

Centroid 1
 m_1

Cluster 1 = (1, 2, 3)

Cluster 2 = (4, 5, 6, 7)

Centroid 2
 m_2

$$m_1 = \left(\frac{1}{3} (1 + 1.5 + 3), \frac{1}{3} (1 + 2 + 4) \right)$$

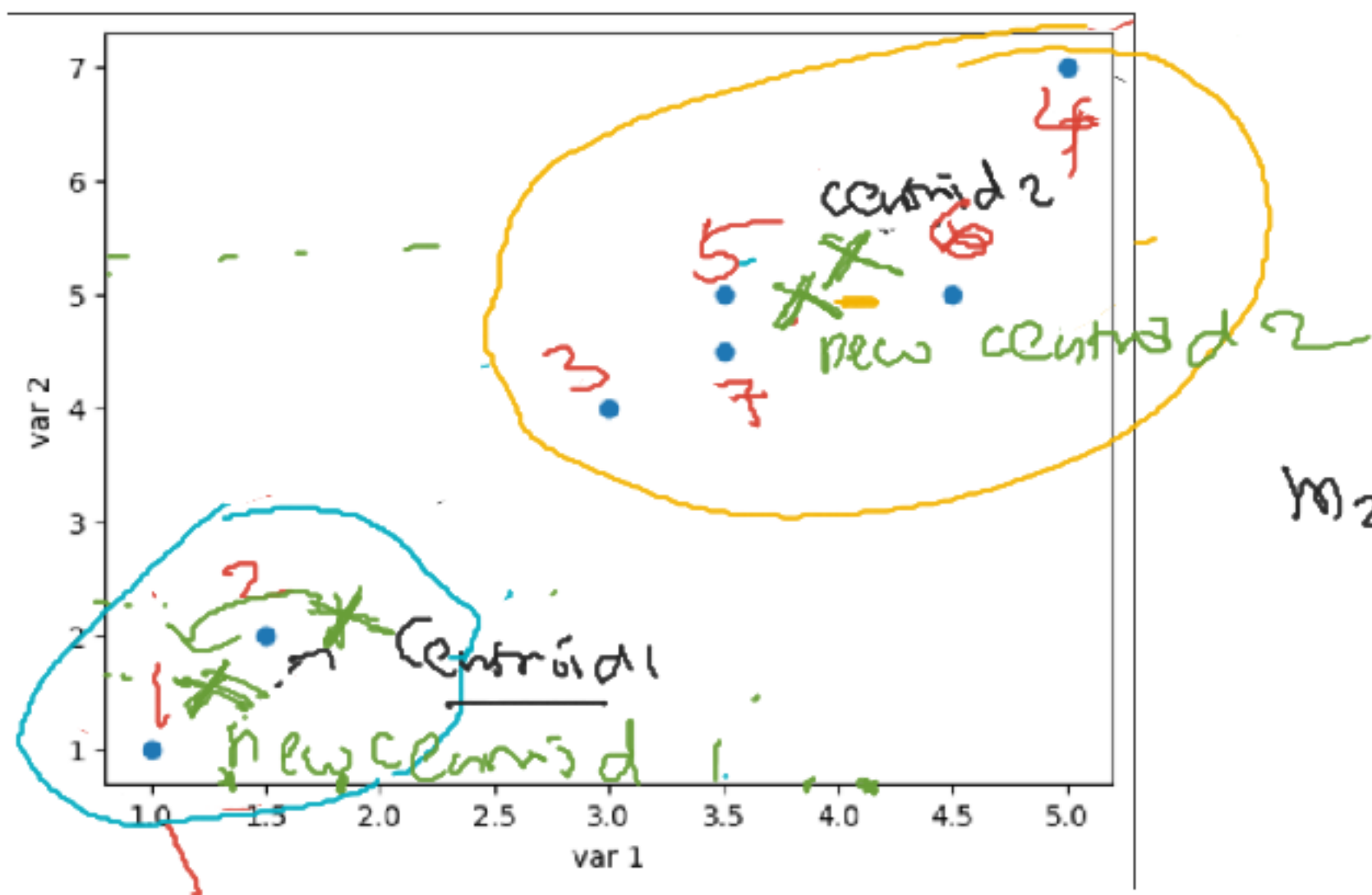
$$= (1.83, 2.33)$$

$$m_2 = \left(\frac{1}{4} (5 + 3.5 + 4.5 + 3.5), \frac{1}{4} (7 + 5 + 5 + 4.5) \right)$$

$$= (4.12, 5.38)$$

< Distance of data points to centroid >

Data points	Centroid 1	Centroid 2
1 (1, 1)	0	7.21
2 (1.5, 2)	1.12	6.10
3	3.61	3.61
4		
5		
6		
7		



$$m_1 = \left(\frac{1}{2} (1 + 1.5), \frac{1}{2} (1 + 2) \right) \\ = (1.25, 1.5)$$

