Based on similarity & single linkage

cluster	P1	P2	P3	P4	P5
P1	1	0.1	0.41	0.55	0.35
P2	0.1	1	0.64	0.47	0.98
P3	0.41	0.64	1	0.44	0.85
P4	0.55	0.47	0.44	1	0.76
P5	0.35	0.98	0.85	0.76	1

Step 1.

- Find maximum similarity.

  max = sim (P2, P5) ——— join P2 & P5 on the dendrogram.

- Recalculate similarity.

  max (P25, P1) = max (sim(P1, P2), sim (P1, P5))

⇒

max (P25, P1) = 0.35

max (P25, P3) = 0.85

max (P25, P4) = 0.76

Table. First Update

cluster	P1	P25	P3	P4
P1	1	0.35	0.41	0.55
P25	0.35	1	0.85	0.76
P3	0.41	0.85	1	0.44
P4	0.55	0.76	0.44	1

Step 2.

- max = sim(P25, P3) = 0.85 ——— join 2, 3 & 5.
- Update the table.

max(P253, P1) = 0.41

max(P253, P4) = 0.76

Table. Second Update

cluster	P1	P253	P4
P1	1	0.41	0.55
P253	0.41	1	0.76
P4	0.55	0.76	1

Step 3.

- max = sim(P253, P4) = 0.76 ——— join 2, 3, 5 & 4.
- Update.

max(P2534, P1) = 0.41.

Table. Third Update

cluster	P1	P2534
P1	1	0.41
P2534	0.41	1

Step 4.

- Merge 2.5, 3, 4 & 1.

Plot.

I transfer the similarity to the dissimilarity by the formula.

dis = 1 - sim.

So.

dis(P2, P5) = 0.02

dis(P3, P25) = 0.15

dis(P4, P253) = 0.24

dis(P1, P2534) = 0.59.