report.md

Data Mining Lab 1

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Roll: 12

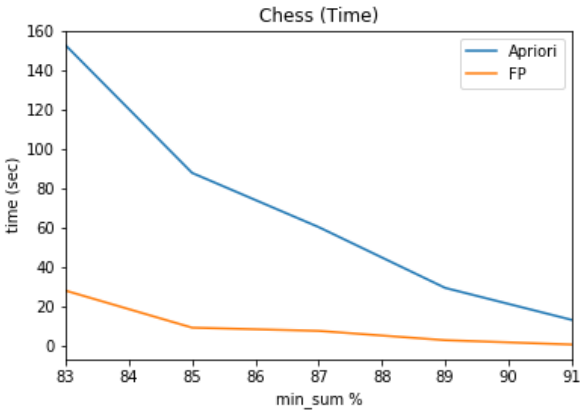
Introduction

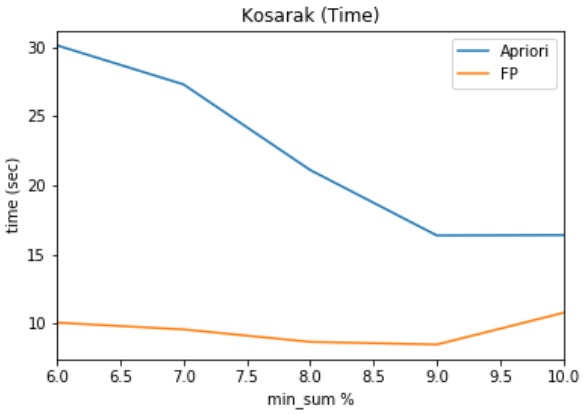
Apriori and FP growth are two popular basic mining algorithm which extract frequent itemsets. Here we have two compared these two algorithm on several real life datasets. The datasets are of different types, statistics are given for corresponding datasets.

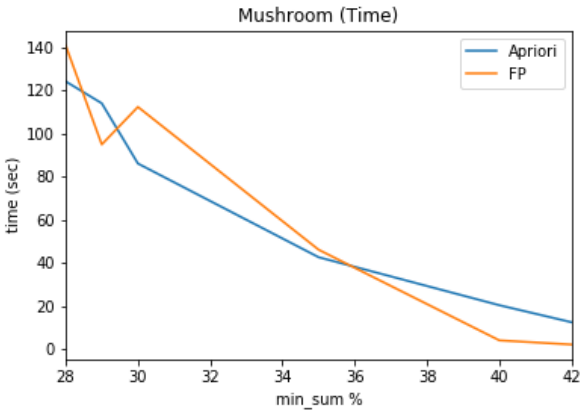
We know that apriori takes longer time compared to fp-growth. Apriori scans dataset as it is processing for new lenght. But fp-growth only scans datasets two times. Apriori has greater memory consumptions because it makes many candidates especially in 1 and 2 itemsets generations. This is not the case for fp-growth as it processes in tree.

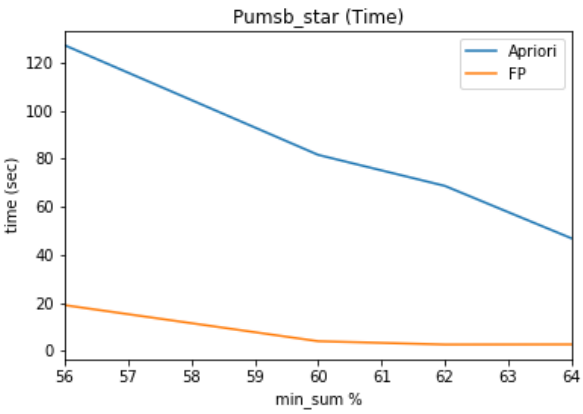
Dataset	Size (MB)	#Trans	#Items	Max TL	Avg TL	Avg TL/#Items (X100)	Type
chess.dat	0.33	3196	75	37	37.00	49.33	Dense
kosarak.dat	30.55	990002	41270	2498	8.10	0.02	Large
mushroom.dat	0.54	8124	119	23	23.00	19.33	Dense
pumsb.dat	15.92	49046	2113	74	74.00	3.50	Sparse
pumsb_star.dat	10.77	49046	2088	63	50.48	2.42	Sparse
retail.dat	3.97	88162	16470	76	10.31	0.06	Sparse

