yes (0.643)  
4 distributions

Performance aplicando atributos polinomiales:

## PerformanceVector

PerformanceVector:

accuracy: 71.43%

ConfusionMatrix:

|       |    |     |
|-------|----|-----|
| True: | no | yes |
| no:   | 3  | 2   |
| yes:  | 2  | 7   |

precision: 77.78% (positive class: yes)

ConfusionMatrix:

|       |    |     |
|-------|----|-----|
| True: | no | yes |
| no:   | 3  | 2   |
| yes:  | 2  | 7   |

recall: 77.78% (positive class: yes)

ConfusionMatrix:

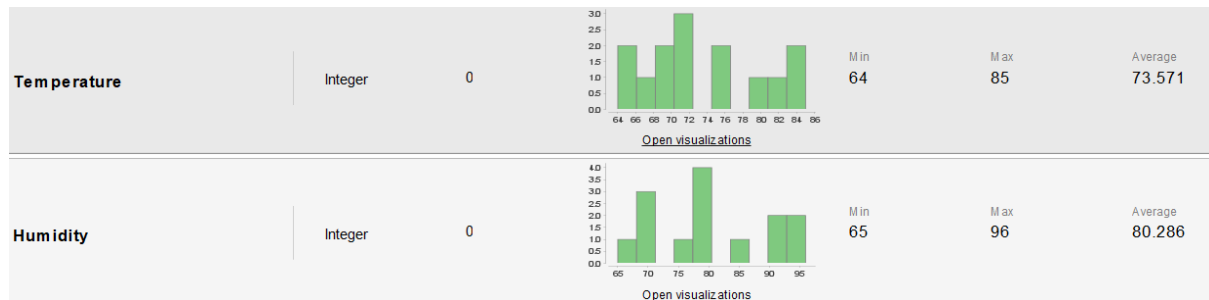
|       |    |     |
|-------|----|-----|
| True: | no | yes |
| no:   | 3  | 2   |
| yes:  | 2  | 7   |

AUC (optimistic): 0.622 (positive class: yes)

AUC: 0.600 (positive class: yes)

AUC (pessimistic): 0.578 (positive class: yes)

Sin convertir los atributos numéricos a polinomiales, Naive Bayes asume distribución gaussiana.



Como no lo tiene, la predicción es menos certera:

## PerformanceVector

PerformanceVector:

accuracy: 64.29%

ConfusionMatrix:

True: no yes

no: 1 1

yes: 4 8

precision: 66.67% (positive class: yes)

ConfusionMatrix:

True: no yes

no: 1 1

yes: 4 8

recall: 88.89% (positive class: yes)

ConfusionMatrix:

True: no yes

no: 1 1

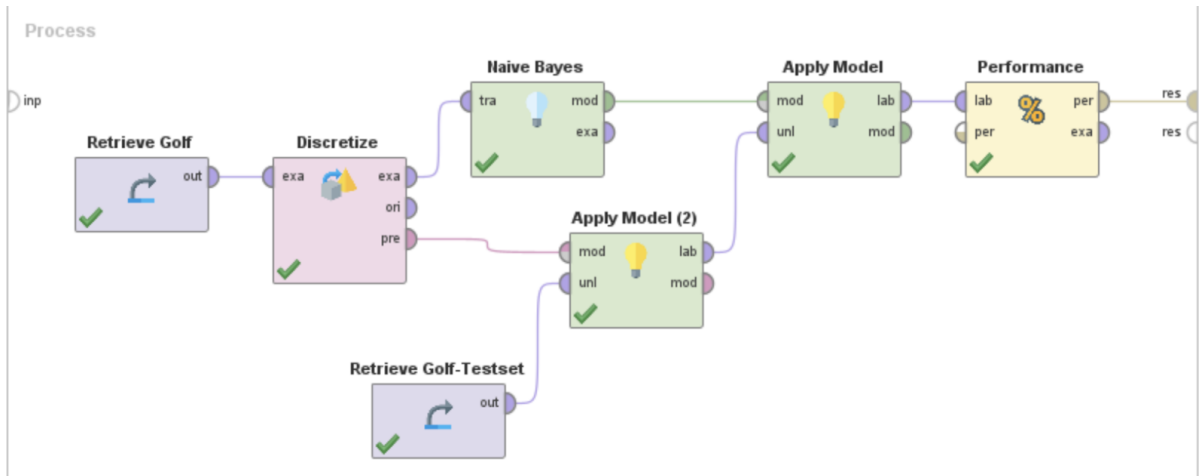
yes: 4 8

AUC (optimistic): 0.467 (positive class: yes)

AUC: 0.467 (positive class: yes)

AUC (pessimistic): 0.467 (positive class: yes)

## - Numerical to Polynomial



Criterion  
accuracy

☒ Table View ☐ Plot View

accuracy: 64.29%

|              | true no | true yes | class precision |
|--------------|---------|----------|-----------------|
| pred. no     | 2       | 2        | 50.00%          |
| pred. yes    | 3       | 7        | 70.00%          |
| class recall | 40.00%  | 77.78%   |                 |

Open in [Turbo Prep](#) [Auto Model](#)

Filter (14 / 14 examples): all

| Row No. | Play | prediction(P... | confidence(no) | confidence(yes) | Temperature              | Humidity                 | Outlook  | Wind  |
|---------|------|-----------------|----------------|-----------------|--------------------------|--------------------------|----------|-------|
| 1       | yes  | no              | 0.725          | 0.275           | range5 [80.500 - ∞]      | range4 [82.500 - 92.500] | sunny    | false |
| 2       | no   | yes             | 0.084          | 0.916           | range4 [73.500 - 80.500] | range4 [82.500 - 92.500] | overcast | true  |
| 3       | yes  | yes             | 0.006          | 0.994           | range5 [80.500 - ∞]      | range3 [76.500 - 82.500] | overcast | false |
| 4       | yes  | yes             | 0.027          | 0.973           | range2 [66.500 - 70.500] | range5 [92.500 - ∞]      | rain     | false |
| 5       | yes  | yes             | 0.028          | 0.972           | range2 [66.500 - 70.500] | range3 [76.500 - 82.500] | rain     | true  |
| 6       | no   | no              | 0.550          | 0.450           | range1 [-∞ - 66.500]     | range1 [-∞ - 72.500]     | rain     | true  |
| 7       | yes  | yes             | 0.031          | 0.969           | range1 [-∞ - 66.500]     | range1 [-∞ - 72.500]     | overcast | true  |
| 8       | no   | no              | 0.836          | 0.164           | range3 [70.500 - 73.500] | range5 [92.500 - ∞]      | sunny    | false |
| 9       | yes  | yes             | 0.021          | 0.979           | range2 [66.500 - 70.500] | range1 [-∞ - 72.500]     | sunny    | false |
| 10      | no   | yes             | 0.322          | 0.678           | range4 [73.500 - 80.500] | range3 [76.500 - 82.500] | sunny    | false |
| 11      | yes  | yes             | 0.059          | 0.941           | range2 [66.500 - 70.500] | range1 [-∞ - 72.500]     | sunny    | true  |
| 12      | yes  | yes             | 0.254          | 0.746           | range3 [70.500 - 73.500] | range4 [82.500 - 92.500] | overcast | true  |
| 13      | no   | yes             | 0.003          | 0.997           | range5 [80.500 - ∞]      | range2 [72.500 - 76.500] | overcast | true  |
| 14      | yes  | no              | 0.703          | 0.297           | range3 [70.500 - 73.500] | range3 [76.500 - 82.500] | rain     | true  |

