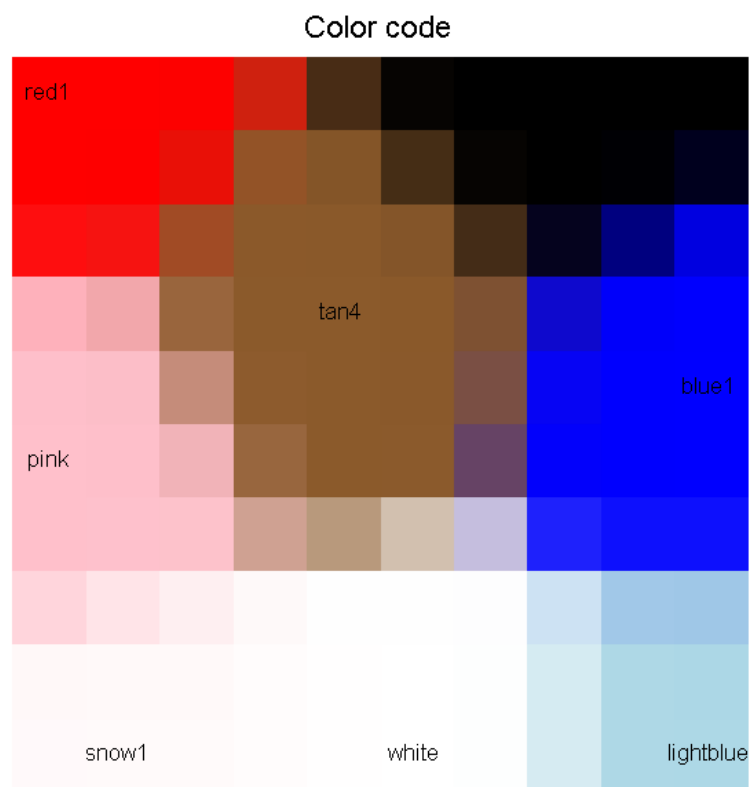# Data Mining 2
TP3 - Self Organizing Map

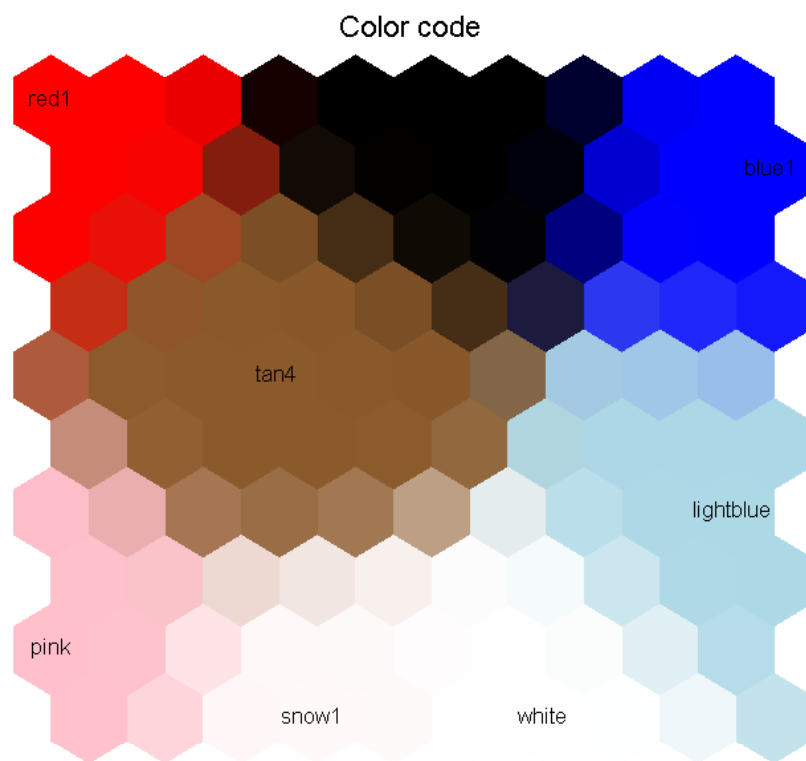Thomas Robert

Couleurs

```
1  clc
2  clear all
3  close all
4
5  color_rgb = [ 0 0 0;
6          0 0 255
7          173 216 230;
8          255 192 203;
9          255 0 0;
10          255 250 250;
11          139 90 43;
12          255 255 255;] ;
13
14 color_id={'black';
15 'blue1';
16 'lightblue';
17 'pink';
18 'red1';
19 'snow1';
20 'tan4';
21 'white';};
22
23 nv=length(color_id);
24
25 sD=som_data_struct(color_rgb,'labels',color_id);
26
27 figure(1)
28 sM = som_make(sD,'lattice','rect','msize',[10 10]);
29 sM = som_autolabel(sM,sD);
30 som_show(sM, 'color', sM.codebook/255);
31 % colormap('copper');
32 hold on
33 som_grid(sM,'Label',sM.labels,'Labelsize',8,'Line','none','Marker','none','Labelcolor','k');
34 hold off
35 %
36 %
37 figure(2)
38 sM = som_make(sD,'lattice','hexa','msize',[10 10]);
39 sM = som_autolabel(sM,sD);
40 som_show(sM, 'color', sM.codebook/255);
41 hold on
42 som_grid(sM,'Label',sM.labels,'Labelsize',8,'Line','none','Marker','none','Labelcolor','k');
43 hold off
```

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Villes de France

```matlab
% clear all

temps=dlmread('temps.csv');
villes={'Bordeaux';
'Brest';
'Clermont';
'Grenoble';
'Lille';
'Lyon';
'Marseille';
'Montpellier';
'Nantes';
'Nice';
'Paris';
'Rennes';
'Strasbourg';
'Toulouse';
'Vichy'};

nv=length(villes);

sD=som_data_struct(temps(:,1:12),'labels',villes);

figure(1)
sM = som_make(sD,'lattice','rect','msize',[10 10]);
sM = som_autolabel(sM,sD);
% som_show(sM,'umat','all');
som_show(sM);
colormap('copper');
hold on
som_grid(sM,'Label',sM.labels,'Labelsize',8,'Line','none','Marker','none','Labelcolor','w');
hold off


figure(2)
sM = som_make(sD,'lattice','hexa','msize',[10 10]);
sM = som_autolabel(sM,sD);
som_show(sM,'umat','all');
colormap('copper');
hold on
som_grid(sM,'Label',sM.labels,'Labelsize',8,'Line','none','Marker','none','Labelcolor','w');
hold off
```

U-matrix

6.58
3.32
0.0705

Variable1

7.49
3.96
0.434

d

Variable2

1.54
8.49
5.01
1.54

d

Variable3

10.8
8.22
5.64

d

Variable4

11.1
8.93

d

Variable5

16.8
14.2
11.6

d

Variable6

17.6
14.4

d

Variable7

15.6
23.3
19.5
15.6

d

Variable8

22.8
19.4
16

d

Variable9

17.5
14.7

d

Variable10

12.8
9.54

d

Variable11

8.21
4.94

d

Variable12

Strasbourg Vichy Brest
Grenoble Clermont Rennes
Nantes
Lyon Toulouse
Bordeaux
Marseille Montpellier Nice

1.33
8.19
4.76
1.33

d

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U-matrix

2.99
0.09
5.88
2.99
0.09
5.88
2.99
0.09
5.88
2.99
0.09

SOM 14-Apr-2015