Silhouette Homework

- Assume a clustering with {a,b} in cluster 1 and {c,d,e} in cluster 2. What would the Silhouette score be for a) each instance, b) each cluster, and c) the entire clustering. d) Sketch the Silhouette visualization for this clustering. Use Manhattan distance for your distance calculations.

Pattern	x	y
a	.8	.7
b	.9	.8
c	.6	.6
d	0	.2
e	.2	.1

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Pattern	x	y	a(i)	b(i)	s(i)
a	.8	.7	.2	(0.3+1.3 + 1.2)/3=.93	(.93-.2)/.93=.785
b	.9	.8	.2	(0.5+1.5+1.4)/3=1.13	(1.13-.2)/1.13=.823
c	.6	.6	(1+.9)/2=.95	(.5+.3)/2=.4	(.4-.95)/.95= -.579
d	0	.2	(1+.3)/2=.65	(1.3+1.5)/2=1.4	(1.4-.65)/1.4=.536
e	.2	.1	(.9+.3)/2 = .6	(1.2+.1.4)/2=1.3	(1.3-.6)/1.3=.538

Cluster	Cluster score
{a, b}	(.785+.823)/2=.804
{c, d, e}	(-.5+.536+.538)/3=.165

Overall cluster score	(.785+.823+-.579+.536+.538)/5