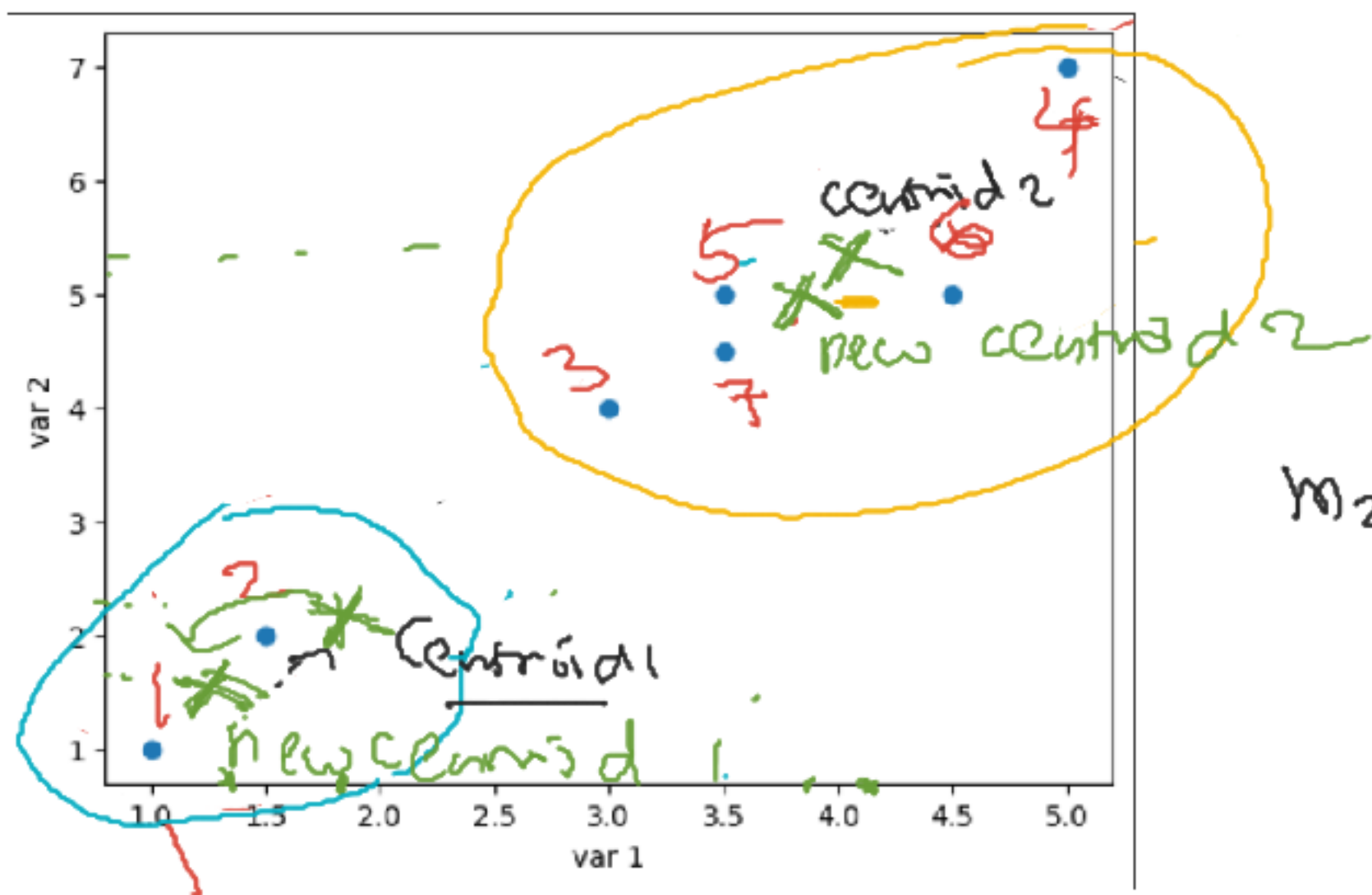
$$m_2 = \left(\frac{1}{5} (3 + 5 + 3.5 + 4.5 + 3.5), \frac{1}{5} (4 + 7 + 5 + 5 + 4.5) \right) \\ = (3.9, 5.1)$$

< Distance of data points to centroid >

Data points	Centroid 1	Centroid 2
1 (1, 1)	1.57	5.38
2 (1.5, 2)	0.47	4.28
3	2.04	1.78
4	5.64	1.84
5	3.15	0.73
6	2.38	0.64
7	2.74	1.08

Cluster 1 = (1, 2)

Cluster 2 = (3, 4, 5, 6, 7)



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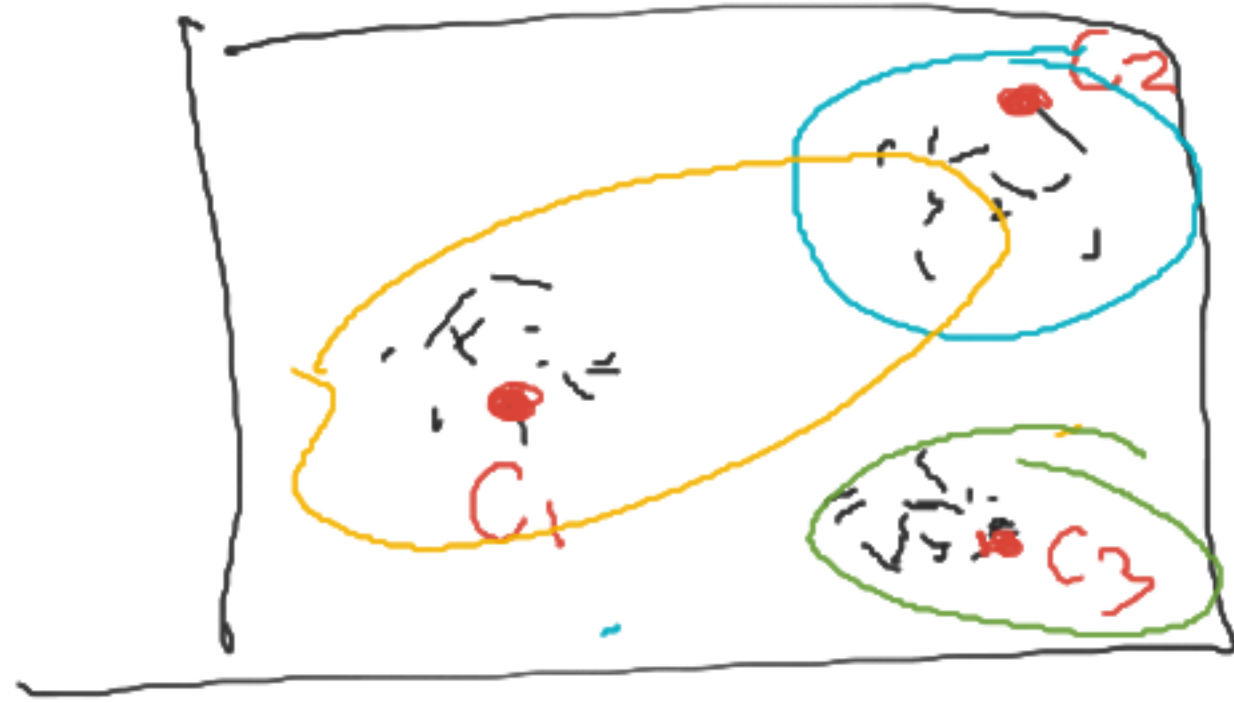
$$m_2 = \left(\frac{1}{5} (3 + 5 + 3.5 + 4.5 + 3.5), \frac{1}{5} (4 + 7 + 5 + 5 + 4.5) \right) \\ = (3.9, 5.1)$$

Distance of data points to centroid

Data points	Centroid 1	Centroid 2
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Cluster 1 = (1, 2)

Cluster 2 = (3, 4, 5, 6, 7)



← This doesn't happen in Kmeans.

