Esercitazione 3 Eccezioni.

■ *Definire una classe ClusteringRadiusException per modellare una **eccezione controllata** da considerare qualora l'algoritmo di clustering generi un solo cluster*

In tale caso l'oggetto eccezione va creato e sollevato nella implementazione del metodo compute(...).

```
public int compute(Data data) throws ClusteringRadiusException   // da Modificare
```

Comportamento: Se le tuple sono tutte raggruppate in un unico cluster si crea l'oggetto eccezione e lo si espelle dal contesto corrente

L'oggetto eccezione deve essere propagato fino al main (seguendo lo stack delle chiamate). Il gestore di tale eccezione deve essere opportunamente definito nel main della classe MainTest.

■ *Definire una classe EmptyDatasetException per modellare una **eccezione controllata** da considerare qualora il dataset sia vuoto. Capire dove sollevare/gestire tale eccezione*

Esempi di output:

```
0:sunny,hot,high,weak,no
1:sunny,hot,high,strong,no
2:overcast,hot,high,weak,yes
3:rain,mild,high,weak,yes
4:rain,cool,normal,weak,yes
5:rain,cool,normal,strong,no
6:overcast,cool,normal,strong,yes
7:sunny,mild,high,weak,no
8:sunny,cool,normal,weak,yes
9:rain,mild,normal,weak,yes
10:sunny,mild,normal,strong,yes
11:overcast,mild,high,strong,yes
12:overcast,hot,normal,weak,yes
13:rain,mild,high,strong,no

Insert radius (>0)=
```

```
-1
Insert radius (>0)=
0
Insert radius (>0)=
1
Number of clusters:9
0:Centroid=(sunny hot high weak no )
Examples:
[sunny hot high weak no ] dist=0.0
[sunny hot high strong no ] dist=1.0
[sunny mild high weak no ] dist=1.0

AvgDistance=0.6666666666666666
1:Centroid=(rain cool normal weak yes )
Examples:
[rain cool normal weak yes ] dist=0.0
[sunny cool normal weak yes ] dist=1.0
[rain mild normal weak yes ] dist=1.0

AvgDistance=0.6666666666666666
2:Centroid=(overcast hot high weak yes )
Examples:
[overcast hot high weak yes ] dist=0.0
[overcast hot normal weak yes ] dist=1.0

AvgDistance=0.5
3:Centroid=(rain mild high weak yes )
Examples:
[rain mild high weak yes ] dist=0.0

AvgDistance=0.0
4:Centroid=(rain cool normal strong no )
Examples:
[rain cool normal strong no ] dist=0.0

AvgDistance=0.0
5:Centroid=(overcast cool normal strong yes )
Examples:
[overcast cool normal strong yes ] dist=0.0

AvgDistance=0.0
6:Centroid=(sunny mild normal strong yes )
Examples:
[sunny mild normal strong yes ] dist=0.0

AvgDistance=0.0
7:Centroid=(overcast mild high strong yes )
Examples:
[overcast mild high strong yes ] dist=0.0

AvgDistance=0.0
8:Centroid=(rain mild high strong no )
Examples:
[rain mild high strong no ] dist=0.0

AvgDistance=0.0

New execution?(y/n)
y
Insert radius (>0)=
4
```

```
14 tuples in one cluster!
New execution?(y/n)
y
Insert radius (>0)=
2
Number of clusters:3
0:Centroid=(rain mild high weak yes )
Examples:
[overcast hot high weak yes ] dist=2.0
[rain mild high weak yes ] dist=0.0
[rain cool normal weak yes ] dist=2.0
[sunny mild high weak no ] dist=2.0
[rain mild normal weak yes ] dist=1.0
[overcast mild high strong yes ] dist=2.0
[rain mild high strong no ] dist=2.0

AvgDistance=1.5714285714285714
1:Centroid=(overcast cool normal strong yes )
Examples:
[rain cool normal strong no ] dist=2.0
[overcast cool normal strong yes ] dist=0.0
[sunny cool normal weak yes ] dist=2.0
[sunny mild normal strong yes ] dist=2.0
[overcast hot normal weak yes ] dist=2.0

AvgDistance=1.6
2:Centroid=(sunny hot high weak no )
Examples:
[sunny hot high weak no ] dist=0.0
[sunny hot high strong no ] dist=1.0

AvgDistance=0.5

New execution?(y/n)
n
```