

Bewertungsmatrix:

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8
x_1	0	2	5	4	3	8	2	1
x_2	∞	0	1	6	7	∞	5	3
x_3	3	2	0	5	3	4	2	3
x_4	7	4	5	0	3	6	4	2
x_5	6	2	∞	6	0	∞	5	3
x_6	1	3	1	6	3	0	2	∞
x_7	5	2	4	3	3	∞	0	3
x_8	4	3	5	4	3	2	5	0

Es ist

$$\begin{aligned} A = & \{(x_1, x_2), (x_1, x_3), (x_1, x_4), (x_1, x_5), (x_1, x_6), (x_1, x_7), (x_1, x_8), \\ & (x_2, x_3), (x_2, x_4), (x_2, x_5), (x_2, x_7), (x_2, x_8) \\ & (x_3, x_1), (x_3, x_2), (x_3, x_4), (x_3, x_5), (x_3, x_6), (x_3, x_7), (x_3, x_8) \\ & (x_4, x_1), (x_4, x_2), (x_4, x_3), (x_4, x_5), (x_4, x_6), (x_4, x_7), (x_4, x_8) \\ & (x_5, x_1), (x_5, x_2), (x_5, x_4), (x_5, x_7), (x_5, x_8) \\ & (x_6, x_1), (x_6, x_2), (x_6, x_3), (x_6, x_4), (x_6, x_5), (x_6, x_7), \\ & (x_7, x_1), (x_7, x_2), (x_7, x_3), (x_7, x_4), (x_7, x_5), (x_7, x_8) \\ & (x_8, x_1), (x_8, x_2), (x_8, x_3), (x_8, x_4), (x_8, x_5), (x_8, x_6), (x_8, x_7)\} \end{aligned}$$

Schritt 1:

$$\text{dist}(x_1) = 0, \text{dist}(x_2) = \text{dist}(x_3) = \text{dist}(x_4) = \text{dist}(x_5) = \text{dist}(x_6) = \text{dist}(x_7) = \text{dist}(x_8) = \infty.$$

Schritt 2.1:

$$\begin{aligned}\infty &= \text{dist}(x_2) > \text{dist}(x_1) + l(x_1, x_2) = 0 + 2 \Rightarrow \text{pred}(x_2) = x_1, \text{dist}(x_2) = 2. \\ \infty &= \text{dist}(x_3) > \text{dist}(x_1) + l(x_1, x_3) = 0 + 5 \Rightarrow \text{pred}(x_3) = x_1, \text{dist}(x_3) = 5. \\ \infty &= \text{dist}(x_4) > \text{dist}(x_1) + l(x_1, x_4) = 0 + 4 \Rightarrow \text{pred}(x_4) = x_1, \text{dist}(x_4) = 4. \\ \infty &= \text{dist}(x_5) > \text{dist}(x_1) + l(x_1, x_5) = 0 + 3 \Rightarrow \text{pred}(x_5) = x_1, \text{dist}(x_5) = 3. \\ \infty &= \text{dist}(x_6) > \text{dist}(x_1) + l(x_1, x_6) = 0 + 8 \Rightarrow \text{pred}(x_6) = x_1, \text{dist}(x_6) = 8. \\ \infty &= \text{dist}(x_7) > \text{dist}(x_1) + l(x_1, x_7) = 0 + 2 \Rightarrow \text{pred}(x_7) = x_1, \text{dist}(x_7) = 2. \\ \infty &= \text{dist}(x_8) > \text{dist}(x_1) + l(x_1, x_8) = 0 + 1 \Rightarrow \text{pred}(x_8) = x_1, \text{dist}(x_8) = 1.\end{aligned}$$

