# 2019103555 PRANAVA RAMAN B M S 20/09/2021

**MACHINE LEARNING LABORATORY – ONSPOT EXERCISE**

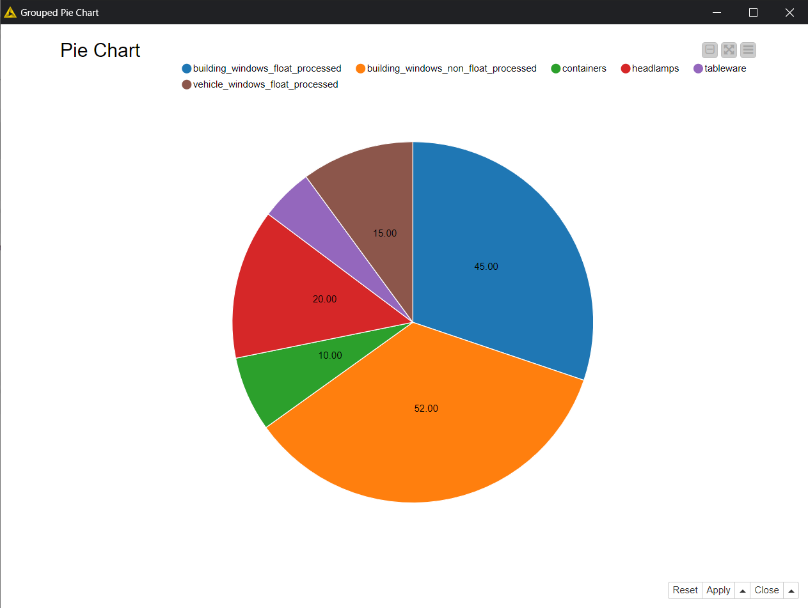
**LAB – 03 – KNIME TOOL**

**Various algorithm using Knime tool:-**

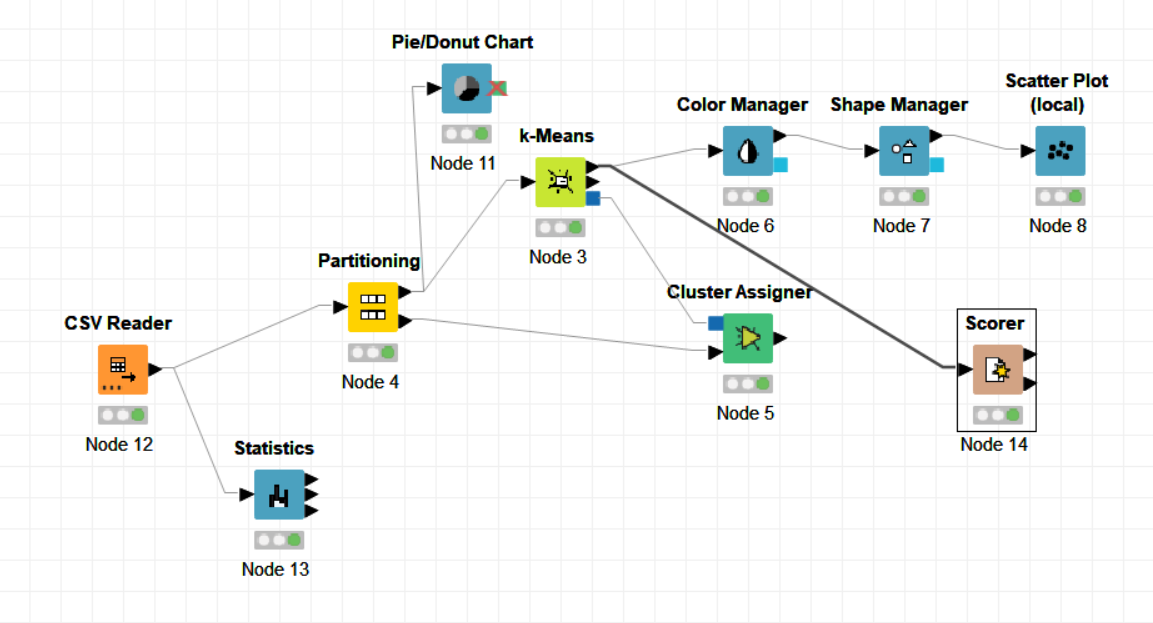
Dataset – [Index of /ml/machine-learning-databases/glass (uci.edu)](https://archive.ics.uci.edu/ml/machine-learning-databases/glass/)

Statistics:-

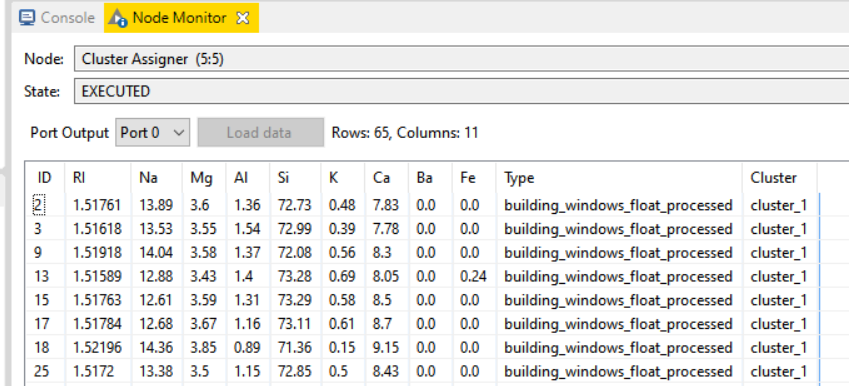
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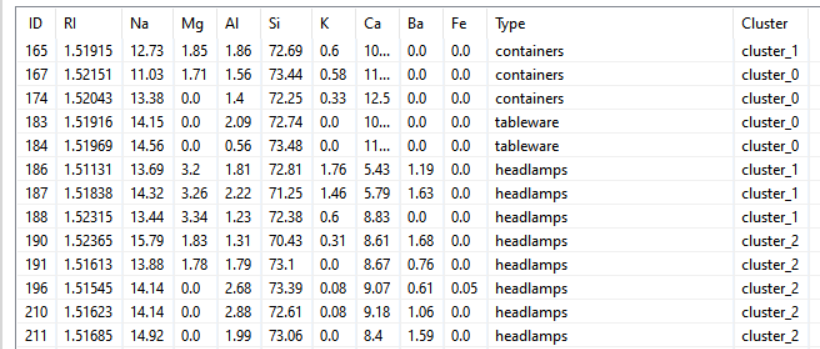


1. **Clustering algorithm (K-means)** **:-**

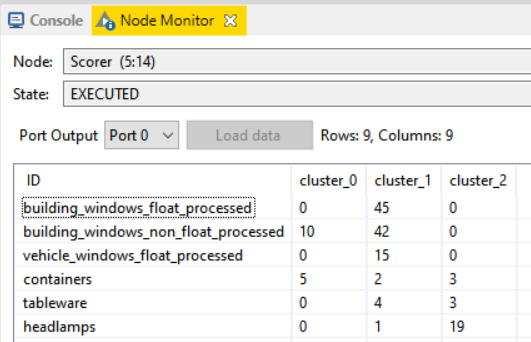


**Cluster assigner (some rows are shown):-**

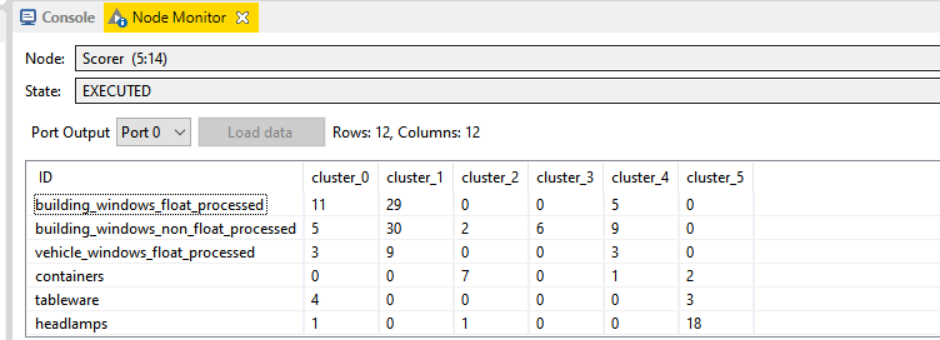




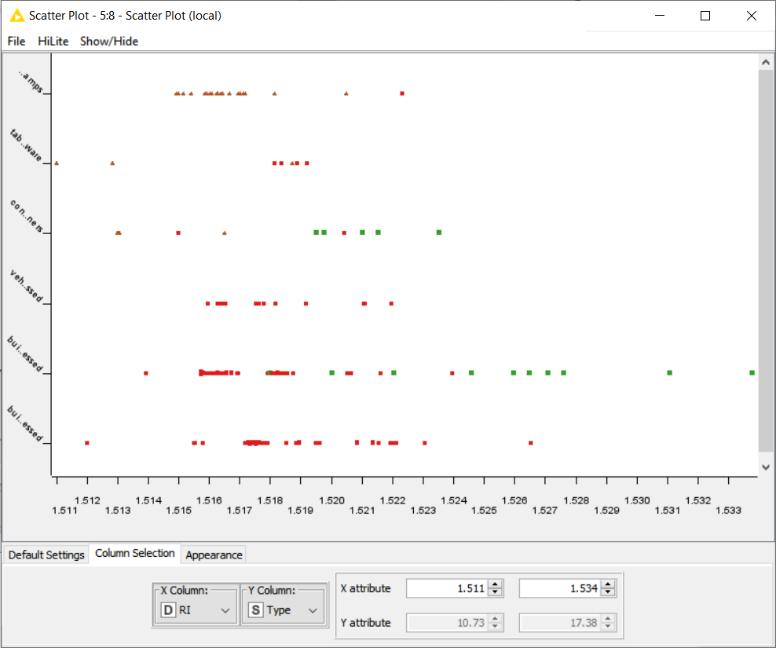
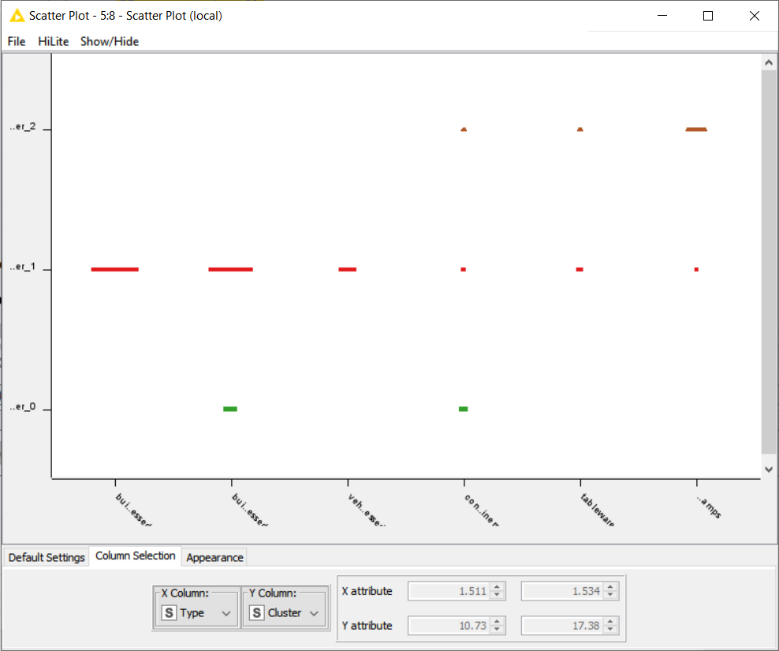
**Clustering output**

