

Start: **A**

A.CIId = Unclassified

ExpandiereCluster (DB, A, 1, 1.1, 3)

Unclassified

A B C D E F G H I J
 K L M N O P Q R S T

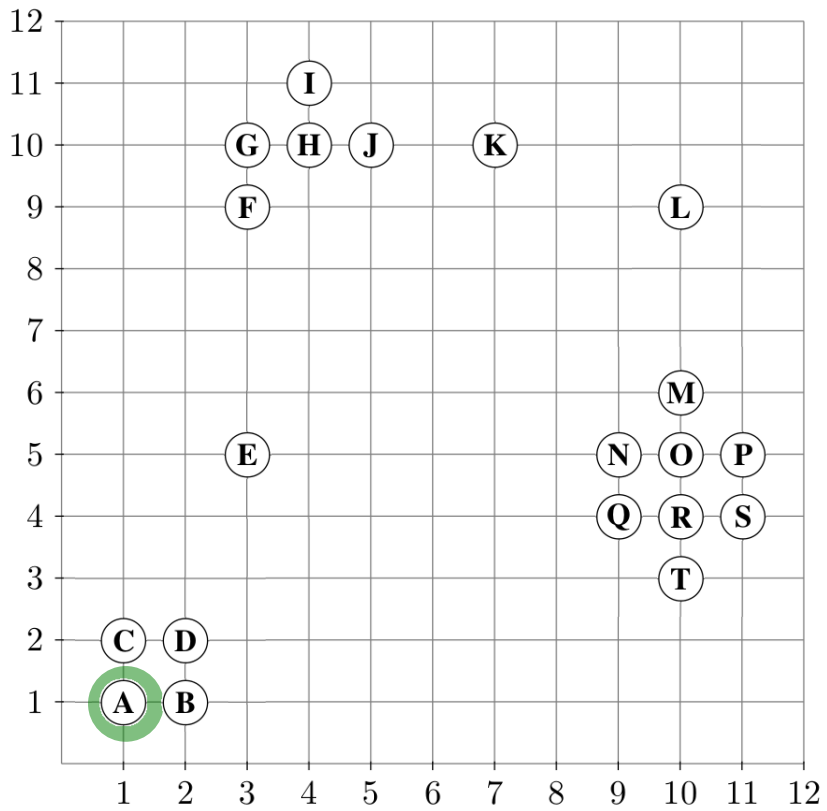
Noise

Seeds

Cluster 1:

Cluster 2:

Cluster 3:



Start: **A**

Seeds := RQ (A, 1.1)

Unclassified

A **B** **C** **D** **E** **F** **G** **H** **I** **J**
K **L** **M** **N** **O** **P** **Q** **R** **S** **T**

Noise

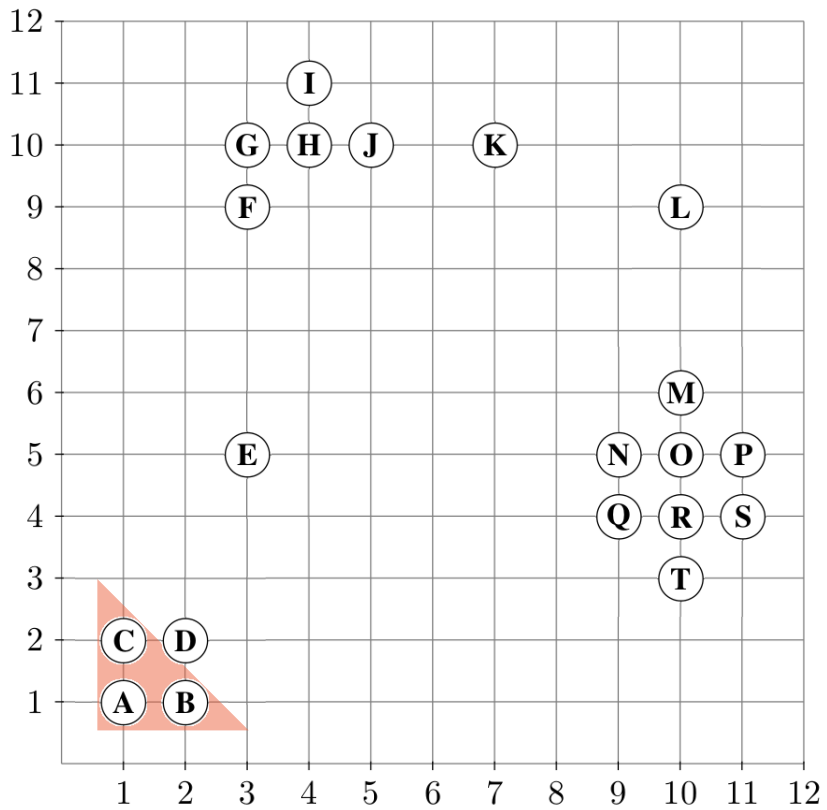
Seeds

A **B** **C**

Cluster 1:

Cluster 2:

Cluster 3:



Cluster: (A) (B) (C)

Forall o in Seeds: o.ClId := ClusterId
 Entferne Startobjekt aus Seeds

Unclassified
 (D) (E) (F) (G) (H) (I) (J)
 (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T)

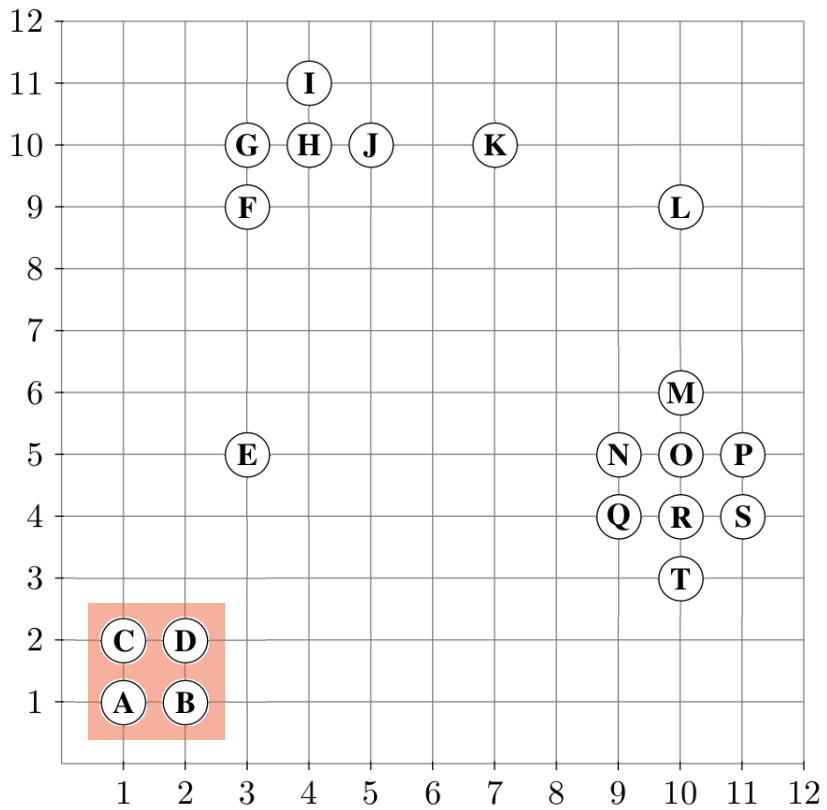
Noise

Seeds
 (B) (C)

Cluster 1: A, B, C

Cluster 2:

Cluster 3:



Punkt: **(B)**

While Seeds != empty do
 RQ (B, 1.1) = {A, B, D}

A.CIId = 1. fertig

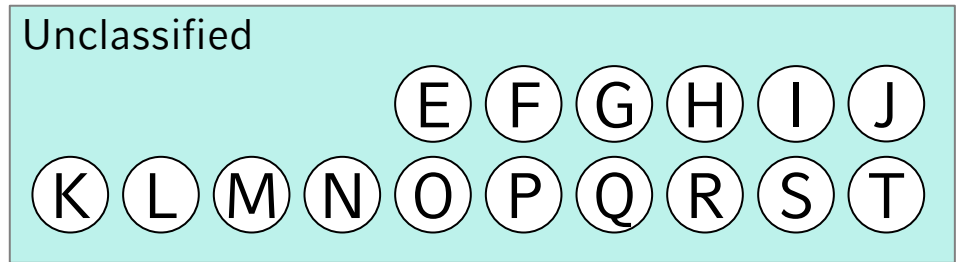
B.CIId = 1. fertig

D.CIId = Unclassified →

Seeds += D

D.CIId = 1

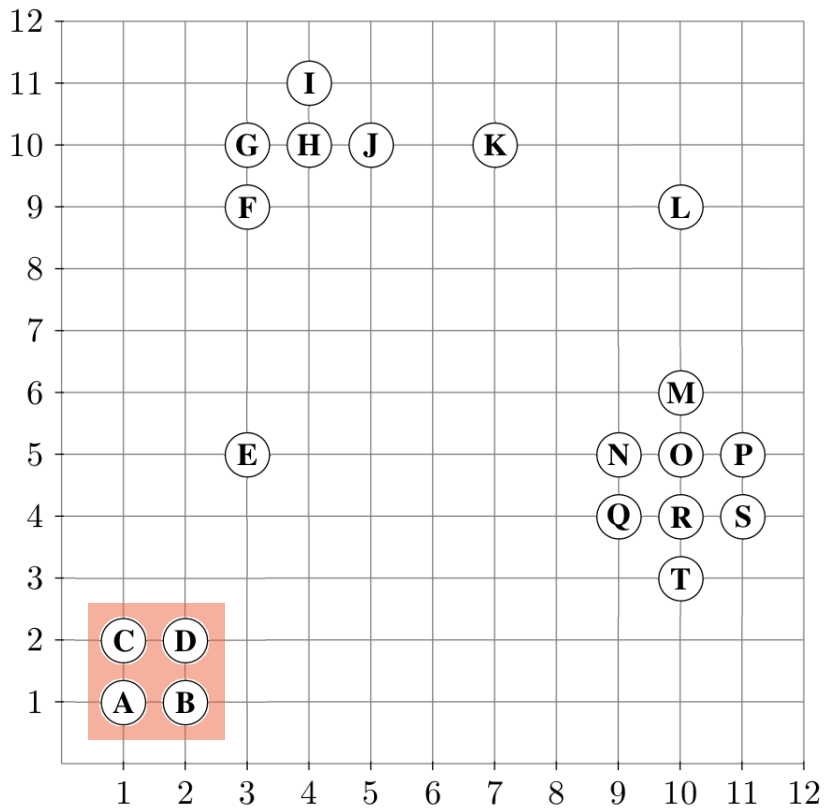
Entferne B aus Seeds



Cluster 1: A, B, C, D

Cluster 2:

Cluster 3:

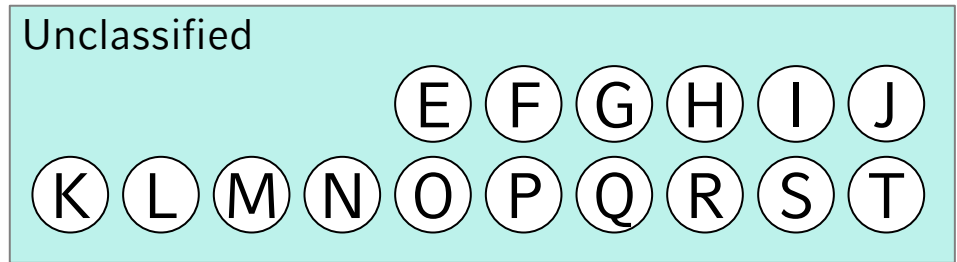


Punkt: **C**

While Seeds != empty do
 RQ (C, 1.1) = {A, C, D}

A.Clld = 1. fertig
 C.Clld = 1. fertig
 D.Clld = 1. fertig

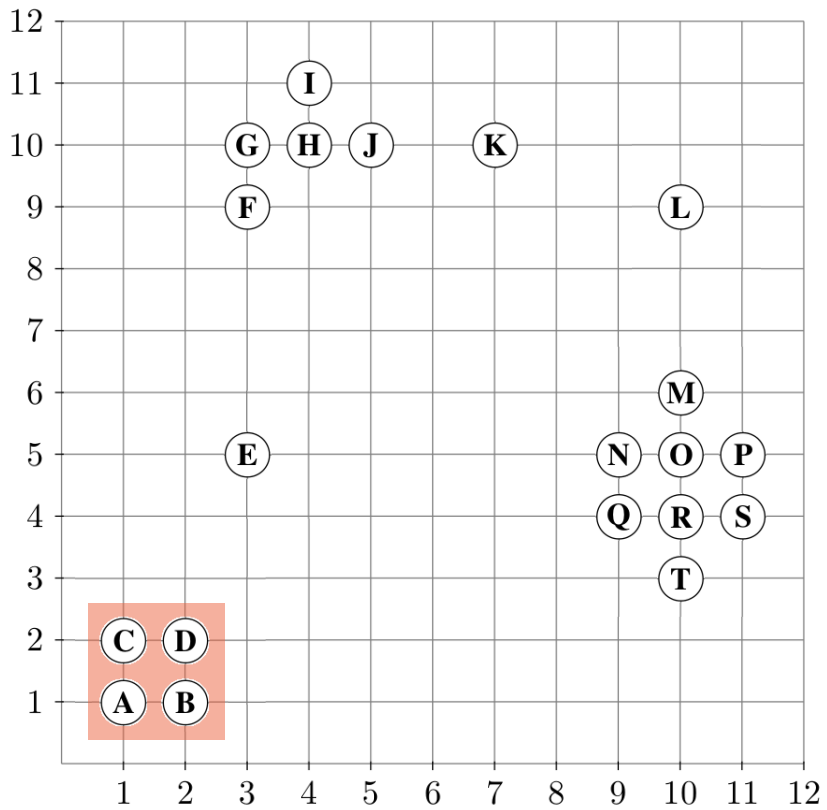
Entferne C aus Seeds



Cluster 1: A, B, C, D

Cluster 2:

Cluster 3:

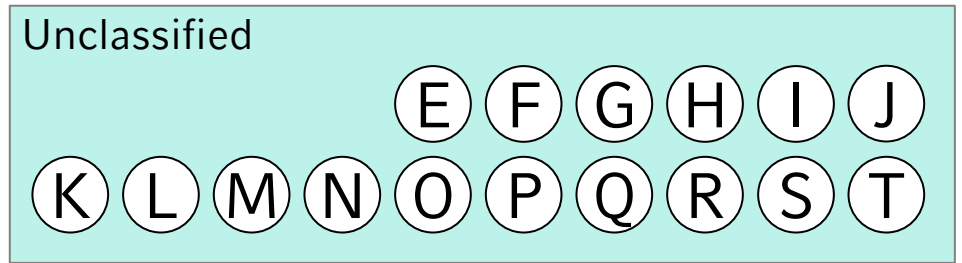


Punkt: **(D)**

While Seeds != empty do
 RQ (D, 1.1) = {B, C, D}

B.Clld = 1. fertig
 C.Clld = 1. fertig
 D.Clld = 1. fertig

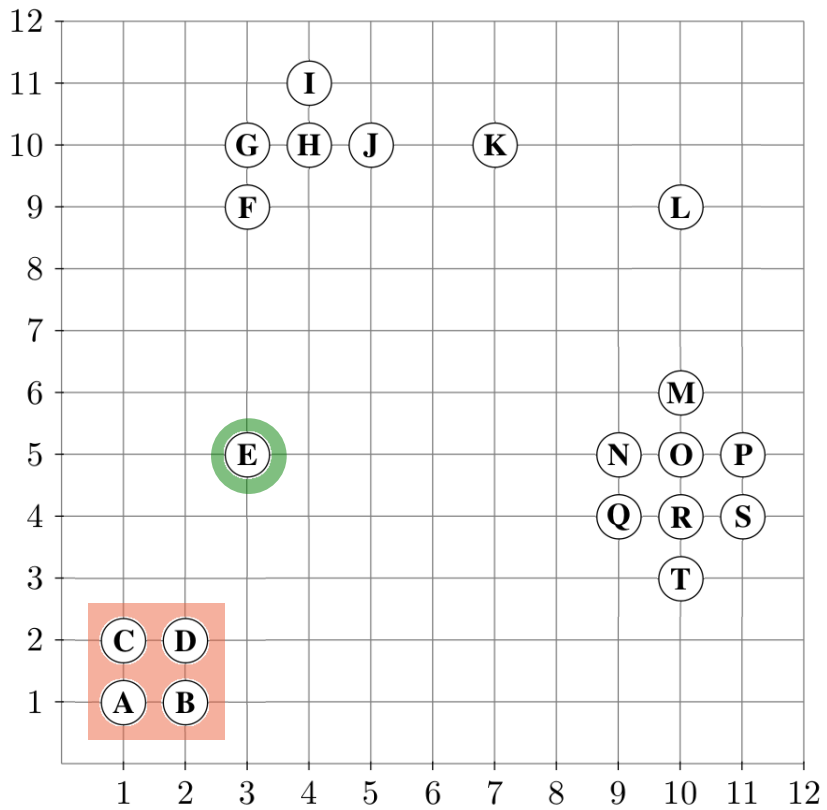
Entferne D aus Seeds



Cluster 1: A, B, C, D

Cluster 2:

Cluster 3:

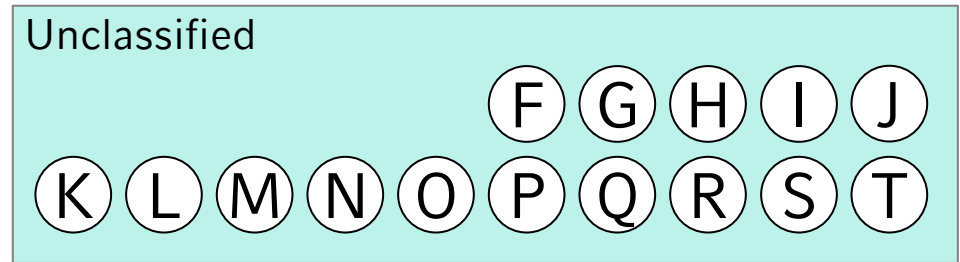


Start: **E**

E.CId = Unclassified

ExpandiereCluster (DB, E, 2, 1.1, 3) = false

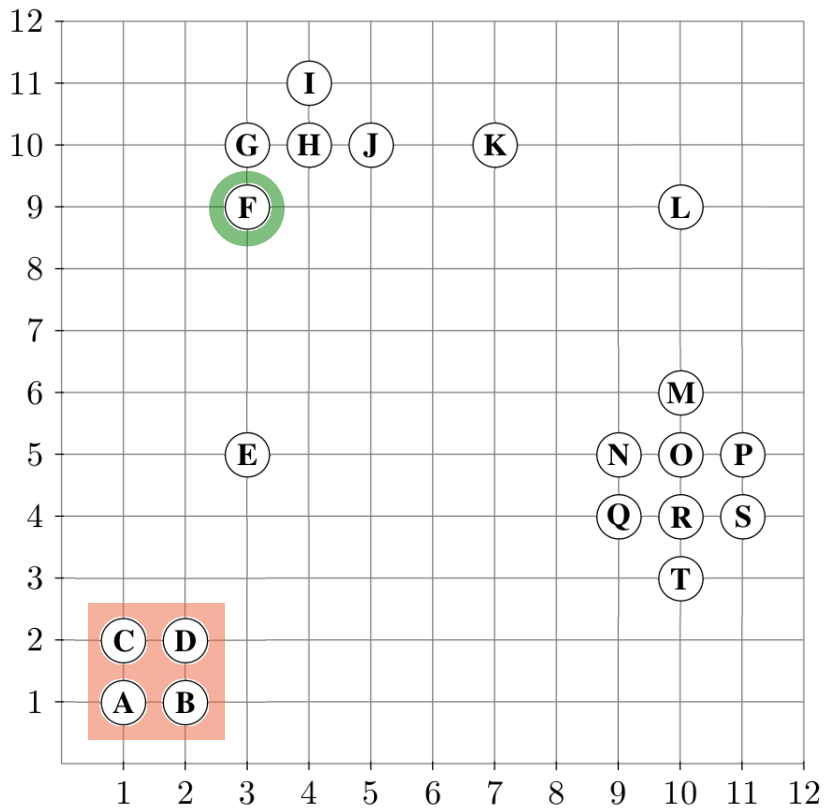
E.CId := Noise



Cluster 1: A, B, C, D

Cluster 2:

Cluster 3:



Start: **F**

F.ClId = Unclassified

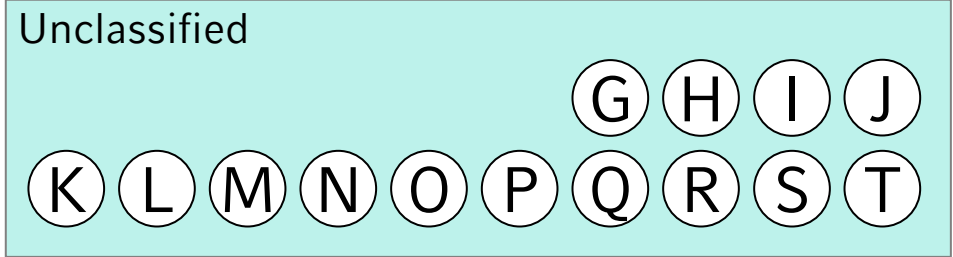
ExpandiereCluster (DB, F, 2, 1.1, 3)

seeds := RQ (F, 1.1) = {F,G}

|seeds| < minPts

→ F.ClId := Noise

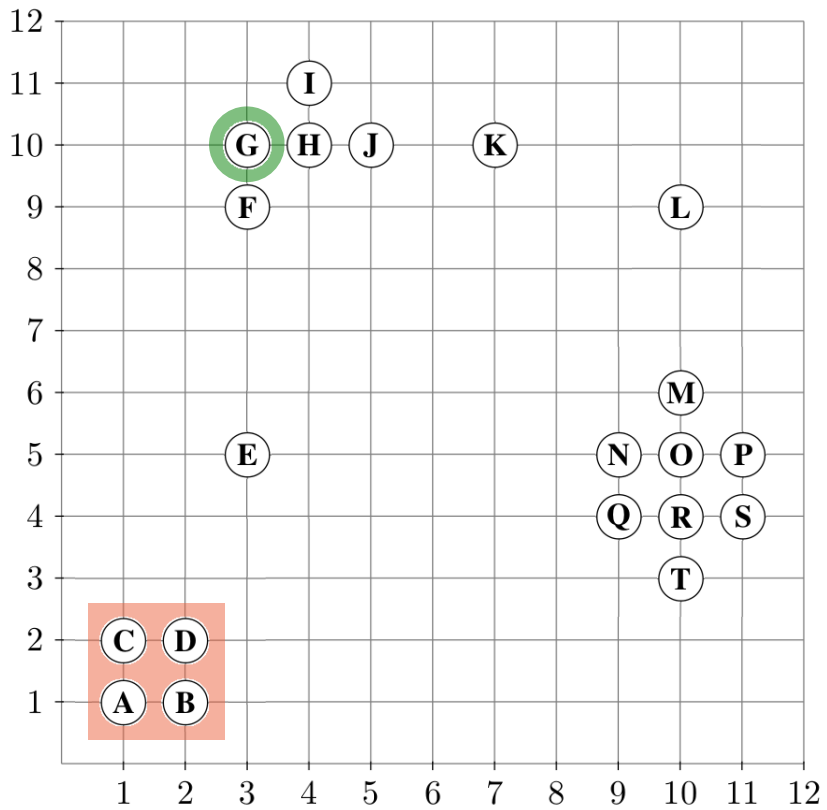
→ false (keine weitere Betrachtung von seeds)



Cluster 1: A, B, C, D

Cluster 2:

Cluster 3:

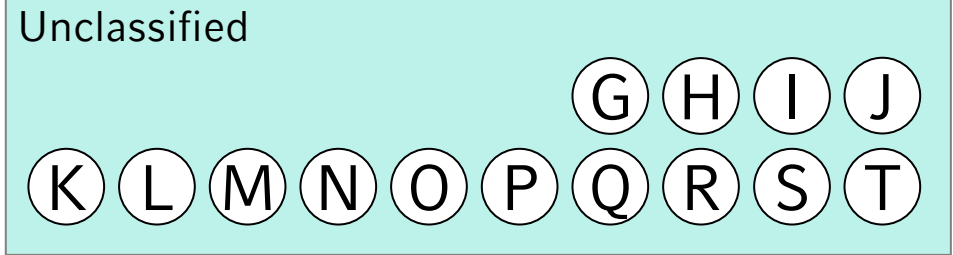


Start: **G**

G.CIId = Unclassified

ExpandiereCluster (DB, G, 2, 1.1, 3)

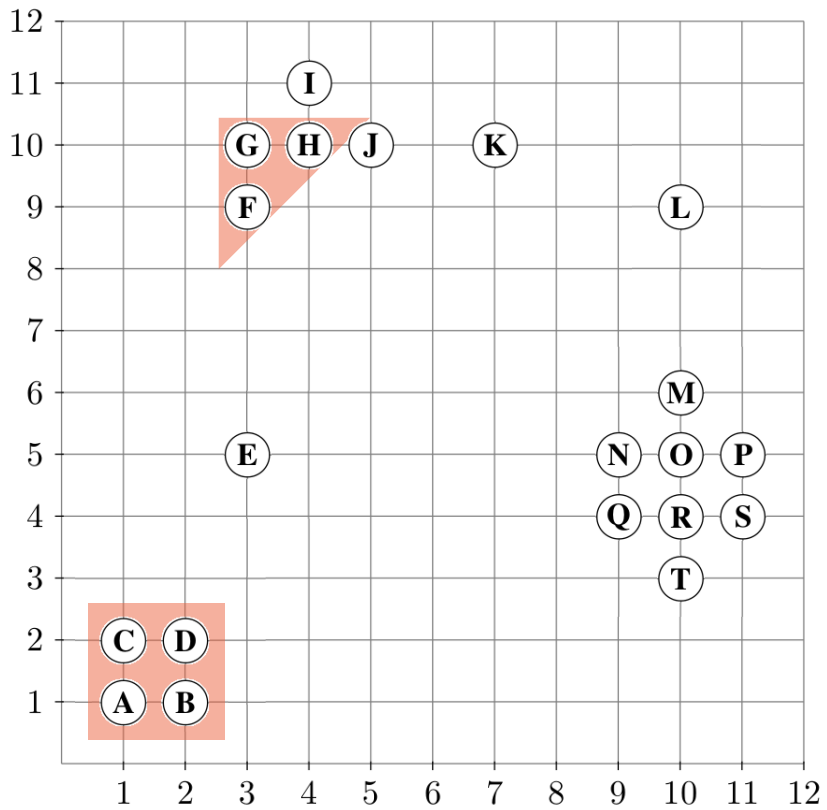
RQ (G, 1.1) = {F,G,H}



Cluster 1: A, B, C, D

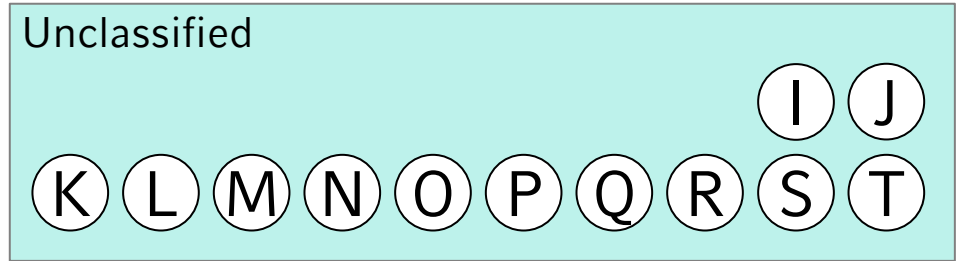
Cluster 2:

Cluster 3:



Cluster: **F** **G** **H**

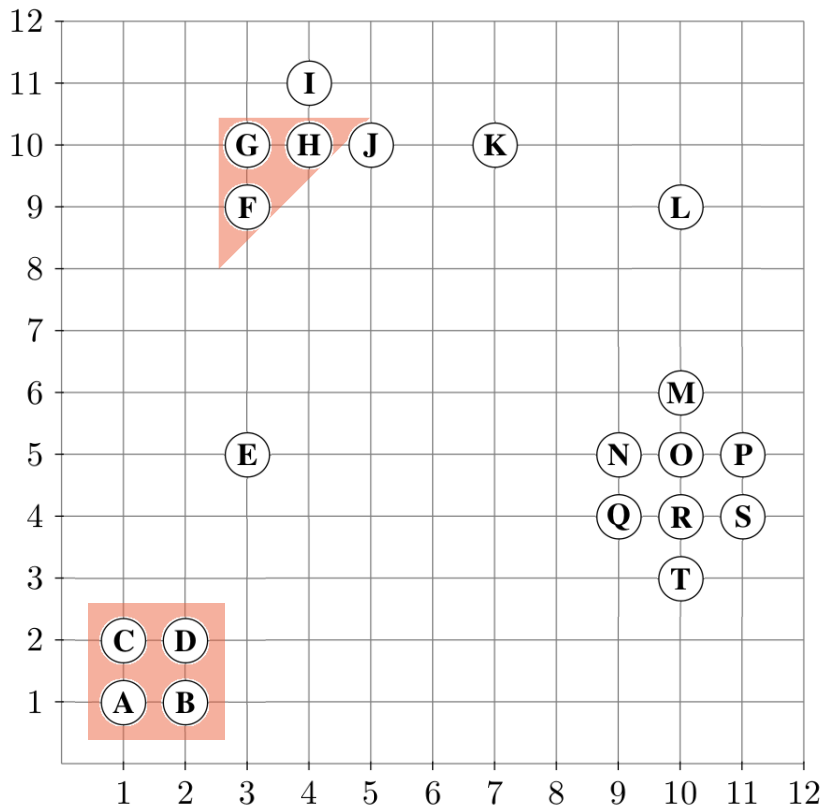
Forall o in Seeds:
 o.ClId := ClusterId
 Entferne G aus Seeds



Cluster 1: A, B, C, D

Cluster 2: F, G, H

Cluster 3:

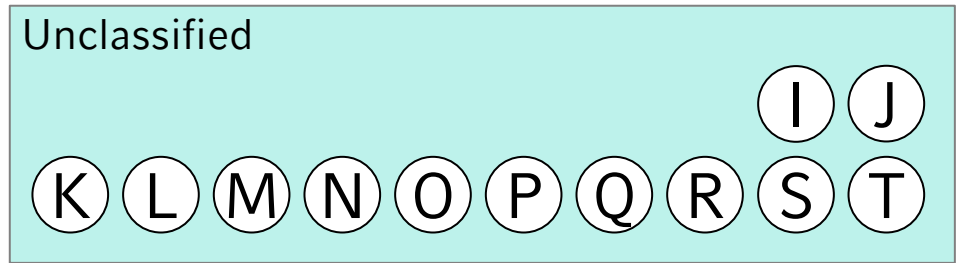


Punkt: **F**

While Seeds != empty do
 RQ (F, 1.1) = {F, G}

F.CIId = 2. fertig
 G.CIId = 2. fertig

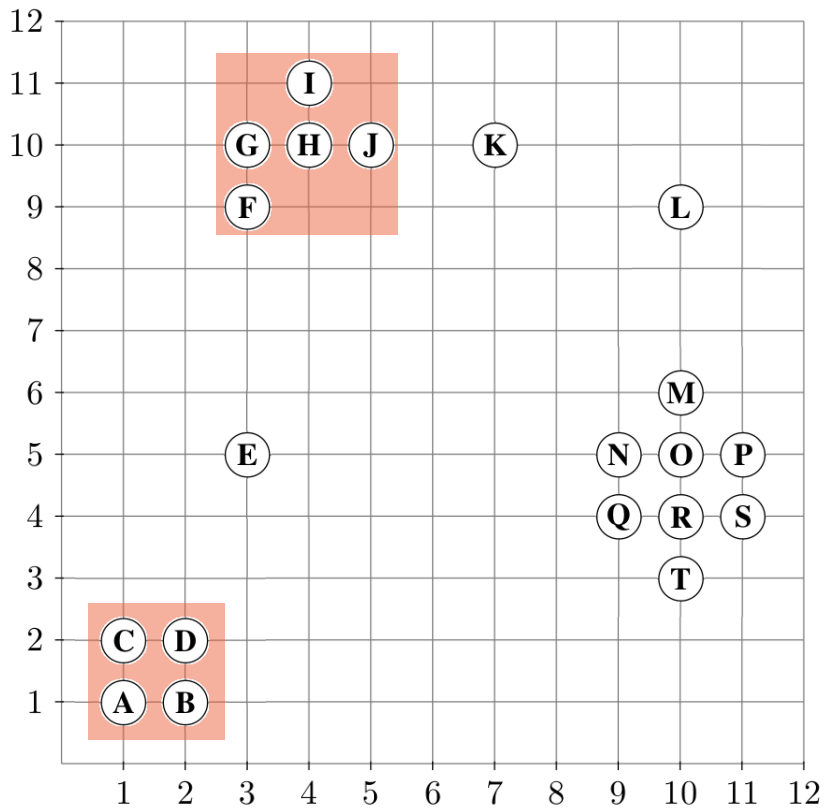
Entferne F aus Seeds



Cluster 1: A, B, C, D

Cluster 2: F, G, H

Cluster 3:



Punkt: **(H)**

While Seeds != empty do

RQ (H, 1.1) = {G, H, I, J}

G.ClId = 2. fertig

H.ClId = 2. fertig

I.ClId = Unclassified → Seeds += I

J.ClId = Unclassified → Seeds += J

I.ClId := J.ClId := 2

Entferne H aus Seeds

Unclassified
(K) (L) (M) (N) (O) (P) (Q) (R) (S) (T)

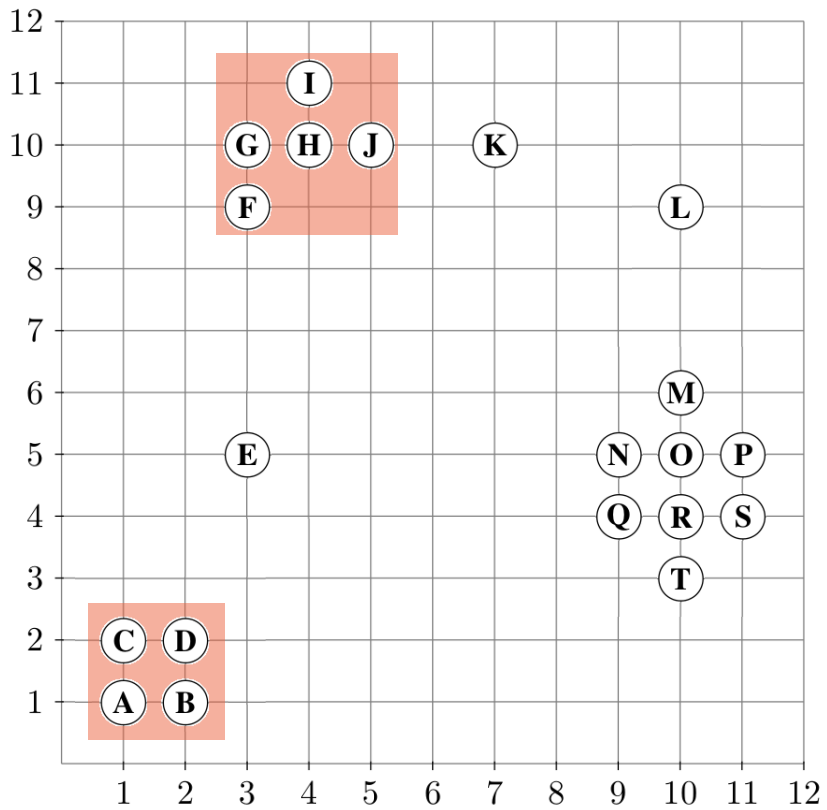
Noise
(E)

Seeds
(I) (J)

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3:



Punkt: \textcircled{I}

While Seeds \neq empty do
 $RQ(I, 1.1) = \{H, I\}$

H.ClId = 2. fertig
 I.ClId = 2. fertig

Entferne I aus Seeds

Unclassified

\textcircled{K} \textcircled{L} \textcircled{M} \textcircled{N} \textcircled{O} \textcircled{P} \textcircled{Q} \textcircled{R} \textcircled{S} \textcircled{T}

Noise

\textcircled{E}

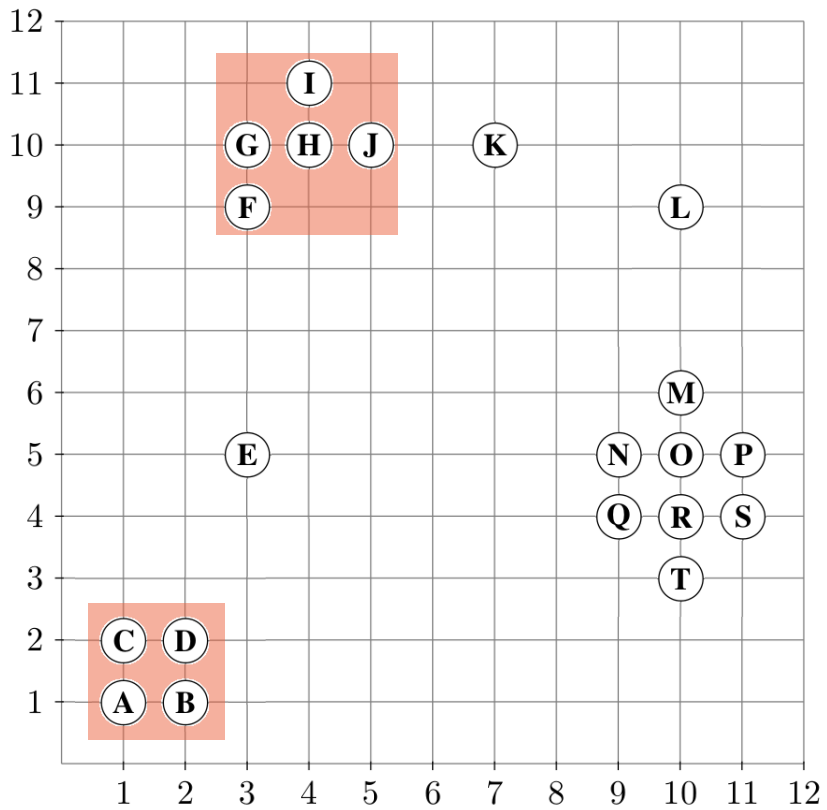
Seeds

\textcircled{J}

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3:



Punkt: **J**

While Seeds != empty do
 RQ (J, 1.1) = {H, J}

H.ClId = 2. fertig
 J.ClId = 2. fertig

Entferne J aus Seeds

Unclassified
K L M N O P Q R S T

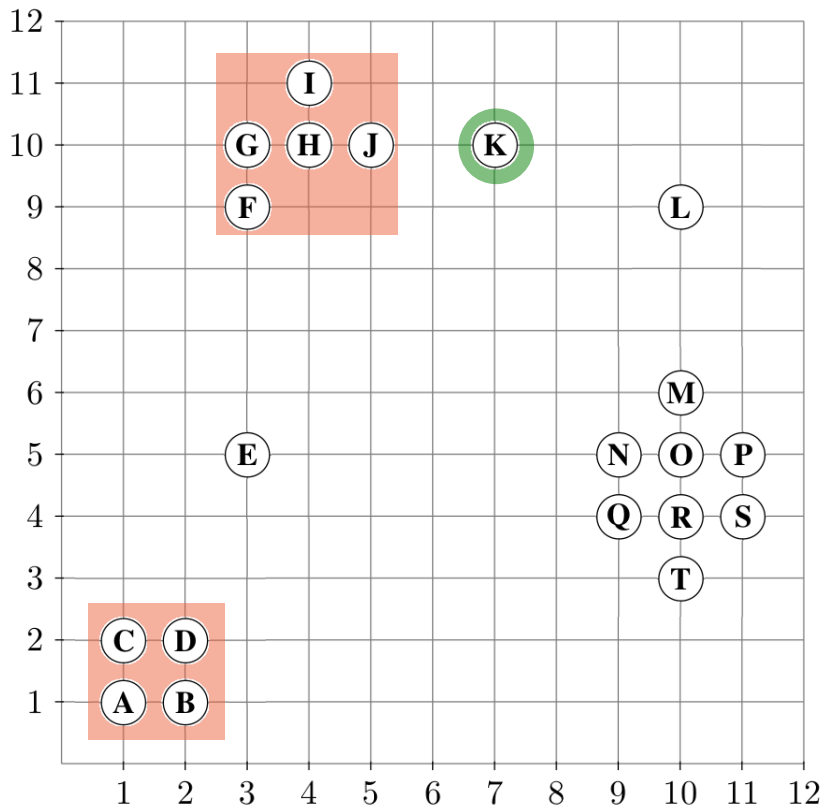
Noise
E

Seeds

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3:



Start: **K**

K.CId = Unclassified

ExpandiereCluster (DB, K, 3, 1.1, 3) = false

K.CId := Noise

Unclassified
L M N O P Q R S T

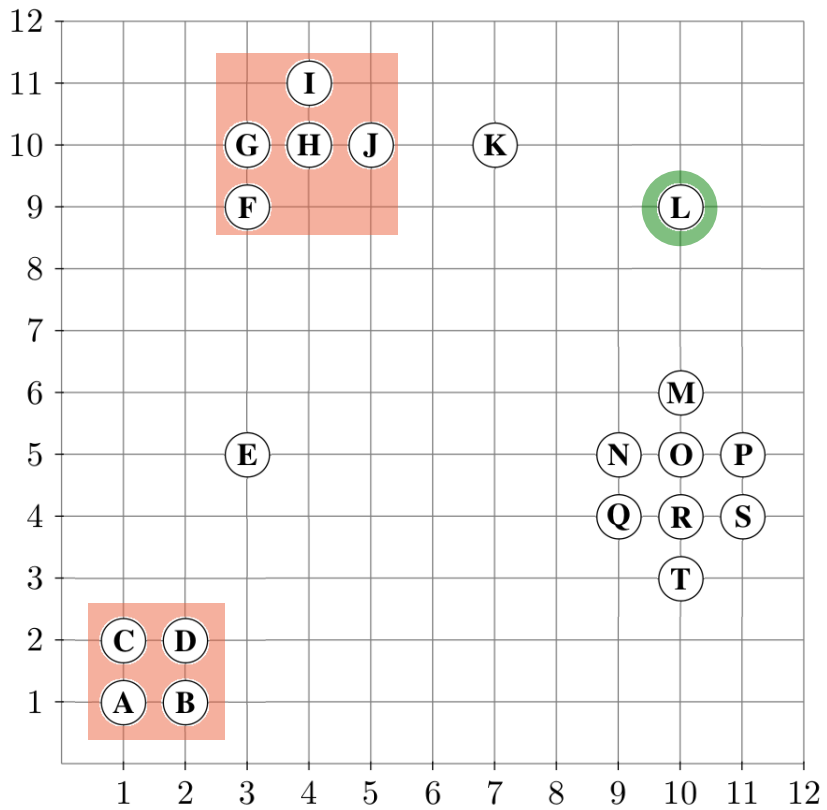
Noise
E K

Seeds
K

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3:



Start: **L**

L.CIId = Unclassified

ExpandiereCluster (DB, L, 3, 1.1, 3) = false

L.CIId := Noise

Unclassified
M N O P Q R S T

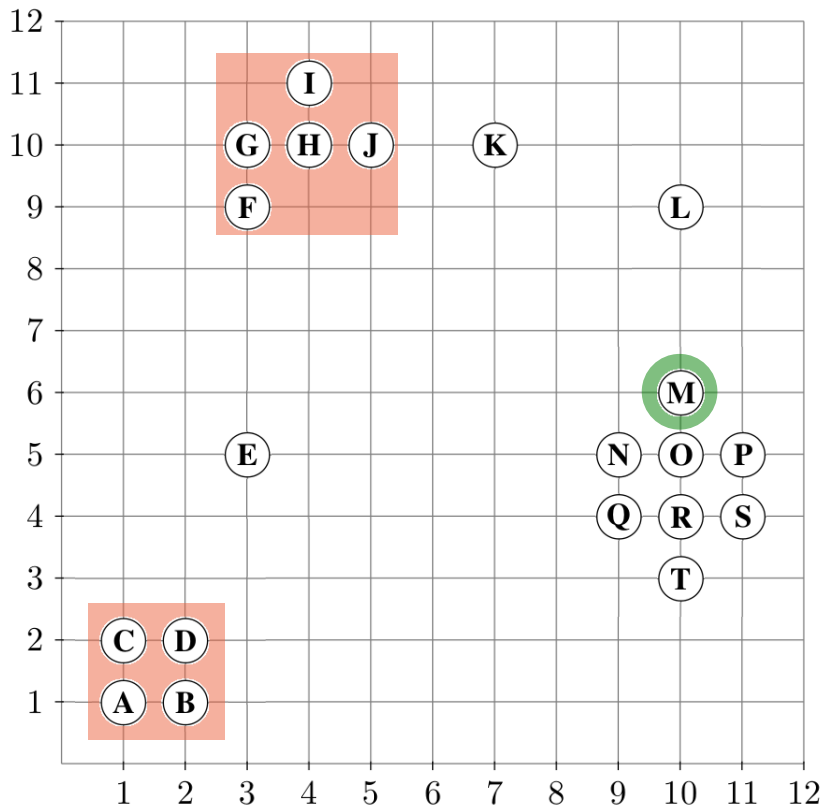
Noise
E K L

Seeds
L

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3:



Start: \textcircled{M}

M.ClId = Unclassified

ExpandiereCluster (DB, M, 3, 1.1, 3)

Seeds := RQ (M, 1.1) = {M, O}

|seeds| < minPts

→ F.ClId := Noise

→ false (keine weitere Betrachtung von seeds)

Unclassified

\textcircled{N} \textcircled{O} \textcircled{P} \textcircled{Q} \textcircled{R} \textcircled{S} \textcircled{T}

Noise

\textcircled{E} \textcircled{K} \textcircled{L} \textcircled{M}

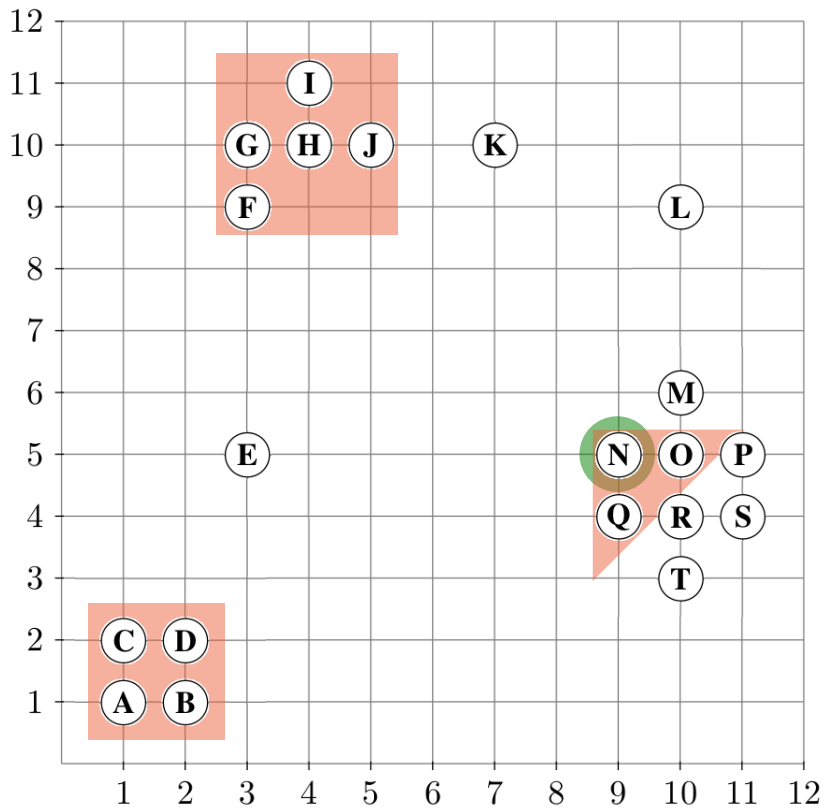
Seeds

\textcircled{M} \textcircled{O}

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3:



Start: (N) Cluster: (N) (O) (Q)

N.CId = Unclassified

ExpandiereCluster (DB, N, 3, 1.1, 3)

RQ (M, 1.1) = {N, O, Q}

Forall o in Seeds:

o.CId := ClusterId

Entferne N aus Seeds

Unclassified

(P) (R) (S) (T)

Noise

(E) (K) (L) (M)

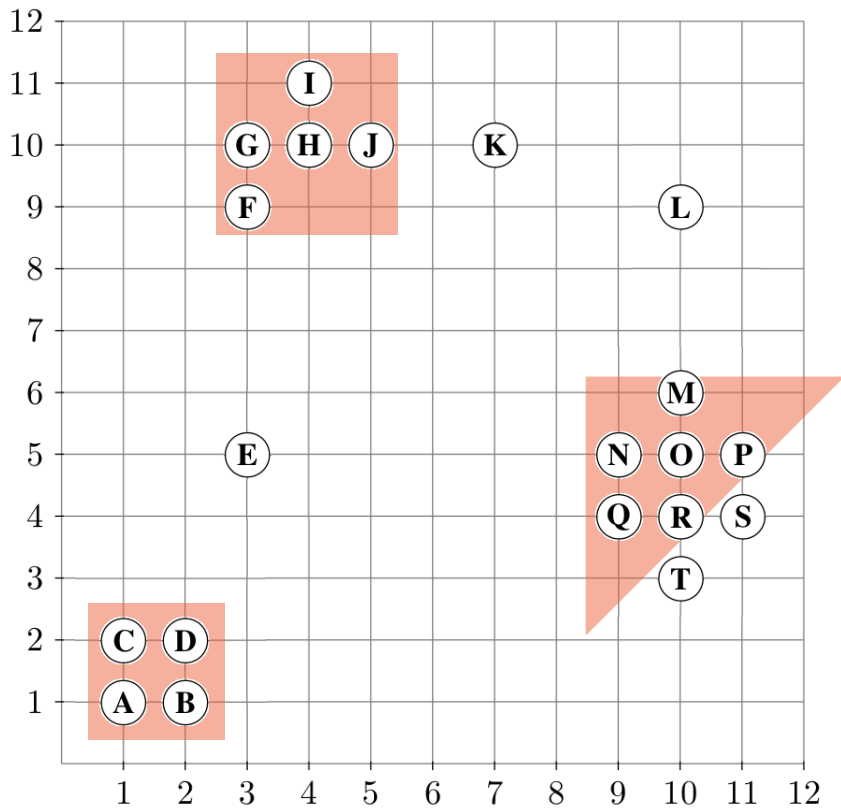
Seed

(O) (Q)

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: N, O, Q



Punkt: **O**

While Seeds != empty do
 RQ (O, 1.1) = {M, N, O, P, R}

M.ClId = Noise → M.ClId := 3

N.ClId = 3. fertig

O.ClId = 3. fertig

P.ClId = Unclassified → Seeds += P, P.ClId := 3

R.ClId = Unclassified → Seeds += R, R.ClId := 3

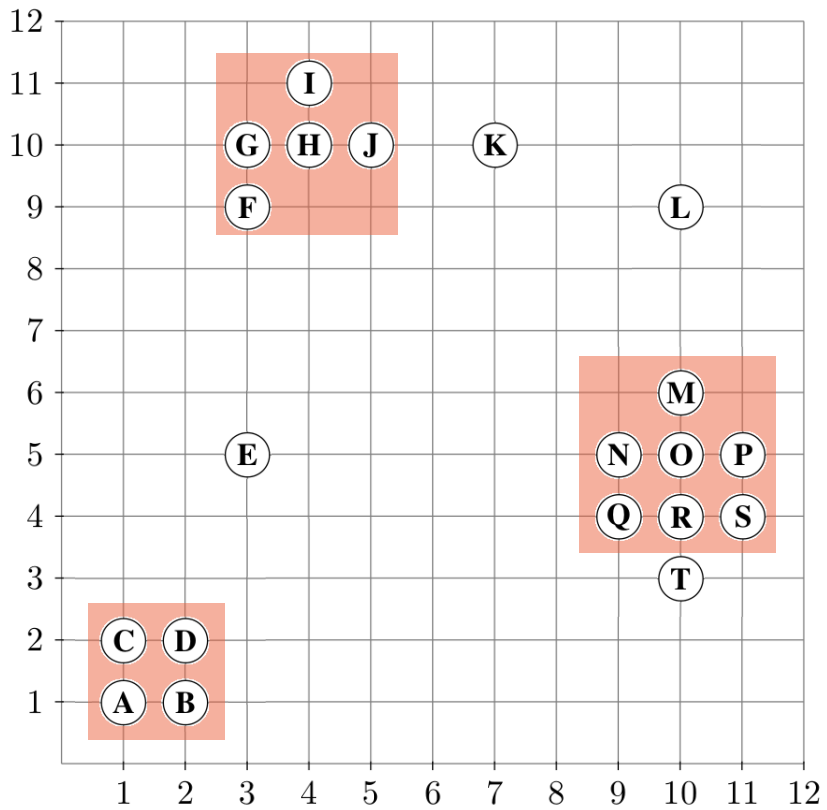
Entferne O aus Seeds



Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R



Punkt: **P**

While Seeds != empty do
 RQ (P, 1.1) = {O, P, S}

O.Clld = 3. fertig

P. Clld = 3. fertig

S.Clld = Unclassified → Seeds += S, S.Clld := 3

Entferne P aus Seeds

Unclassified
T

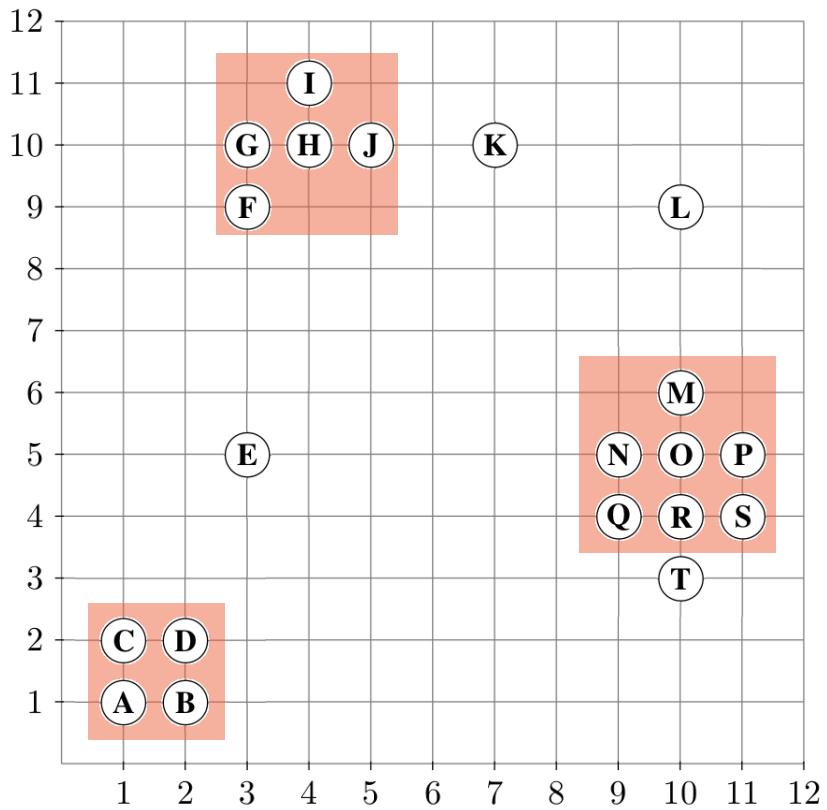
Noise
E K L

Seed
Q R S

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R, S



Punkt: **Q**

While Seeds != empty do
 RQ (Q, 1.1) = {N, Q, R}

N.CIId = 3. fertig
 Q. CIId = 3. fertig
 R.CIId = 3. fertig

Entferne Q aus Seeds

Unclassified
T

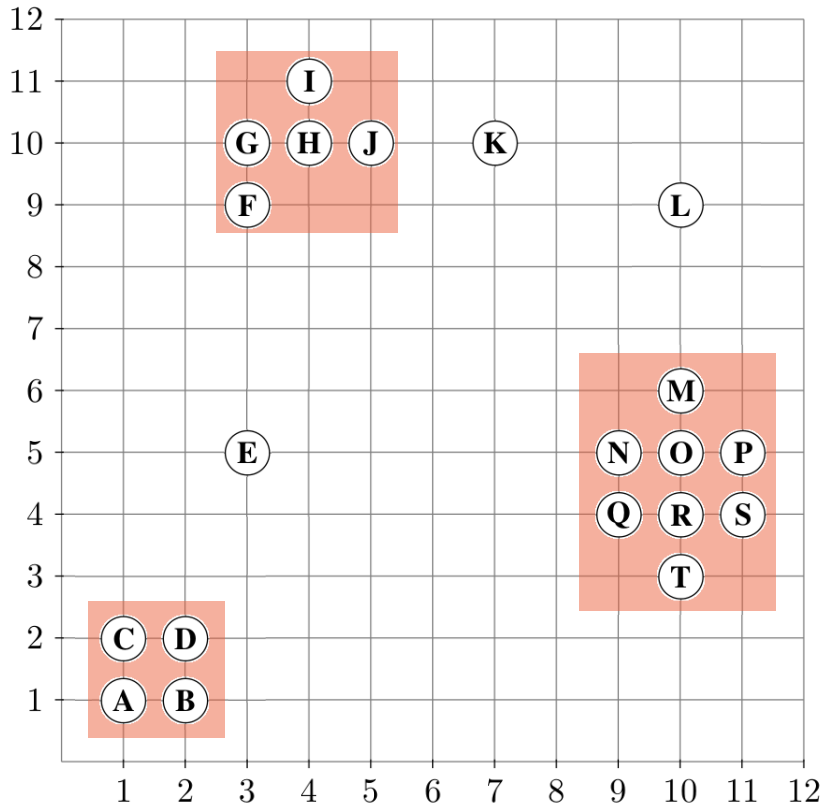
Noise
E K L

Seed
R S

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R, S



Punkt: **R**

While Seeds != empty do
 RQ (R, 1.1) = {O, Q, R, S, T}

O.CIId = 3. fertig

Q. CIId = 3. fertig

R.CIId = 3. fertig

S.CIId = 3. fertig

T.CIId = Unclassified → Seeds += T; T.CIId := 3

Entferne R aus Seeds

Unclassified

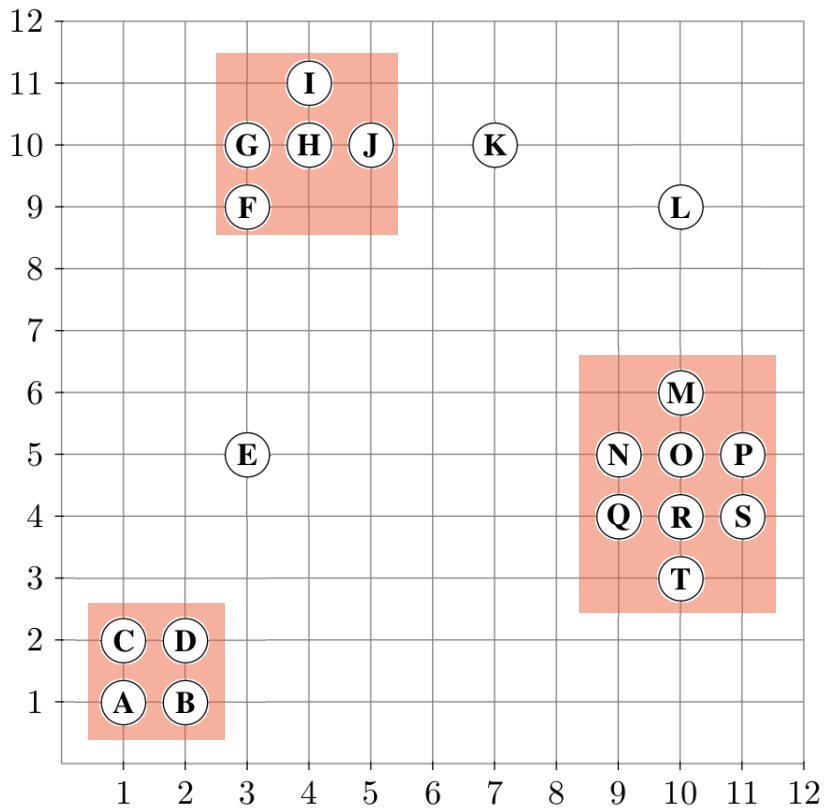
Noise
E **K** **L**

Seed
S **T**

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R, S, T



Punkt: **S**

While Seeds != empty do
 RQ (S, 1.1) = {P, R, S}

P.CIId = 3. fertig
 R. CIId = 3. fertig
 S.CIId = 3. fertig

Entferne S aus Seeds

Unclassified

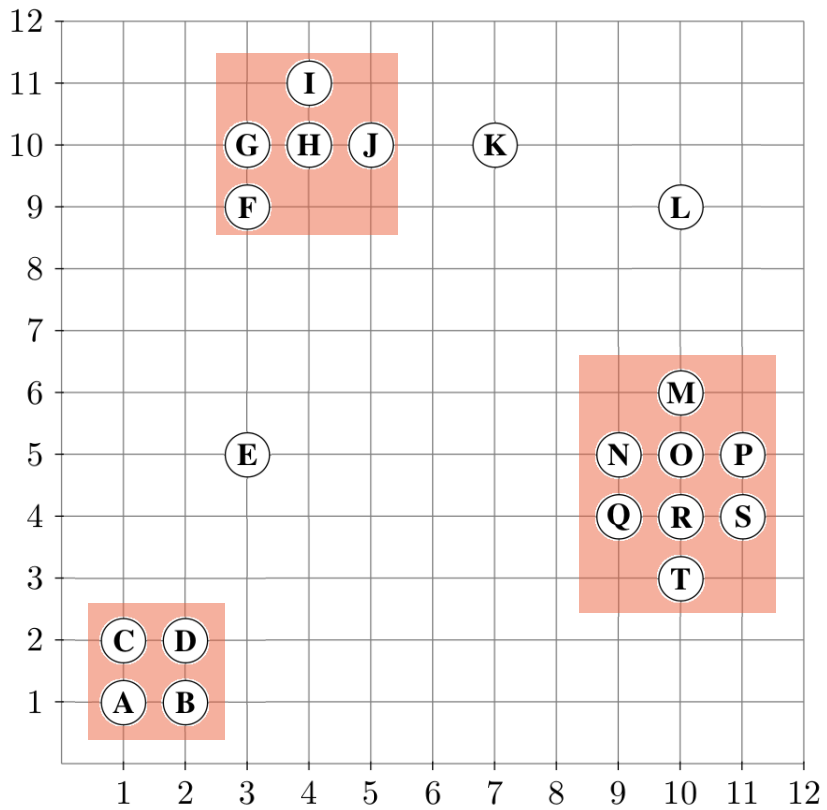
Noise
E **K** **L**

Seed
S **T**

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R, S, T



Punkt: **T**

While Seeds != empty do
 RQ (T, 1.1) = {R, T}

R.CIId = 3. fertig
 T. CIId = 3. fertig

Entferne T aus Seeds

Unclassified

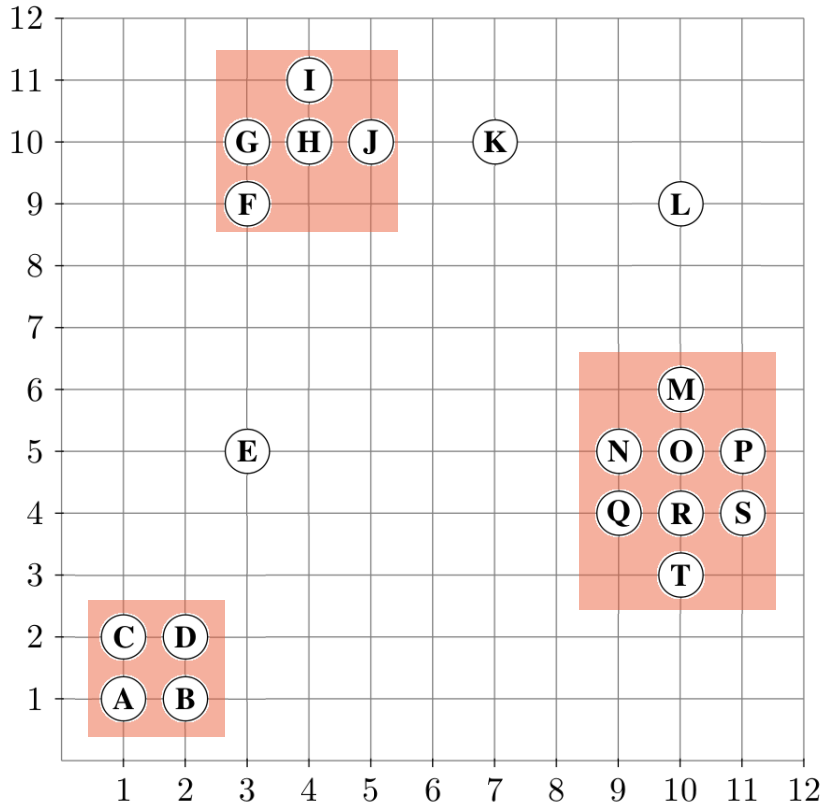
Noise
E **K** **L**

Seed
 s

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R, S, T



Unclassified

Noise

E K L

Seed

s

Cluster 1: A, B, C, D

Cluster 2: F, G, H, I, J

Cluster 3: M, N, O, P, Q, R, S, T