Time comparison between kNN and KMeans

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1 Test:

We ran both algorithms on 3 dataset with different size. Each algorithm was teste 100 times on each dataset From this table we can see that k-Nearest

algorithm	Test Size	min	max	mean	median	σ
kNN	4kb	0.003957987	0.00601244	0.004603803	0.004979372	0.000522269
Kmeans	4kb	0.038895845	0.049860239	0.042895069	0.042883635	0.001642968
kNN	9kb	0.002991915	0.005017757	0.004039736	0.003989458	0.000191584
Kmeans	9kb	0.03490591	0.041889668	0.03805029	0.037898779	0.000964454
kNN	3400kb	2.0056355	2.067470074	2.027447652	2.026743174	0.006338317
Kmeans	3400kb	1.539861441	1.864499092	1.688719407	1.678056479	0.061035488

Figure 1: Results

Neighbours runs a lot faster than Kmeans, this my be caused by the fact that Kmeans runs 10 times with a different starting seed, this way improving its chance for a better result. At bigger datasets, the Kmeans algorithm runs faster than kNN this may be caused by the fact that kNN makes a lot more distance comparation compared to a run of Kmeans, and after 10 runs of Kmeans they have a smaller difference.