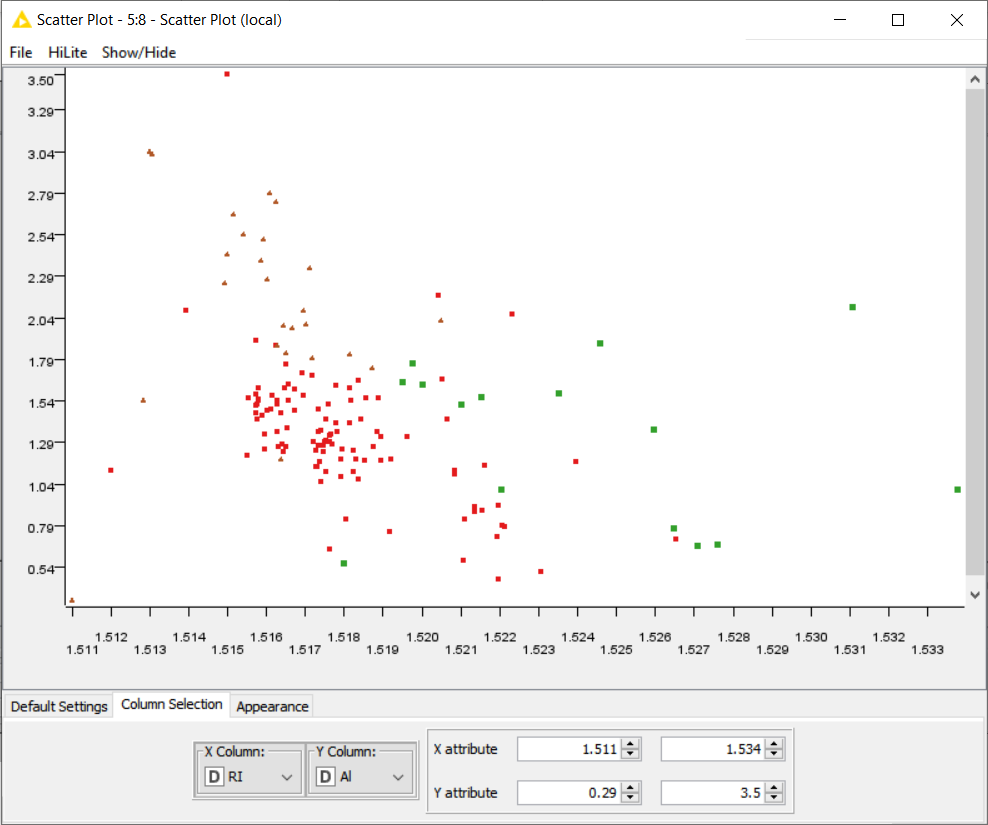


**Changing number of clusters to 6 and number of iterations to 200:-**

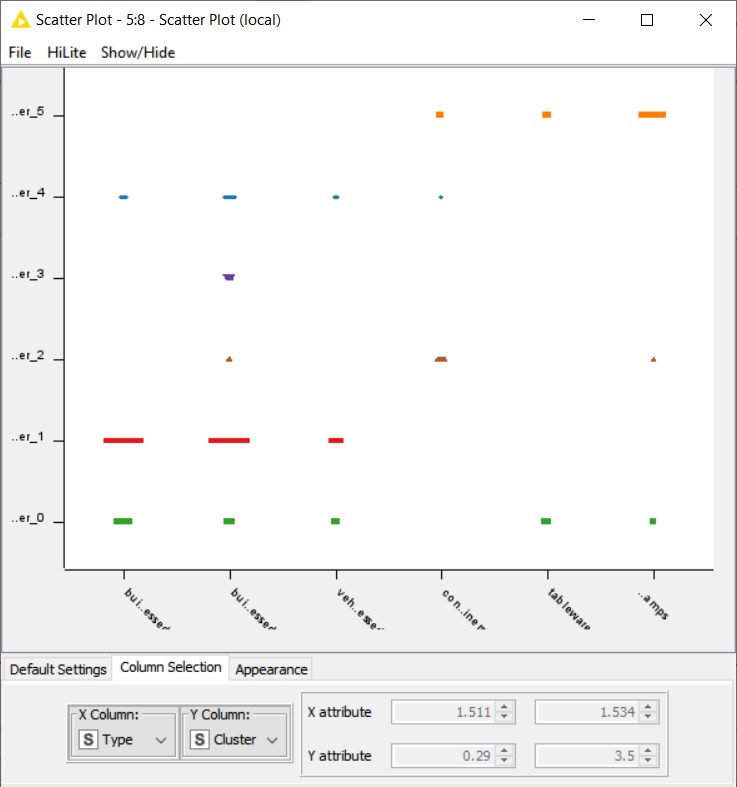
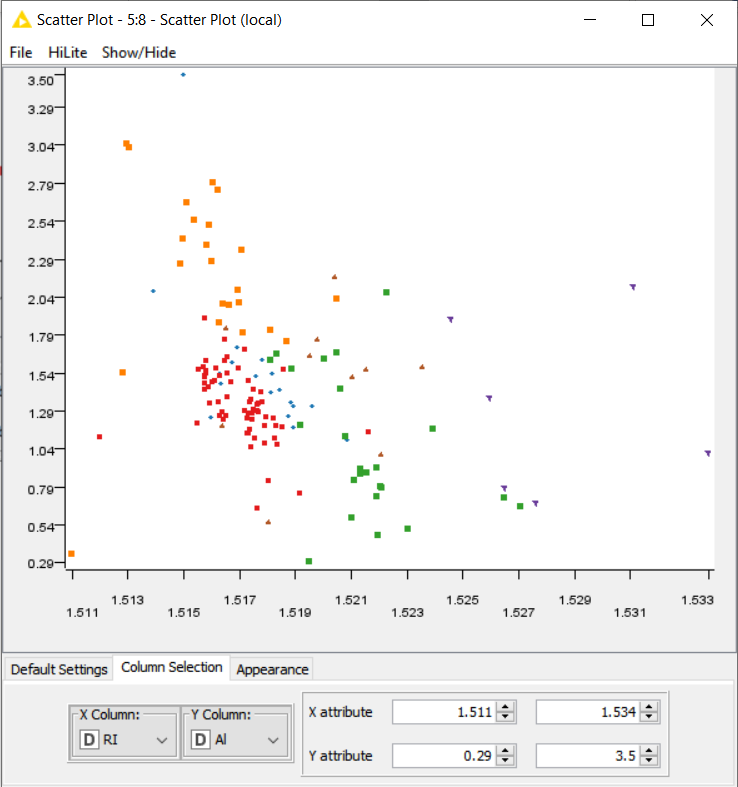


