Cours 8, question 2,3,4

```
In[62]:=  L = Table[Random[Integer, {0, 40}] / 2., {k, 1, 42}]

Out[62]=  {5., 16.5, 0, 8., 15.5, 17., 4., 15.5, 12.5, 15., 12.5, 5., 13.5,
          14.5, 0, 1.5, 8.5, 5.5, 18.5, 9., 3.5, 1.5, 1.5, 5.5, 4.5, 3.5, 6., 19.5,
          9.5, 12., 7.5, 13.5, 13.5, 14.5, 16., 15., 5.5, 19.5, 18., 20., 0, 5.}

In[63]:=  M = {}

Out[63]=  {}

In[64]:=  While[
           L ≠ {},
           a = L[[1]];
           k0 = 1;
           Do[
            If[L[[k]] < a, a = L[[k]]; k0 = k],
             {k, 1, Length[L]}];
           L = Delete[L, k0];
           M = Prepend[M, a]
          ]

In[65]:=  M

Out[65]=  {20., 19.5, 19.5, 18.5, 18., 17., 16.5, 16., 15.5, 15.5, 15., 15.,
          14.5, 14.5, 13.5, 13.5, 13.5, 12.5, 12.5, 12., 9.5, 9., 8.5, 8., 7.5,
          6., 5.5, 5.5, 5.5, 5., 5., 5., 4.5, 4., 3.5, 3.5, 1.5, 1.5, 1.5, 0, 0, 0}
```

Question 5

```
In[66]:=  P = {{M[[1]], 1}}

Out[66]=  {{20., 1}}

In[67]:=  k0 = 1;

In[68]:=  Do[
           If[M[[k]] != M[[k - 1]], k0 = k];
           P = Append[P, {M[[k]], k0}],
           {k, 2, Length[M]}]
```

In[69]:= **P // TableForm**

Out[69]//TableForm=

20.	1
19.5	2
19.5	2
18.5	4
18.	5
17.	6
16.5	7
16.	8
15.5	9
15.5	9
15.	11
15.	11
14.5	13
14.5	13
13.5	15
13.5	15
13.5	15
12.5	18
12.5	18
12.	20
9.5	21
9.	22
8.5	23
8.	24
7.5	25
6.	26
5.5	27
5.5	27
5.5	27
5.	30
5.	30
5.	30
4.5	33
4.	34
3.5	35
3.5	35
1.5	37
1.5	37
1.5	37
0	40
0	40
0	40