$$\begin{aligned}5 &= \text{dist}(x_3) > \text{dist}(x_2) + l(x_2, x_3) = 2 + 1 \Rightarrow \text{pred}(x_3) = x_2, \text{dist}(x_3) = 3. \\ 4 &= \text{dist}(x_4) \leq \text{dist}(x_2) + l(x_2, x_4) = 2 + 6. \\ 3 &= \text{dist}(x_5) \leq \text{dist}(x_2) + l(x_2, x_5) = 2 + 7. \\ 2 &= \text{dist}(x_7) \leq \text{dist}(x_2) + l(x_2, x_7) = 2 + 5. \\ 1 &= \text{dist}(x_8) \leq \text{dist}(x_2) + l(x_2, x_8) = 2 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_3) + l(x_3, x_1) = 3 + 3. \\ 2 &= \text{dist}(x_2) \leq \text{dist}(x_3) + l(x_3, x_2) = 3 + 2. \\ 4 &= \text{dist}(x_4) \leq \text{dist}(x_3) + l(x_3, x_4) = 3 + 5. \\ 3 &= \text{dist}(x_5) \leq \text{dist}(x_3) + l(x_3, x_5) = 3 + 3. \\ 8 &= \text{dist}(x_6) > \text{dist}(x_3) + l(x_3, x_6) = 3 + 4 \Rightarrow \text{pred}(x_6) = x_3, \text{dist}(x_6) = 7. \\ 2 &= \text{dist}(x_7) \leq \text{dist}(x_3) + l(x_3, x_7) = 3 + 2. \\ 1 &= \text{dist}(x_8) \leq \text{dist}(x_3) + l(x_3, x_8) = 3 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_4) + l(x_4, x_1) = 4 + 7. \\ 2 &= \text{dist}(x_2) \leq \text{dist}(x_4) + l(x_4, x_2) = 4 + 4. \\ 3 &= \text{dist}(x_3) \leq \text{dist}(x_4) + l(x_4, x_3) = 4 + 5. \\ 3 &= \text{dist}(x_5) \leq \text{dist}(x_4) + l(x_4, x_5) = 4 + 3. \\ 7 &= \text{dist}(x_6) \leq \text{dist}(x_4) + l(x_4, x_6) = 4 + 6. \\ 2 &= \text{dist}(x_7) \leq \text{dist}(x_4) + l(x_4, x_7) = 4 + 4. \\ 1 &= \text{dist}(x_8) \leq \text{dist}(x_4) + l(x_4, x_8) = 4 + 2.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_5) + l(x_5, x_1) = 3 + 6. \\ 2 &= \text{dist}(x_2) \leq \text{dist}(x_5) + l(x_5, x_2) = 3 + 2. \\ 4 &= \text{dist}(x_4) \leq \text{dist}(x_5) + l(x_5, x_4) = 3 + 6. \\ 2 &= \text{dist}(x_7) \leq \text{dist}(x_5) + l(x_5, x_7) = 3 + 5. \\ 1 &= \text{dist}(x_8) \leq \text{dist}(x_5) + l(x_5, x_8) = 3 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_6) + l(x_6, x_1) = 7 + 1. \\ 2 &= \text{dist}(x_2) \leq \text{dist}(x_6) + l(x_6, x_2) = 7 + 3. \\ 3 &= \text{dist}(x_3) \leq \text{dist}(x_6) + l(x_6, x_3) = 7 + 1. \\ 4 &= \text{dist}(x_4) \leq \text{dist}(x_6) + l(x_6, x_4) = 7 + 6. \\ 3 &= \text{dist}(x_5) \leq \text{dist}(x_6) + l(x_6, x_5) = 7 + 3. \\ 2 &= \text{dist}(x_7) \leq \text{dist}(x_6) + l(x_6, x_7) = 7 + 2.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_7) + l(x_7, x_1) = 2 + 5. \\ 2 &= \text{dist}(x_2) \leq \text{dist}(x_7) + l(x_7, x_2) = 2 + 2. \\ 3 &= \text{dist}(x_3) \leq \text{dist}(x_7) + l(x_7, x_3) = 2 + 4. \\ 4 &= \text{dist}(x_4) \leq \text{dist}(x_7) + l(x_7, x_4) = 2 + 3. \\ 3 &= \text{dist}(x_5) \leq \text{dist}(x_7) + l(x_7, x_5) = 2 + 3. \\ 1 &= \text{dist}(x_8) \leq \text{dist}(x_7) + l(x_7, x_8) = 2 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_8) + l(x_8, x_1) = 1 + 4. \\ 2 &= \text{dist}(x_2) \leq \text{dist}(x_8) + l(x_8, x_2) = 1 + 3. \\ 3 &= \text{dist}(x_3) \leq \text{dist}(x_8) + l(x_8, x_3) = 1 + 5. \\ 4 &= \text{dist}(x_4) \leq \text{dist}(x_8) + l(x_8, x_4) = 1 + 4. \\ 3 &= \text{dist}(x_5) \leq \text{dist}(x_8) + l(x_8, x_5) = 1 + 3. \\ 7 &= \text{dist}(x_6) > \text{dist}(x_8) + l(x_8, x_6) = 1 + 2 \Rightarrow \text{pred}(x_6) = x_8, \text{dist}(x_6) = 3. \\ 2 &= \text{dist}(x_7) \leq \text{dist}(x_8) + l(x_8, x_7) = 1 + 5.\end{aligned}$$