**Old Scatter Plot:-**

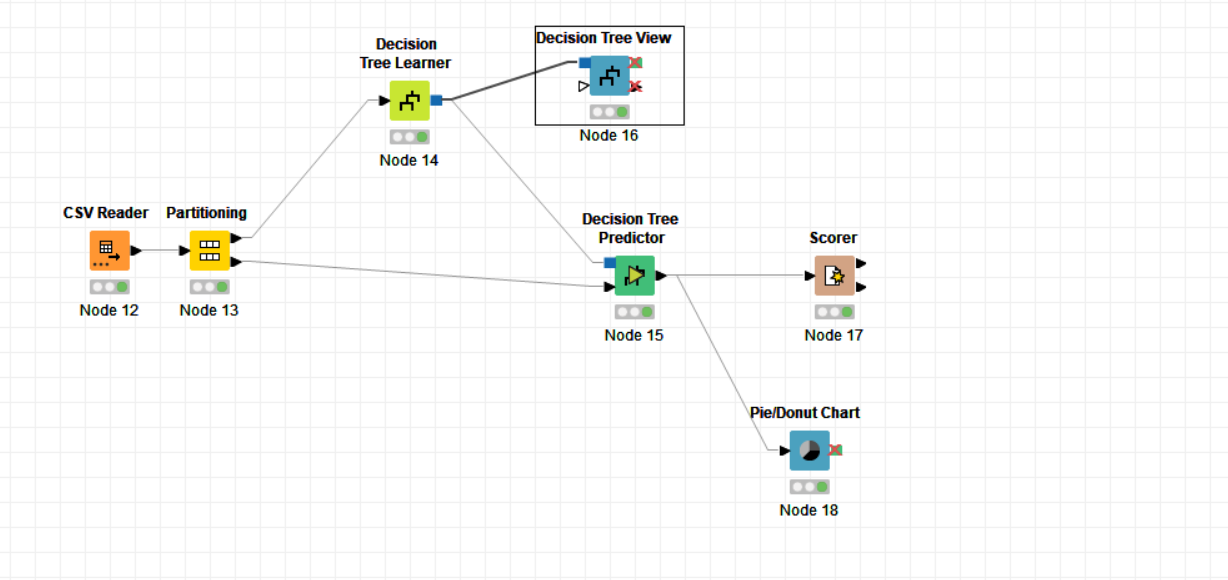




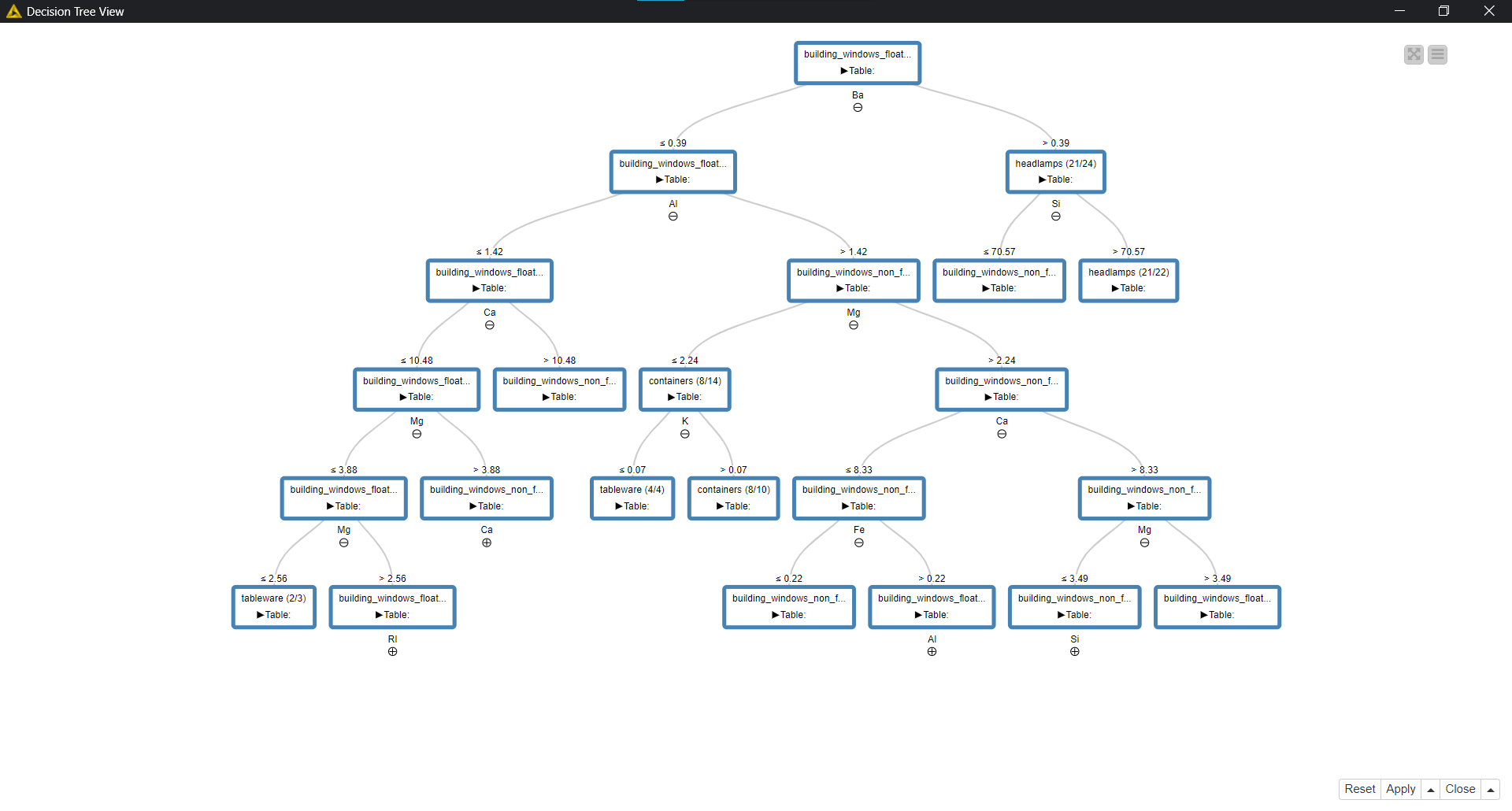