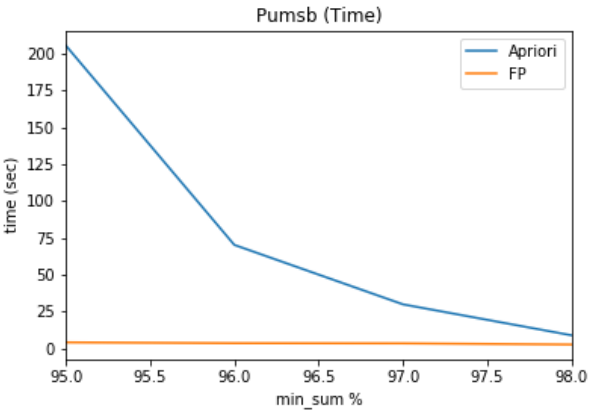
Execution Time

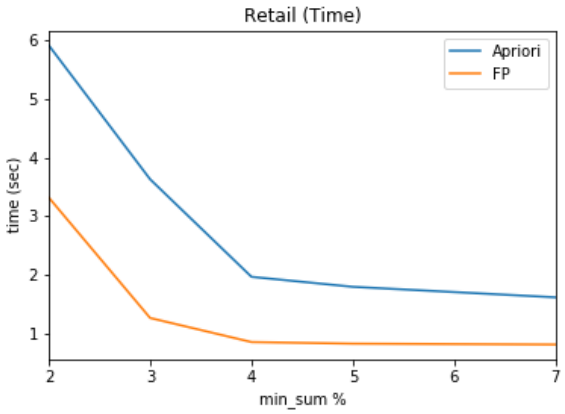








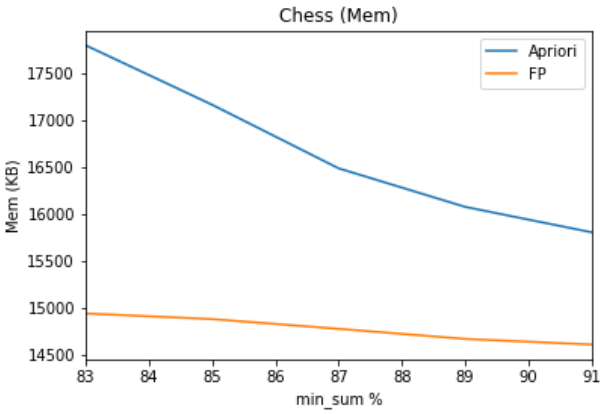


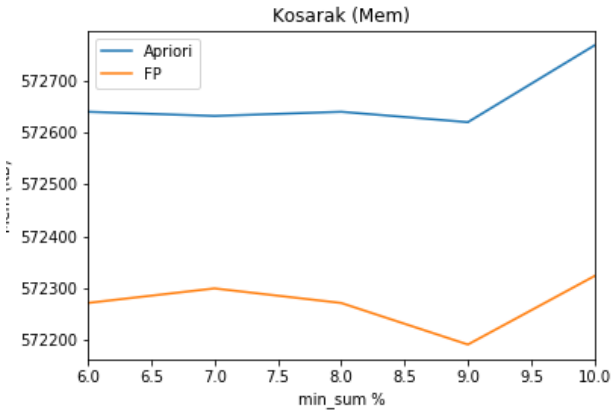


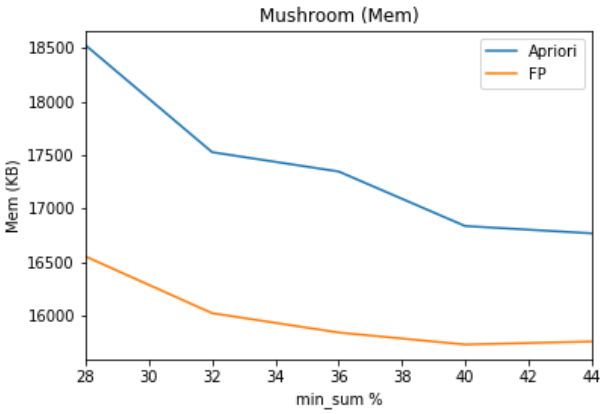
Finding

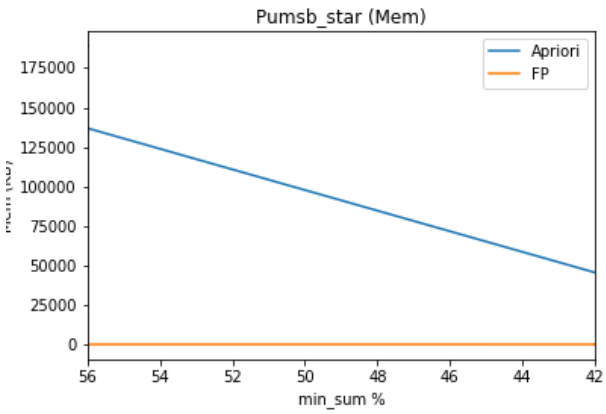
We can see that there is a generalisation that apriori takes longer times compared to fp-growth. But shorter times required as minimum support theshold increases.

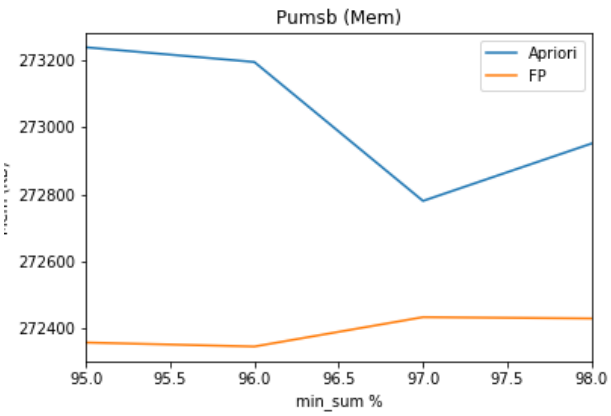
Memory Consumption

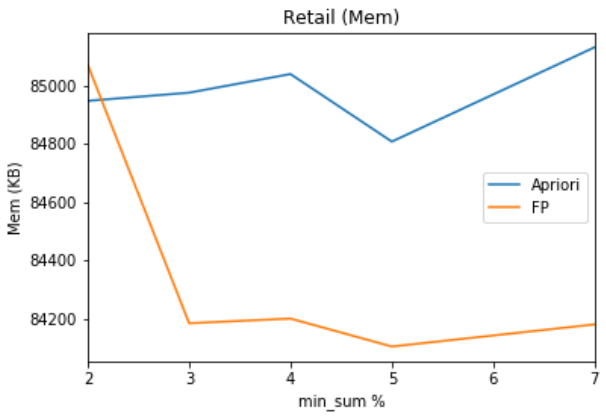












Finding

Like in previous section, we can see that there is a generalisation that apriori takes longer times compared to fp-growth. But shorter times required as minimum support theshold increases. Most of the times fp-growth's memory consumption is constant.