Schritt 2.2 - Schritt 2.7:

$$\begin{aligned}2 &= \text{dist}(x_2) \leq \text{dist}(x_1) + l(x_1, x_2) = 0 + 2. \\3 &= \text{dist}(x_3) \leq \text{dist}(x_1) + l(x_1, x_3) = 0 + 5. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_1) + l(x_1, x_4) = 0 + 4. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_1) + l(x_1, x_5) = 0 + 3. \\3 &= \text{dist}(x_6) \leq \text{dist}(x_1) + l(x_1, x_6) = 0 + 8. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_1) + l(x_1, x_7) = 0 + 2. \\1 &= \text{dist}(x_8) \leq \text{dist}(x_1) + l(x_1, x_8) = 0 + 1.\end{aligned}$$

$$\begin{aligned}3 &= \text{dist}(x_3) \leq \text{dist}(x_2) + l(x_2, x_3) = 2 + 1. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_2) + l(x_2, x_4) = 2 + 6. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_2) + l(x_2, x_5) = 2 + 7. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_2) + l(x_2, x_7) = 2 + 5. \\1 &= \text{dist}(x_8) \leq \text{dist}(x_2) + l(x_2, x_8) = 2 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_3) + l(x_3, x_1) = 3 + 3. \\2 &= \text{dist}(x_2) \leq \text{dist}(x_3) + l(x_3, x_2) = 3 + 2. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_3) + l(x_3, x_4) = 3 + 5. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_3) + l(x_3, x_5) = 3 + 3. \\3 &= \text{dist}(x_6) \leq \text{dist}(x_3) + l(x_3, x_6) = 3 + 4. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_3) + l(x_3, x_7) = 3 + 2. \\1 &= \text{dist}(x_8) \leq \text{dist}(x_3) + l(x_3, x_8) = 3 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_4) + l(x_4, x_1) = 4 + 7. \\2 &= \text{dist}(x_2) \leq \text{dist}(x_4) + l(x_4, x_2) = 4 + 4. \\3 &= \text{dist}(x_3) \leq \text{dist}(x_4) + l(x_4, x_3) = 4 + 5. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_4) + l(x_4, x_5) = 4 + 3. \\3 &= \text{dist}(x_6) \leq \text{dist}(x_4) + l(x_4, x_6) = 4 + 6. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_4) + l(x_4, x_7) = 4 + 4. \\1 &= \text{dist}(x_8) \leq \text{dist}(x_4) + l(x_4, x_8) = 4 + 2.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_5) + l(x_5, x_1) = 3 + 6. \\2 &= \text{dist}(x_2) \leq \text{dist}(x_5) + l(x_5, x_2) = 3 + 2. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_5) + l(x_5, x_4) = 3 + 6. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_5) + l(x_5, x_7) = 3 + 5. \\1 &= \text{dist}(x_8) \leq \text{dist}(x_5) + l(x_5, x_8) = 3 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_6) + l(x_6, x_1) = 3 + 1. \\2 &= \text{dist}(x_2) \leq \text{dist}(x_6) + l(x_6, x_2) = 3 + 3. \\3 &= \text{dist}(x_3) \leq \text{dist}(x_6) + l(x_6, x_3) = 3 + 1. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_6) + l(x_6, x_4) = 3 + 6. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_6) + l(x_6, x_5) = 3 + 3. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_6) + l(x_6, x_7) = 3 + 2.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_7) + l(x_7, x_1) = 2 + 5. \\2 &= \text{dist}(x_2) \leq \text{dist}(x_7) + l(x_7, x_2) = 2 + 2. \\3 &= \text{dist}(x_3) \leq \text{dist}(x_7) + l(x_7, x_3) = 2 + 4. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_7) + l(x_7, x_4) = 2 + 3. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_7) + l(x_7, x_5) = 2 + 3. \\1 &= \text{dist}(x_8) \leq \text{dist}(x_7) + l(x_7, x_8) = 2 + 3.\end{aligned}$$

$$\begin{aligned}0 &= \text{dist}(x_1) \leq \text{dist}(x_8) + l(x_8, x_1) = 1 + 4. \\2 &= \text{dist}(x_2) \leq \text{dist}(x_8) + l(x_8, x_2) = 1 + 3. \\3 &= \text{dist}(x_3) \leq \text{dist}(x_8) + l(x_8, x_3) = 1 + 5. \\4 &= \text{dist}(x_4) \leq \text{dist}(x_8) + l(x_8, x_4) = 1 + 4. \\3 &= \text{dist}(x_5) \leq \text{dist}(x_8) + l(x_8, x_5) = 1 + 3. \\3 &= \text{dist}(x_6) \leq \text{dist}(x_8) + l(x_8, x_6) = 1 + 2. \\2 &= \text{dist}(x_7) \leq \text{dist}(x_8) + l(x_8, x_7) = 1 + 5.\end{aligned}$$