**New scatter plot:-**



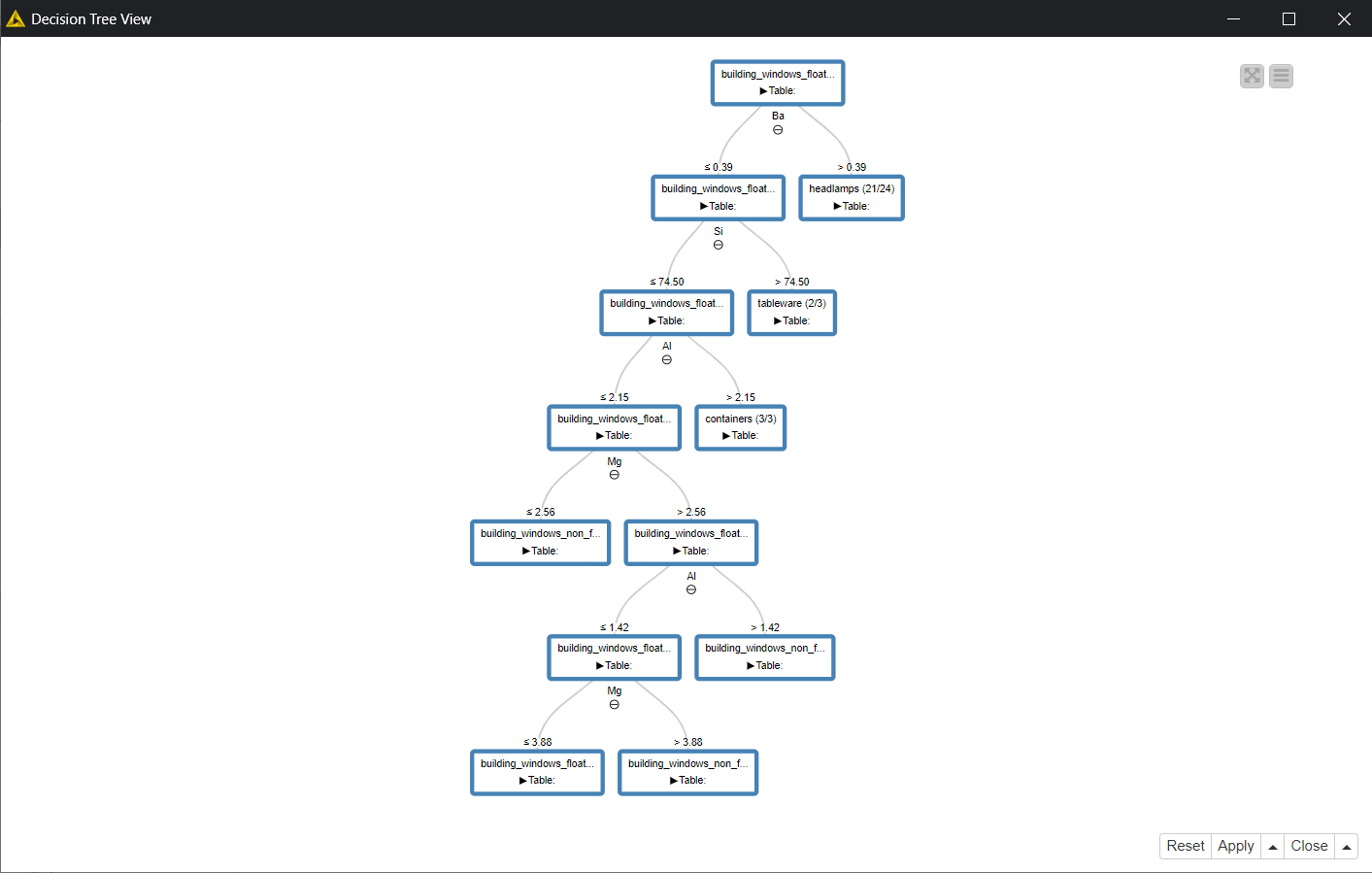
1. **Classification Algorithms (Decision tree)**



