

# EXPERIMENT-7

## DATASEGMENTATION BY EXPECTATION MAXIMISATION ALGORITHM THROUGH WEKA

### OUTPUT:

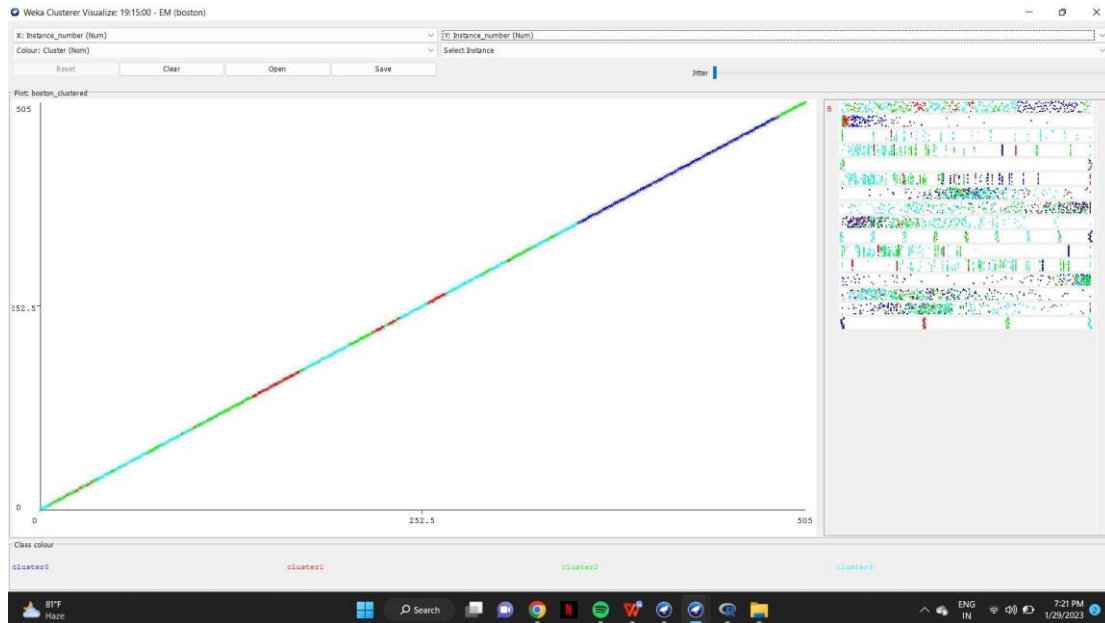
The screenshot shows the Weka Explorer interface with the EM algorithm selected. The 'Clusterer output' pane displays the following information:

```
=== Run information ===  
Scheme: weka.clusterers.EM -I 100 -N -1 -X 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6 -M 1.0E-6 -X 10 -sum-slots 1 -S 100  
Relation: boston  
Instances: 506  
Attributes: 14  
CRIM  
INDUS  
NOX  
DIS  
RAD  
TAX  
PTRATIO  
B  
LSTAT  
MEDV  
Test mode: evaluate on training data  
  
=== Clustering model (full training set) ===  
  
EM  
==  
Number of clusters selected by cross validation: 4  
Number of iterations performed: 2  
  
Cluster  
Attribute 0 1 2 3  
CRIM (0.26) (0.15) (0.27) (0.32)
```

The screenshot shows the Weka Explorer interface with the EM algorithm selected. The 'Clusterer output' pane displays the following information:

```
Cluster  
Attribute 0 1 2 3  
CRIM (0.26) (0.15) (0.27) (0.32)  
=====
```

Attribute	Cluster	0	1	2	3
CRIM	mean	12.7553	1.1868	0.3136	0.0777
	std. dev.	12.9517	0.9556	0.302	0.0611
INDUS	mean	0	3.7331	1.0664	32.4014
	std. dev.	23.3225	7.5331	4.8133	31.0823
DIS	mean	18.1	12.2003	12.186	4.1504
	std. dev.	0	6.7691	6.1655	1.6630
NOX	mean	125	63.0464	129.5664	157.3872
	std. dev.	9	13.9133	8.1225	7.9639
[total]		134	76.9594	137.6893	165.3511
CRIM	mean	0.6724	0.431	0.5316	0.4438
	std. dev.	0.0608	0.1341	0.0554	0.0335
INDUS	mean	6.0222	6.5432	6.0248	6.5939
	std. dev.	0.7157	0.9506	0.3228	0.5807
DIS	mean	89.8053	84.0763	72.0378	41.0622
	std. dev.	12.5779	17.1566	24.7759	20.5683
NOX	mean	2.0613	2.6406	3.5132	5.9599
	std. dev.	0.6156	1.0966	1.271	1.9273
CRIM	mean	1	1.1751	5.9089	15.916



## K-MEANS:

