Lecture 6 exercise

1.Kmeans

- **#1 Iteration**

Distance	Center1 `[50,55]`	Center2 `[30,25]`	Cluster
`[55, 33]`	22.56	26.25	1
`[42, 15]`	40.79	15.62	2
`[38, 51]`	12.65	27.20	1
`[27, 20]`	41.88	5.83	2
`[21, 45]`	30.68	21.93	2
`[33, 58]`	17.26	33.14	1
`[18, 29]`	41.23	12.65	2
sum	207.05	142.62	

  - calculate new center
  - `cluster1 = [55, 33], [38, 51], [33, 58]`
    - Center1 = [42., 47.33]
  - `cluster2 = [42, 15],[27, 20],[21, 45],[18, 29]`
    - Center2 = [27. 27.25]

- **#2 Iteration**

Distance	Center1 [42., 47.33]	Center2 [27, 27.25]	Cluster
[55, 33]	19.35	28.58	1
[42, 15]	32.33	19.37	2
[38, 51]	5.43	26.17	1
[27, 20]	31.18	7.25	2
[21, 45]	21.13	18.74	2
[33, 58]	13.96	31.33	1
[18, 29]	30.20	9.17	2
sum	153.58	140.61	

- cluster assignment doesn't change.. center don't change
- Kmeans finished based on these two initial center
    - cluster1 = [55, 33], [38, 51], [33, 58]
    - cluster2 = [42, 15],[27, 20],[21, 45],[18, 29]

2. Dynamic time warping

Path

3	16	10	6	6	7	6
4	13	8	6	6	7	5
2	9	5	5	6	5	7
1	7	4	6	7	5	7
1	6	4	5	5	4	7
3	5	4	3	3	4	5
2	2	3	4	5	5	7
	0	1	3	3	2	4