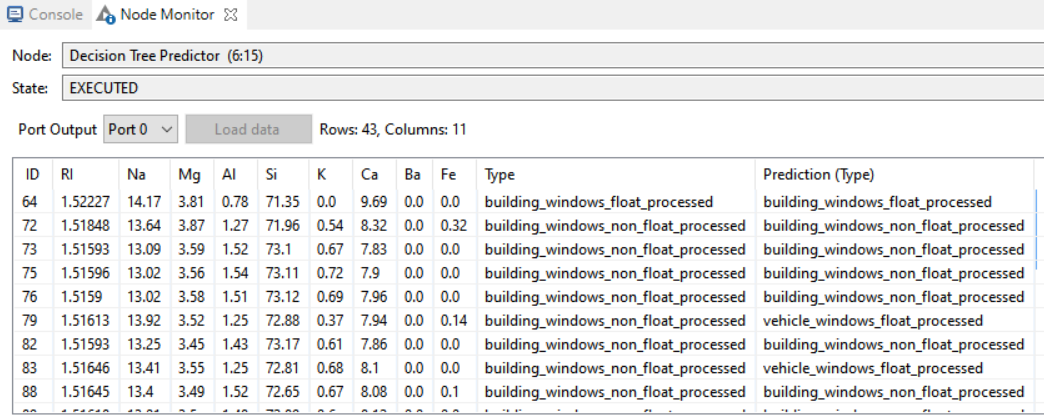
**Old Desision tree view:-**



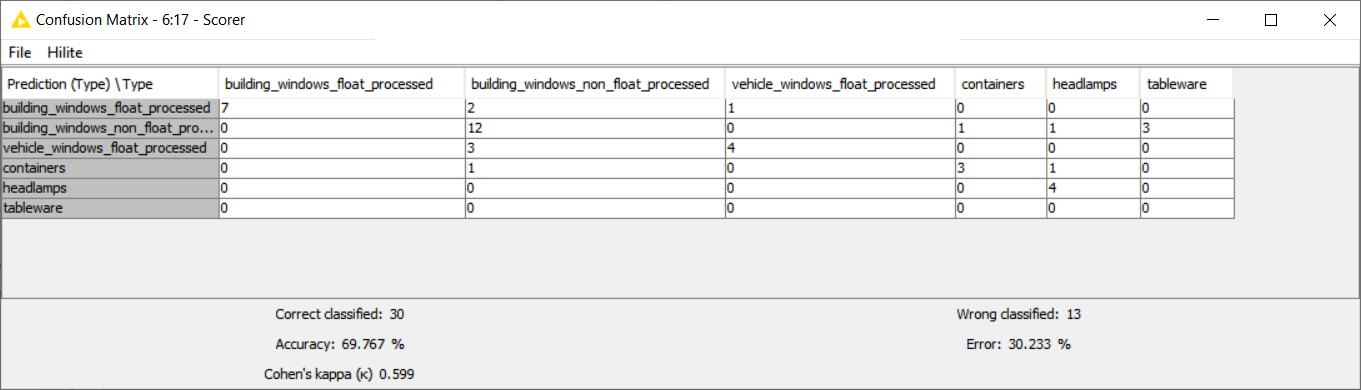
**Changing Pruning method to MDL, and quality measure to Gain ratio:-**



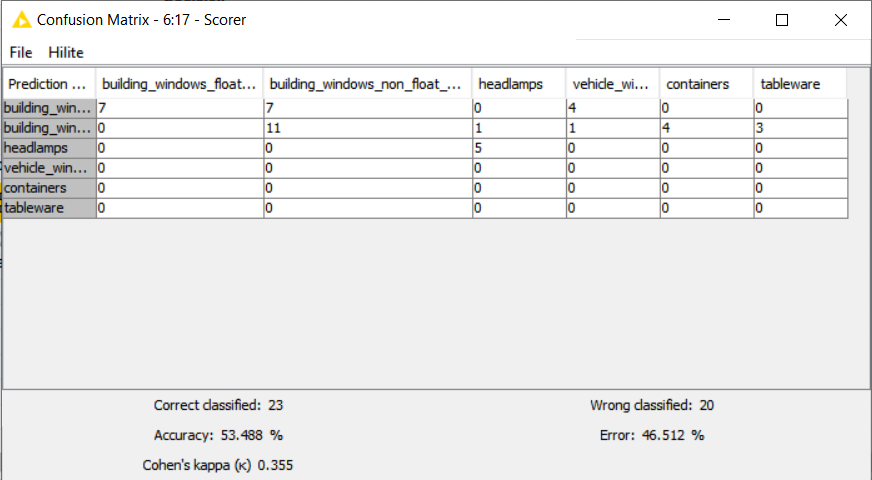
**Prediction value:-**



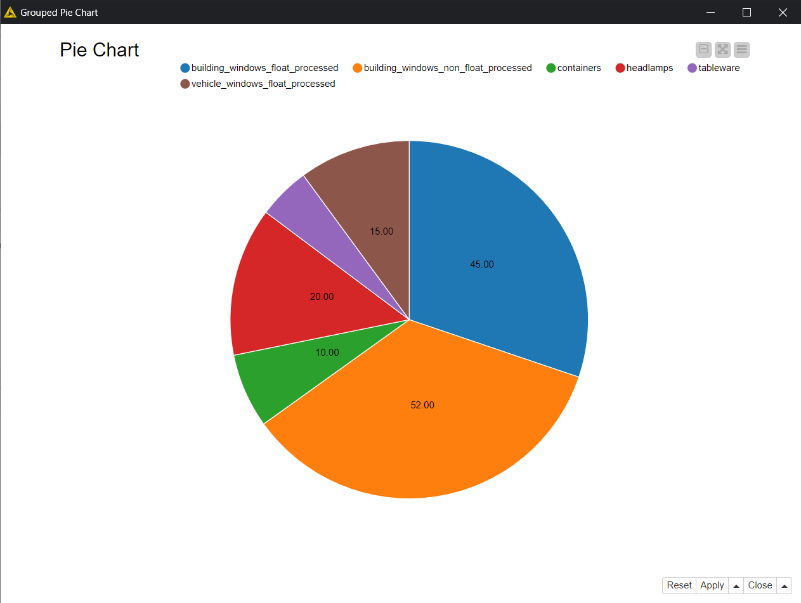
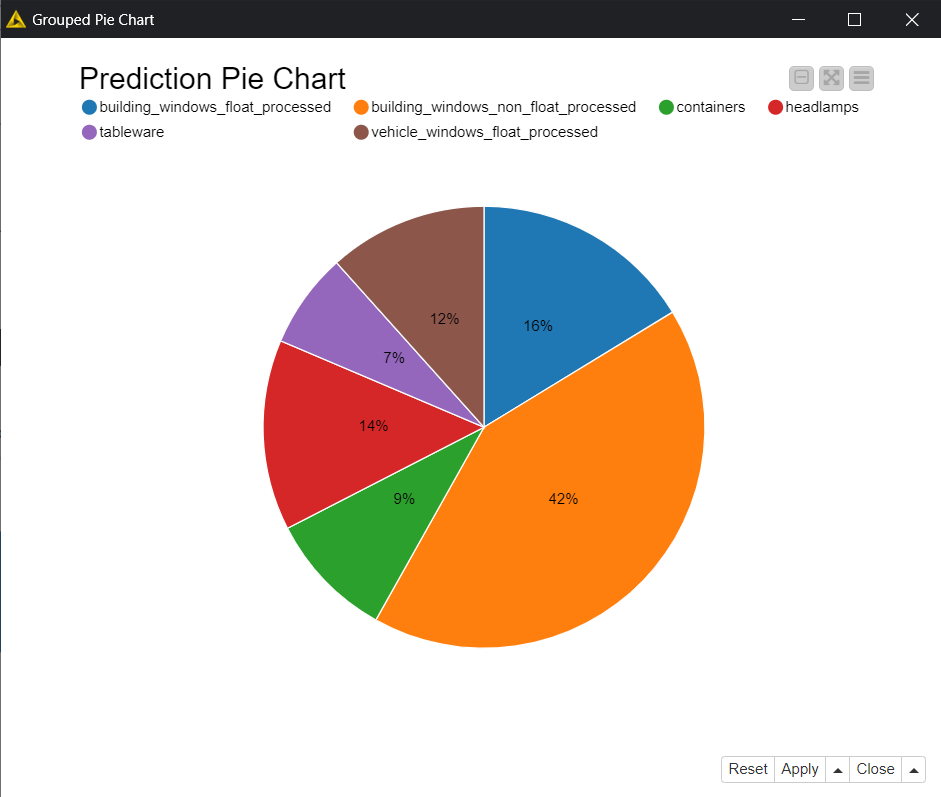
**Confusion matrix:-**



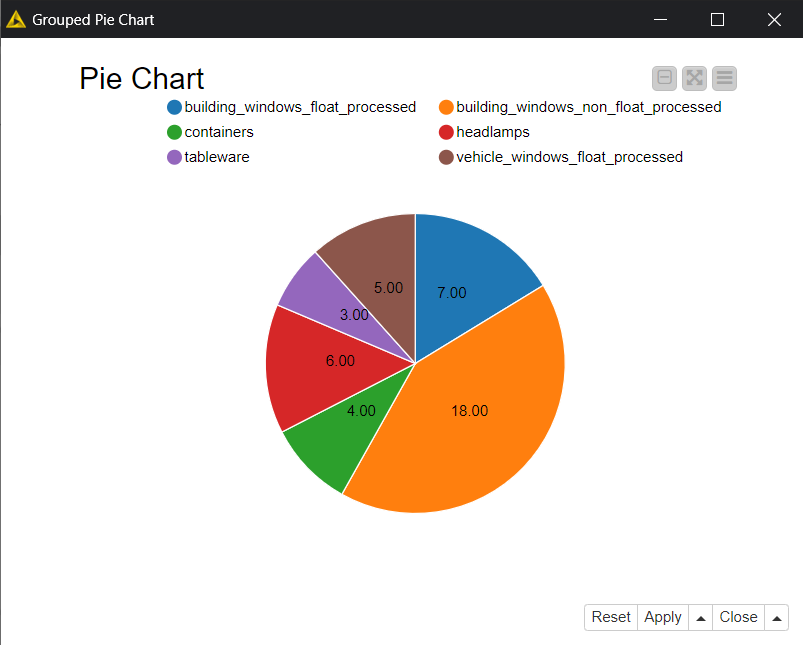
**New confusion matrix:-**



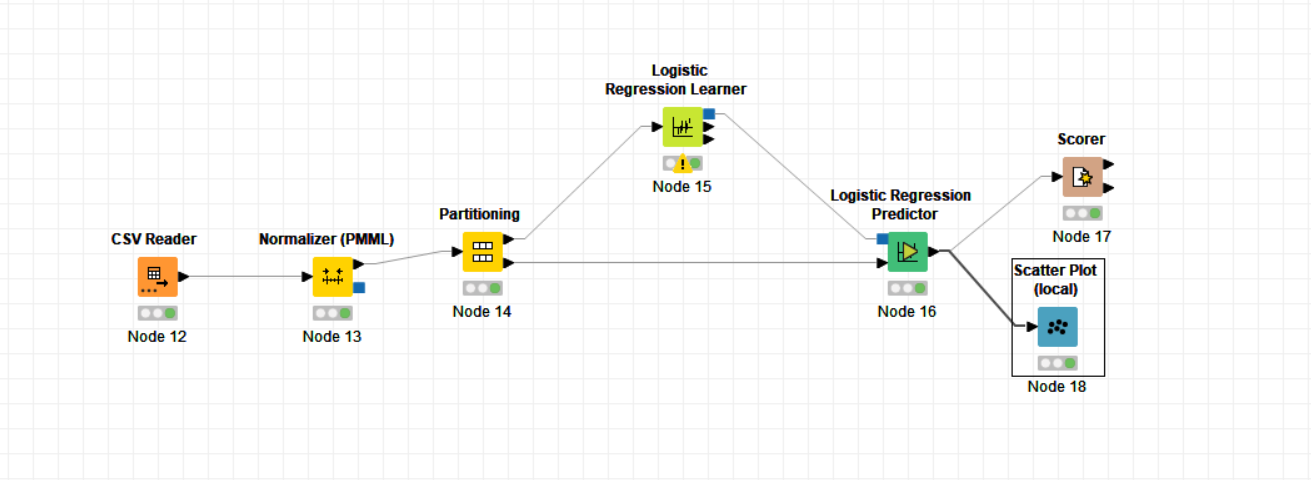
**Prediction pie chart vs normal pie chart:-**



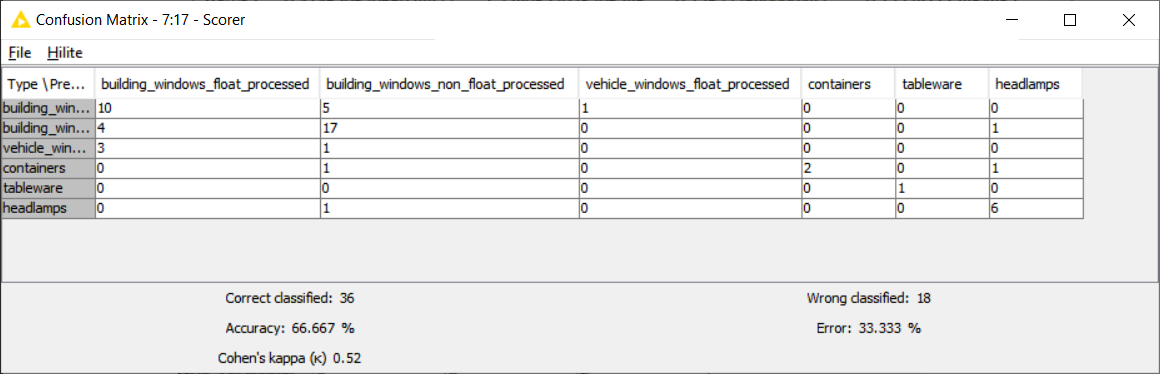
**New pie chart:-**

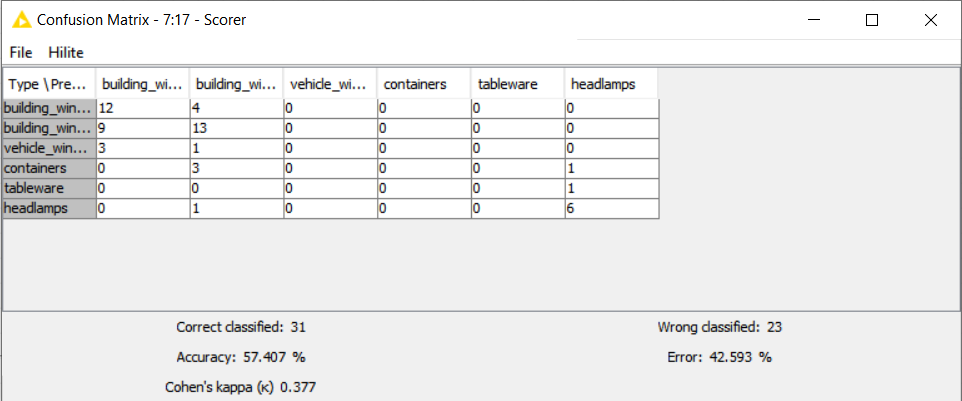


1. **Logistic Regression**

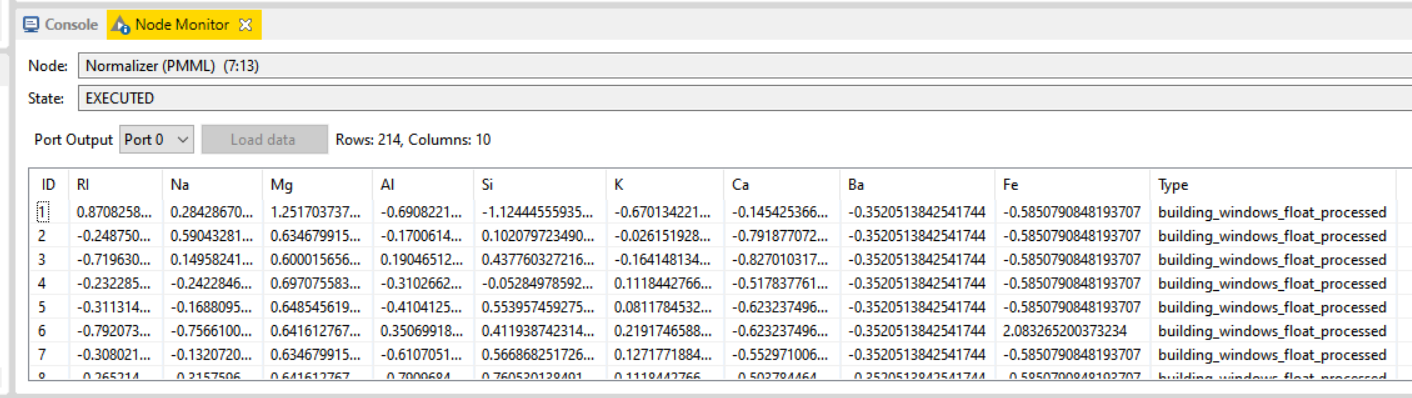


**Confusion matrix:-**



**New confusion matrix on changing epsilon to 2\*10^-5, Learning strategy = Line search and Prior = gauss**

**Normalized output:-**



**Pie chart:-**

